

Supplementary Table S3: Readiness of primary healthcare centres (HCs) for delivery of HEKIMA

HC	Sabatia (Urban)	Serem (Urban)	Tigoi (Rural)	Vihiga (Urban)	Lyanaginga (Rural)	Ebusiratsi (Rural)	Enzaro (Rural)	Ipali (Urban)	Ekwanda (Rural)	Bugina (Rural)
Approx. pop. served	32046	9891	18964	22250	10000	25000	7204	26380	28668	8920
General infrastructure	The HC had five exam rooms, adequate audio and visual privacy, and lighting. The average surface area of exam room and waiting area was 14.5 and 80.9m ² respectively. The HC had piped water and electricity with backups. It lacked a dedicated telephone contact and internet access.	The HC had three exam rooms, adequate audio and visual privacy, and lighting. The average surface area of the exam room and waiting area was 9 and 55m ² respectively. The HC had piped water and electricity with backups for both. It had a dedicated manned telephone line but lacked internet access.	The HC had three exam rooms with adequate audio and visual privacy, and lighting. The average surface area of exam room and waiting area was 14.5 and 40.5m ² respectively. It had electricity with a backup and water without backup. It lacked a dedicated telephone line. There was internet access in medical records department.	The HC had two exam rooms, adequate privacy and lighting, water and electricity with backups. The average surface area of exam room and waiting area was 8.9 and 49.9m ² respectively. The HC lacked a dedicated telephone line and internet access.	The HC had two exam rooms, adequate lighting and visual privacy but with suboptimal audio privacy. The average surface area of the exam room was 12m ² . The HC had electricity and water with backups. It lacked a dedicated telephone line and internet access.	Two exam rooms. Adequate audio, visual privacy, and lighting. Average surface area of exam room and waiting area was 195 and 2450m ² respectively. Piped water with backup. Electricity with no backup. No dedicated telephone line. No internet access.	The HC had one exam room with adequate lighting, visual privacy, but inadequate audio privacy. The average surface area of the exam room was 16m ² . It lacked power backup, piped water and internet access. It had a dedicated telephone line.	The HC had two exam rooms with adequate lighting but limited privacy. The average surface area of exam room and waiting area was 35 and 91m ² respectively. It lacked power backup, piped water, a dedicated telephone line and internet access	The HC had three exam rooms with adequate lighting and visual privacy. The average surface area of the exam room and waiting area was 13.7 and 105.8m ² respectively. The HC had electricity but without backup, a dedicated telephone line, and internet access in the medical records department. It lacked piped water.	The HC had four exam rooms with adequate lighting, visual privacy but suboptimal audio privacy. The average surface area of the exam room and waiting area was 11.5 and 137.3m ² respectively. It had electricity but without backup. It lacked piped water, a dedicated telephone line and internet access.
Workforce* (number per HC)	Medical officers-1; Clinical officers-9; Nurses-12; Nutritionists-2; Pharmaceutical technologists (PharmTech)-4; Medical records officers-4; Laboratory technologists (Lab Tech)-6; CHWs-30. Lacked a radiographer.	Clinical officers-5; Nurses-10; Nutritionists-1; PharmTech-1; Medical records officers-1; LabTech-3; CHWs-18. The HC lacked medical officers and a radiographer.	Clinical officers-5; Nurses-8; Nutritionists-1; PharmTech-1; LabTech-2; Medical records officers-2; CHWs-10. The HC lacked medical officers and a radiographer.	Clinical officers-5; Nurses-8; Nutritionists-1; PharmTech-1; LabTech-3; Medical records officers-2; CHWs-44. The HC lacked medical officers, radiographer.	Clinical officers-4; Nurses-4; Nutritionists-1; PharmTech-1; LabTech-3; Medical records officers-2; CHWs-3. The HC lacked medical officers and a radiographer.	Clinical officers-7; Nurses-8; Nutritionists-1; PharmaTech-1; LabTech-4; Medical records officer-1; CHWs-40. No medical officers, radiographer.	Clinical officers-3; Nurses-7; Nutritionists-1; PharmaTech-1; LabTech-2; Medical records officers-0; CHWs-22. No medical officers, radiographer.	Clinical Officers-5; Nurses-9; Nutritionists-1; PharmaTech-1; LabTech-2; Medical records officers-1; CHWs-21. The HC lacked medical officers and a radiographer.	Clinical officers-4; Nurses-4; Nutritionists-1; PharmaTech-1; LabTech-2; Medical records officers-1; CHWs-21. The HC lacked medical officers and a radiographer.	Clinical officers-2; Nurses-10; Nutritionists-1; PharmaTech-1; Medical records officers-1; LabTech-3; CHWs-20. The HC lacked medical officers and a radiographer.

General services provided	The HC provided Kenya essential package for health services 5 days a week. Malaria testing and treatment of minor injuries at least 6 days a week. It offered patient pick-up and referral services with transport support.	The Kenya essential package for health services were provided 5-7 days a week. The HC offered treatment of minor injuries and referral services. It lacked transport means for referrals.	Kenya essential package for health services on variable days. Least available services were PMTCT (1day) and family planning (2days). Mostly offered HIV/AIDS testing (7days), HIV care (6days). Provided referral services and means of transport.	The HC offered Kenya essential package for health services at least 5 days a week. Weekly TB-services and referral services were offered. The HC did not offer transport.	The HC offered the Kenya essential package for health services 5 days/week. Also, daily malaria and minor surgery services, referral services and means of transport.	The Kenya essential package for health services were provided 5 days/week. The HC also offered daily malaria, minor surgery and TB services. The HC had established referral pathway. It provided transport for upward referrals.	The HC offered the Kenya essential package for health services 5days/week, daily family planning, HIV testing and malaria services. It offered referral services but lacked transport to support referrals.	The Kenya essential package for health services provided 5 days/week. Other services included daily malaria and minor surgery, and referral services. It did not offer transport support for referrals.	The HC offered daily Kenya essential package for health services and referral services. It offered transport for upward referral.	The Kenya essential package for health services were provided 5 days/week. Malaria testing and treatment of minor injuries services were offered 6 days/week. The HC provided referral services, and transport means to pick patients and for upward referrals.
Availability of equipment and consumables supporting NCD service provision	The HC had functional basic clinical equipment (weighing scales, height meters, thermometer, stethoscope, BP machine and glucometers), glucose and urinalysis strips, refrigeration (3) and ECG machine. It lacked haematology services due to lack of reagents. It lacked biochemistry and radiology services, and CVD risk assessment tools.	The HC had functional basic clinical equipment except for a functional children's weighing scale, thermometer and height meter. Glucose and urinalysis strips were available, plus, refrigeration (4). It lacked haematology, biochemistry and radiology equipment, ECG machine and CVD risk assessment tools.	The HC had functional basic clinical equipment, and glucose and urinalysis strips. A haematology equipment was available but not in use due to lack of reagents. The HC had functional refrigeration (2) but lacked a biochemistry equipment, CVD risk assessment tools and an ECG machine.	The HC had functional basic clinical equipment except a height meter. It had functional refrigeration (2), glucose and urinalysis strips. It lacked an ECG, radiology, haematology and biochemistry equipment, and CVD risk assessment tools.	The HC had functional basic clinical equipment, and glucose and urinalysis strips. It lacked a functional child weighing scale, thermometer and refrigeration. Also missing were the haematology, radiology and biochemistry equipment, an ECG machine and CVD risk assessment tools.	The HC had functional basic clinical equipment. Functional refrigeration (3), and glucose and urinalysis strips were available. Only 1 of 8 glucometers and 1 of 4 haematology equipment were functional. No ECG machine, CVD risk assessment tools, radiology or biochemistry equipment.	The HC had functional basic clinical equipment, functional refrigeration (3), and glucose and urinalysis strips. It had a haematology equipment, but status of reagents supply was unclear. It lacked the biochemistry, ECG or radiology equipment, and the CVD risk assessment tools.	The HC had functional basic clinical equipment, glucose and urinalysis test strips, functional refrigeration (1) and haematology equipment. One of the three child weighing scales was functional. It lacked the biochemistry, ECG or radiology equipment, and CVD risk assessment tools.	The HC had functional basic clinical equipment, and refrigeration (2). There was one faulty height meter. It lacked the haematology, biochemistry, radiology or ECG equipment. CVD risk assessment tools were not available.	The HC had functional basic clinical equipment and refrigeration (5). It lacked glucose strips, urinalysis strips and CVD risk assessment tools. Also missing were the haematology and biochemistry equipment, X-ray and ECG machines.

Availability of NCD related services (Hypertension (HT), diabetes mellitus (DM) and mental health)/Readiness	The HC offered NCD primary prevention and health promotion services (Height, weight, blood glucose, foot vibration with tuning fork, urine albumin assay using strips). Staff had been trained on investigations. It had weekly HT/DM clinic, and management protocol for DM but not for HT. CVD risk scoring was not done. Mental health and palliative services not provided.	The HC offered NCD primary prevention and health promotion services. Weight and blood pressure (BP) checks. The staff had been trained on the investigations. Weekly HT/DM clinic. Management protocols for DM and HT were available. CVD risk scoring was not done.	The HC offered NCD primary prevention and health promotion services (Height, weight, blood glucose, foot vibration with tuning fork, BP checks). Weekly DM/HT clinic. Trained staff. Urine albumin assay was not done. Management protocol for DM was available but not for HT. CVD risk scoring not done. Mental health services not available.	The HC offered NCD primary prevention and health promotion services (Height, weight, BP, urine albumin, blood glucose measurement s). Trained staff. Weekly DM/HT clinic. It lacked management protocols for DM and HT. No CVD risk scoring. No mental health services.	Services included NCD primary prevention and health promotion services (Height, weight, blood glucose, BP, and urine albumin measured). The HC had trained staff and management protocols DM and HT. Weekly DM/HT clinic. No CVD risk scoring.	Services included NCD primary prevention and health promotion services (Height, weight, blood glucose, oral glucose tolerance test, BP and urine albumin assay). The HC had trained staff. Weekly DM/HT clinic. Management protocol for DM and HT. CVD risk scoring done. Provided mental health services.	The HC offered NCD primary prevention and health promotion services (Height, weight, blood glucose, BP and urine albumin assay). It had trained staff. Weekly DM/HT clinic. The management protocol for HT was available but not for DM. No CVD risk scoring.	The HC offered NCD primary prevention and health promotion services (Height, weight, blood glucose, BP and urine albumin assay). The HC had trained staff, weekly DM/HT clinic, and management protocols for DM and HT. CVD risk scoring was being done.	Services included NCD primary prevention and health promotion services (Height, weight, blood glucose, BP and urine albumin assay). The HC had trained staff and provided daily DM and HT services. The management protocol for DM was available but not for HT. Practice status of CVD risk scoring was unknown. Mental health services were provided on demand.	Services included NCD primary prevention and health promotion services (Height, weight, blood glucose, BP and glycated haemoglobin). HT, DM and mental health services were available 5 days/week. Weekly HT/DM clinic. The HC had trained staff and management protocols for DM and HT. CVD risk scoring was being done.
Health information system [‡]	The HC had documented patient critical data. There was no information on updated patient charts. It lacked a central database and data was not computerised. It had aggregated data and a disease surveillance system for infectious diseases with personnel assigned to collect and analyse the data.	The HC documented patient critical data. It had a central database, aggregated and disaggregated data, computerised data, and an infectious disease surveillance system. There was no information on updated patient charts.	The HC documented patient critical data and had updated patient charts. It had a central database, disaggregated data, and a disease surveillance system with personnel assigned to collect and analyse data. Data was not computerised.	The HC documented patient critical data. It had a central database, aggregated and disaggregated data, computerised data, and a disease surveillance system. Patient charts had not been updated.	The HC documented patient critical data. It had updated patient charts and a disease surveillance system with assigned personnel. It lacked a central database. Data was not computerised.	The HC documented patient critical data. It had updated patient charts and a central database. Data was computerised. There was a disease surveillance system with assigned personnel.	The HC documented patient critical data. It had updated patient charts and a disease surveillance system in place. It lacked a central database, and data was not computerised.	The HC documented patient critical data. It had a central database, and aggregated and disaggregated data. Data was not computerised, and patient charts not updated. It lacked a disease surveillance system.	The HC documented patient critical data. It had updated patient charts. It lacked a central database and a diseases surveillance system. Data was not computerised.	The HC documented patient critical data. It had a central database, aggregated and computerised data, and a disease surveillance system with assigned personnel. The patient charts had not been updated.

Quality indicators for healthcare delivery	The HC had 60 patients registered in the DM/HT clinic, 30% were regular patients (i.e. had kept more than 75% of their appointments in the previous year). The average patient waiting time at the DM/HT clinic was 30 minutes. The average time spent by a patient with a clinician was 15 minutes.	The HC’s estimated patient load and waiting time were not provided.	The HC had 60 patients registered in the DM/HT clinic. None were regular patients. The average patient waiting time was 30 minutes. The average time spent by a patient with a clinician was 15 minutes.	The HC had 67 patients registered in the DM/HT clinic. The average patient waiting time was 45 minutes. The average time spent with a clinician was 30 minutes.	The HC had 20 patients registered in the DM/HT clinic. The average patient waiting time was 30 minutes. The average time spent by a patient with a clinician was 15 minutes.	The HC had 13 patients registered in the DM/HT clinic, 13% were regular patients. The average patient waiting time was 20 minutes. The time spent with a clinician was 15 minutes.	The HC had 40 patients registered in the DM/HT clinic, 35% were regular patients. The average patient waiting time was 20 minutes. Average time spent with a clinician was 20 minutes.	The HC had 35 patients registered in the DM/HT clinic. 25% were regular patients. Average patient waiting time was 20 minutes. The average time spent with a clinician was 20 minutes.	The HC had 30 patients registered in the DM/HT clinic. 80% were regular patients. The average patient waiting time was 10 minutes. The average time a patient spent with a clinician was 10 minutes.	The HC had 20 patients registered in the DM/HT clinic. 80% were regular patients. The average patient waiting time at the clinic was 9 minutes, while the average time a patient spent with a clinician was 20 minutes.
Essential medicines¥ (Drugs for HT and DM, antibiotics, and painkillers)	There was variable availability of essential medicines. Drugs for HT, DM and painkillers were available but not for most antibiotics. Antidepressants were available. The longest stockout was 8 weeks for calcium channel blockers.	Multiple essential drugs were out of stock. These were Angiotensin-converting enzyme (ACE) inhibitors, calcium channel blockers (CCBs) and thiazide-like diuretics for HT; Glibenclamide and Metformin for DM; antibiotics and painkillers.	Essential HT drugs were out of stock (beta blockers, ACE inhibitors, furosemide and CCBs). Insulin and Ceftriaxone antibiotics were out of stock. Painkillers were available. The longest stockout period was 4 weeks for paracetamol and diclofenac.	Most drugs were out of stock: ACE inhibitors, CCBs, glibenclamide, insulin, metformin, ciprofloxacin and paracetamol. The longest stock out period was 2 weeks for all drugs.	Not Reported	The drugs reported out of stock were beta blockers, ACE inhibitors, CCBs, cotrimoxazole, ciprofloxacin, diclofenac and paracetamol. DM drugs were available. The longest stockout period was 16 weeks for CCBs and diclofenac.	Most drugs were out of stock: ACE inhibitors, CCBs, thiazide-like diuretics, insulin, ciprofloxacin, cotrimoxazole, amoxicillin, diclofenac and paracetamol. The longest stockout period was 8 weeks for paracetamol.	Drugs reported out of stock were beta blockers, CCBs, furosemide, glibenclamide, metformin, ciprofloxacin, ceftriaxone, diclofenac and paracetamol. The longest stockout period was 24 weeks for CCBs and diclofenac.	Drugs reported out of stock were beta blockers, ACE inhibitors, CCBs, insulin, ciprofloxacin, cotrimoxazole, amoxicillin, paracetamol and diclofenac. The longest stockout period was 3 months for CCBs.	Drugs reported out of stock were glibenclamide, insulin, CCBs, ciprofloxacin, cotrimoxazole, amoxicillin, ceftriazone, diazepam, diclofenac, paracetamol and omeprazole. The longest stockout period was 3 months for HT/DM drugs, antibiotics and omeprazole.
Financing	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported

Leadership and governance	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were available. Staff had been trained on core duties and functions.	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were not available. Staff had been trained on core duties and functions.	The HC had not displayed the facility organisational chart. Staff job descriptions were missing. Staff had been trained on core duties and functions.	The HC had not displayed the facility organisational chart. The staff job descriptions were missing. Staff had been trained on core duties and functions.	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were available. Staff had been trained on core duties and functions.	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were available. Staff had been trained on core duties and functions.	The HC had not displayed the facility organisational chart. Staff job descriptions were available. Staff had been trained on core duties and functions.	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were not available. Staff had been trained on core duties and functions.	The HC had not displayed the facility organisational chart. Staff job descriptions were available. Staff had been trained on core duties and functions.	The HC had a displayed facility organisational chart with all staff accounted for. Staff job descriptions were not available. Staff had been trained on core duties and functions.
Relationship with community and markets.	There were nearby health facilities offering NCD screening and testing services. There was no home care services were available for persons with end stage NCDs. There were no local activities/organisations/markets targeting NCD control. There was no collaboration with markets targeting NCD prevention. There was optimism over benefits of HC-market collaboration to the community. The HC staff were open to working with CHWs.	There were nearby health facilities offering NCD screening and testing services. No home care services were available for persons with end stage NCDs. No local activities/organisations/markets targeting NCD control. No collaboration with markets targeting NCD prevention. Staff were not optimistic that the community will benefit from a HC-market collaboration, but were open to working with CHWs.	There were nearby health facilities offering NCD screening and testing services. No home care services were available for persons with end stage NCDs. There were no local activities/organisations/markets targeting NCD control. No collaboration with markets targeting NCD prevention. Staff were optimistic over benefits of HC-market collaboration to the community, and willing to work with CHWs.	There were nearby NCD screening and testing services. No home care for persons with end stage NCDs. There was a local organization targeting NCDs, but local markets were not involved. There was prior collaboration with markets in NCD educational campaigns, optimism and willingness to work with CHWs.	There were nearby health facilities offering NCD screening and testing services. No home care services were available for persons with end stage NCDs. No local activities/organisations/markets targeting NCD control. No collaboration with markets targeting NCD prevention. Optimism over benefits of HC-market collaboration by staff, and receptive to working with CHWs.	There were no nearby health facilities offering NCD screening and testing services. No home care services for persons with end stage NCDs. There was a local organization targeting NCDs, but local markets not involved. Past collaboration with markets in NCD educational campaigns. Staff were optimistic and willing to work with CHWs.	There were nearby health facilities offering NCD screening and testing services. There was no home care services available for persons with end stage NCDs, no local activities/organisations/markets targeting NCD control, and no past collaboration with markets targeting NCD prevention. Staff were optimistic and open to working with CHWs.	There were nearby health facilities offering NCD screening and testing services. There was no home care available for persons with end stage NCDs, no local activities/organisations/markets targeting NCD control, and no collaboration with markets targeting NCD prevention. Staff were optimistic regarding benefits of HC-market collaboration, and receptive to working with CHWs.	There were nearby health facilities offering NCD screening and testing services. There was no home care available for persons with end stage NCDs, no local activities/organisations/markets targeting NCD control, and no past collaboration with markets targeting NCD prevention. Staff were optimistic over benefits of HC-market collaboration, and receptive to working with CHWs.	Other health facilities were available locally offering NCD screening and testing services. No home care was available for persons with end stage NCDs. There were no local activities/organisations/markets targeting NCD control. No collaboration with markets targeting NCD prevention. Staff were optimistic over benefits of HC-market collaboration, and receptive to working with CHWs.

Sustaina bility of HEKIMA	Sustainability of HEKIMA will depend on funding, regular communication, support and appreciation of the programme by community members, leadership and monitoring.	HEKIMA’s sustainability will depend on funding, regular communication, support and appreciation of the programme by community members, adaptability of the intervention, government support, leadership and monitoring.	Hekima’s sustainability will depend on funding, support and appreciation of the programme by community members, adaptability of the intervention, government support, leadership and monitoring.	Sustainability of HEKIMA will depend on funding, regular communicatio n, community support and appreciation of the programme, adaptability of the intervention, government support, leadership and monitoring.	Sustainability of HEKIMA will depend on regular communicatio n, support and appreciation of the programme by the community, adaptability of the intervention, government support, leadership and monitoring.	Sustainability of HEKIMA will depend on funding, regular communicatio n, support and appreciation of the programme by community members, government support, leadership and monitoring.	HEKIMA’s sustainability will depend on funding, regular communicatio n, support and appreciation of the programme by community members, adaptability of the intervention, government support, leadership and monitoring.	HEKIMA’s sustainability will depend on funding, regular communicatio n, support and appreciation of the programme by community members, adaptability of the intervention, government support, leadership and monitoring.	HEKIMA’s sustainability will depend on funding, regular communication, support and appreciation of the programme by community members, adaptability of the intervention, leadership and monitoring.	HEKIMA’s sustainability will depend on funding, regular communication, adaptability of the intervention, government support, leadership and monitoring.
† Includes Family planning, Antenatal care, Child health services, HIV testing and counselling, HIV/AIDS care and support, PMTCT and Tuberculosis services.										
*None of the HCs had a radiographer, pharmacist. The medical officer was also responsible for data analysis.										
‡ Areas covered included collection of patient critical information, regularly and correctly updating patient charts, having a central database, staff specifically assigned to collect & analyze data, and computerized data.										
¥Covered availability of essential medicines for diabetes and hypertension - Diabetes (glibenclamide, metformin, insulin); HT (beta blockers, thiazide-like diuretics, furosemide, ACE inhibitors, aspirin, calcium channel blockers and statins).										