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Final/8th Month Status Report

Project: KENYA COUNTY PREPAREDNESS INITIATIVE: STEMI CARE

Agreement: Contribution Agreement (Philips Foundation)

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KENYA COUNTY PREPAREDNESS INITIATIVE: STEMI CARE

EXECUTIVE SUMMARY

The report summarizes the activities and outputs realized under the Heart Attack Concern Kenya (HACK) Project funded by the Philips Foundation. The donation agreement was signed on 25th September 2020. As part of the agreement with Philips foundation, HACK was to present an 8-month progress report / Status. This report is intended to share updates of the project with an aim of reporting on performance, key outcomes, and documenting lessons learned as well as the areas of improvement experienced during the project implementation.

The HACK Project is implementing a preparedness initiative to create a model for quality delivery of STEMI care in 6 county hospitals. The Project is set out to ensure county level health care workers are equipped with proper skills to diagnose and manage STEMI. The Project is being implemented in collaboration with the county governments and the Philips Research team in Kenya.

The HACK project aims to improve preparedness for recognition, diagnosis and prompt and appropriate treatment for heart attack patients through:

- Development of STEMI guidelines, training of health workers and mentorship
- Equipping of facilities with ECGs and training
- Strengthening heart attack referral systems
- Educating the public on recognition of heart attack symptoms and appropriate care
- M&E for learning and policy advocacy

This status report covers the first 8 months of the projects' one-year implementation period. The purpose of this report therefore is to provide updates on healthcare workers capacity building, patient outcomes, working Community referral structures, partnerships that has created effectiveness and sustainability that would inform our partners, and donors like Philips Foundation, and County governments among others on the need to scale up to other counties where such services are needed to save lives. This report should also generate transferable learning for a wider audience including donor agencies, governments of other counties, including policy-makers.

1. INTRODUCTION

The reports presents a summary of the project activities and the status of implementation. Separate activity reports are included as part of this report submission, these include:

- Kick Off meeting report
- Baseline Report of the Kenya County Survey
- Healthcare workers training report
- Community Health Volunteers Report
- STEMI Protocols
- M&E Framework

2. BACKGROUND

Management of heart attack in Kenya especially at the County level faces major challenges ranging from systemic health system challenges such as lack of equipment, commodities and medicines, to limited human resources and limited capacity to diagnose and manage heart attacks. At the population level, urbanization and globalization has contributed to lifestyle changes and the rising number of heart attacks in Kenya. This has affected the socioeconomic status of the community and on its own has become a barrier. Additionally, low level of awareness of heart attack symptoms at the community level, delays in seeking care and health system factors such as delays in recognition of heart attack signs and symptoms, minimal diagnostic and treatment capacity, all contribute to adverse outcomes in heart attack patients.

Heart Attack Concern Kenya (HACK), is implementing a Project in 3 counties in Kenya to address some of the gaps in heart attack awareness and care in Kenya. The priorities for implementation were informed by a needs analysis carried out in December 2020, the results are reported in the Project's baseline report. The project has been guided by a set of objectives and indicators to ensure we have met the goal of ensuring county hospitals are well prepared to tackle STEMI emergencies.

This report provides a highlight on some of the achievements, activities and challenges HACK has experienced during the implementation process.

3. IMPLEMENTATION PROCESS AND ACCOMPLISHMENTS

This section of the report provides a summary of the implementation process in the various result areas of the Project.

3.1. Development of STEMI guidelines, training of health workers and mentorship

Availability and adherence to evidence-based treatment guidelines for acute myocardial infarction (AMI) has been shown to reduce mortality and adverse cardiovascular events. Guidelines and protocols are necessary to guide health care workers on diagnosis, optimal treatment options and form the basis for quality improvement audits and improvements at the hospital level. Results from the baseline assessment indicated that none of the 6 target hospitals had STEMI protocols in place. The HACK Project supported the

development of STEMI Protocols for use in the target facilities with input from cardiologists, county staff and health workers working in the target facilities, the protocols are included in the submission. STEMI protocols provide guidance on the management of patient presenting with chest pain at the facility level. Protocols were developed depending on the patient care and management in county hospitals. Healthcare workers were later trained on how to use the protocol.

Training of healthcare workers was started in March 2021 and it was carried out in two phases:

1. Three-hour webinar training session for three days for all 75 healthcare workers
2. Physical (face-to-face) training session for 2 days in each county.

A training criterion was developed to help in the identification of the health workers to be trained. The project coordinators in the three counties with the help of the county governments and the lead physicians in the counties supported the identification of health workers to be trained and the logistics for the trainings. The trainings were structured in three key areas to ensure that the Project met its goals. The key training areas were, 1) Introduction to ACLS/BLS, 2) Introduction to ACS, and 3) Fundamentals of ECG. To gauge the level of knowledge and skills among the healthcare workers, a pre-test was carried out on all the 75 healthcare workers. 22% reported having had advanced cardiac life support training, 59% reported having had Basic life support training, and 19% had no prior training on life support.

We assessed the ability of the healthcare workers to obtain a 12-lead ECG before the training and approximately 59.3% of the healthcare workers could not carry out an ECG. After the training, the confidence level increased to 97.1%. 40.7% of healthcare workers were not confident enough to diagnose an MI while 29.7% were somewhat confident. After the training, 68.6% were very confident to diagnose an MI while only 7.4% were unsure. The detailed training report is available.

A WhatsApp based platform was created for the health worker to provide an avenue for mentorship, knowledge sharing and support for diagnosis and management of the conditions identified. Cardiologists who are part of the HACK team are able to offer support remotely through the WhatsApp platform. The Project also developed a second ECG training module that will be used to training health workers through online webinars that will run for five months. This training module covers diagnosis and management of STEMI. A case-based learning approach will be used to ensure healthcare workers are able to relate to the training and understand.

As part of the continuous education for healthcare workers, we managed to train 495 healthcare workers over the period of 5 months training. To gauge their understanding, a post-test was carried out and the results were positive as majority of them were able to interpret ECGs and diagnose a STEMI.

3.2. Equipping of facilities with ECGs and implementation

The easiest and most efficient way of diagnosing STEMI is through an electrocardiogram. The American College of Cardiology (ACC) guidelines recommends an ECG to be done within 10 minutes to avoid adverse cardiac outcomes on the patient. Each county was equipped with two ECG machines, one in level 5 county hospital and another in Level 4, both capable of telephonic transmission of ECGS for interpretations and

guidance. All healthcare workers were trained on the use and operation of the ECG machines. The ECG machines were placed in the A&E departments of each county hospital.

Since the installation of the ECG machines in March 2021, we have managed to conduct 962 ECG exams on patients presenting with chest pain in the target hospital. The STEMI Protocols guide the health workers on the patients that fit the criteria for an ECG exam.

ECG examinations are also in the wards and outpatient clinics indicating the high need for ECG equipment in the hospitals. Since the implementation of the ECGs, a number of cardiac conditions have been diagnosed and patients treated or referred. Out of the 962 ECGs, we have managed to diagnose 32 cases of 1st degree AV block, 41 right bundle branch block (RBBB), 30 left bundle brunch block (LBBB), 52 Sinus bradycardia, 164 Left Ventricular Hypertrophy (LVH), 163 Sinus Tachycardia, 13 Acute MI and 4 complete heart block. Patients who had complete heart block were successfully referred to Kenyatta National Hospital.

The baseline survey showed that only one of the hospitals had an ECG available within 30 minutes, it took more than 90 minutes to more than 3 hours for an ECG to be done and interpreted in the other 5 hospitals. With the placement of the ECG machines and training, this gap reduced tremendously with now ECGs being done within 10 minutes and interpretation is effectively done with proper diagnosis. Support from Tricog team has also come a long way to ensuring the machine is well serviced and this has improved the patient flow in casualty of the county hospitals. Having a focal person carrying out the ECGs has eased the burden and workload of healthcare workers, enabling them to concentrate on the treatment options of patient who have been diagnosed with cardiac conditions.

3.3. Strengthening heart attack referral system

Timely transfer of patients to the nearest hospitals for initial diagnosis and management, and later to facilities where reperfusion therapy can be administered such as percutaneous coronary intervention (PCI) capable facilities is important for further evaluation and treatment of STEMI patients. As part of the HACK Project, a referral network has been created from the community level to the six target county hospitals. Training of CHVs on infographic and symptoms of chest pain has created a referral network from the community (households) to the County facilities and now to the main referral networks. HACK is planning to partner with Armref and Flare ambulance companies to create a more stable and reliable referral network to ensure timely care has been given to patients.

3.4. Educating the public on recognition of heart attack symptoms and appropriate care

The Project developed simplified education material for educating the public on heart attack signs and symptoms, risk factors and healthy living. The education material were translated into local languages in both print and video. Infographics on heart attack signs and symptoms, risk factors and healthy living have been disseminated by CHVs in the community and by the project team in the social media pages. The education content has also been shared through various local radio stations for airing and broadcast. We

managed to develop videos and audio of the infographics and had them translated into local languages of the three counties. This was aired on radio stations to ensure proper dissemination of information has been done.

Positive impact has been felt on the community level and patient as now they can be able to access cardiac diagnostic services. Information on chest pain disseminated by the CHVs has been well received and now the community can know the difference between a pneumonia chest pain and a heart attack chest pain. Accessibility of the ECG in the lower level of hospital has greatly improved the timely diagnosis and treatment of patients improving their quality of life and better management of their health. Community members who have chronic disease are now able to be screened for early sings of cardiac disease and manage it before it's too late. As of now we have 24% of the referrals done by CHVs, 58% are patients who just walked in to casualty with symptoms of chest pain, 2% were from print media and 16% were from the Level 4 facilities

3.5. M&E for learning and policy advocacy

One of the main components of the HACK Project is gathering learnings and sharing best practices for policy and investments advocacy. The Project conducted a baseline assessment that provided information on the service delivery gaps in the target hospitals. The findings informed the design of the Project and were used to inform and lobby the counties to improve investments for heart attack service readiness and availability. Some of the outcomes of the evidence-based lobbying process is the investments by the county hospitals to procure consumables for the ECGs, procure laboratory reagents for Troponin testing and Thrombolytics for management of patients. The county hospitals have also allocated space and human resource to support the ECG services.

Additionally, the Project M&E plan contains indicators that are tracked to inform project implementation and performance. A tracking tool was developed to track each indicator monthly to ensure that there is up-to-date data and use the data to come up with mitigation strategies where necessary. The updated M&E framework is shared with this report.

Key findings from the baseline assessment and some of the implementation updates were shared during the 15th (Pan-African Society of Cardiology) PASCAR and Kenya Cardiac Society (KCS) Congress 2021. The Congress seeks to bring together key players from the healthcare ecosystem, and provide a conducive environment to facilitate a cutting-edge learning experience in cardiovascular medicine and surgery. One of the presentations from the HACK Project won a best presentation award.

4. Challenges faced during implementation

During project implementation, HACK has encountered a series of challenges from the County hospitals. Some of the challenges faced are:

1. High staff turnover in the hospitals – This affected the kick off the ECGs in the Counties and the lack of ownership. This challenge was resolved by ensuring we had a focal point person to carry out ECGs in the county hospitals and ensure data are keyed in.
2. Deficient Manpower – trained health care workers within the health Hospitals.

3. Systemic challenges in the level 4 hospitals.
4. Cumbersome procurement process in the County hospitals – the project had a difficult time in ensuring the ECG papers were procured by the hospitals and have the thrombolytics.

5. CONCLUSIONS

The project has identified the need to strengthen health systems infrastructure and human resource to provide quality cardiac care. The insights from the implementation process also highlight the need to involve the key decision makers and the importance of government support and political good to ensure successful implementation and sustainability. The involvement of the county governments has ensured the allocation of resources to procure essential drugs and commodities for the management of STEMI. Continuous capacity building among health care workers is essential to improve their knowledge in medical management of patients. With the rising number of Non-communicable diseases, the counties should set up structures or systems strong enough to manage these public health concerns. These structures would aim to reduce the morbidity and mortality of patients through availability of services, timely interventions and improvements in the referral systems for further management.

6. RECOMMENDATIONS

From the learnings from the implementation process, below are the recommendations:

6.1. Capacity Building

The survey and implementation of the project has encountered some challenges especially those related to availability of human resources and the skill level of healthcare workers. STEMI preparedness needs healthcare workers that have STEMI recognition, diagnosis and management capacity. For example, skills such as ECG examination and interpretation were initially lacking among the different carders of health care workers working in the target facilities. This situation is aggravated by the lack of enough personnel for healthcare service delivery. This was a challenge in the project as we had to re-train healthcare workers as there was a high turnover of personnel in the hospitals. It is therefore vital for county governments to ensure the patient to health worker ratio has been reduced, that the available human resource has the necessary knowledge and skills to deliver care, and that there is retention/redistribution of health workers within a facility based on competencies and need.

6.2. Governance

Health care service delivery in the country and the counties is mostly measured by the impact, inputs and outcomes of implemented projects. Most programs track their success by activity outputs, coverage and reach of the projects and lack metrics to track impact on patient outcomes. Good governance can promote effective health service delivery especially when informed by data and evidence. Some of the aspects of good governance is standards, incentives, information, and accountability. In order to measure good governance

on healthcare delivery, more focus should be put on performance rather than impact of the service. Improving performance of health care workers in the counties will raise the level of health output. In order to track good performance in service delivery, some of the things that need to put in place is continuous medical training for health care workers, clinical protocols such for STEMI management to be in place to guide health care workers on management and service coverage.

6.3. Proper implementation of policies

Inadequacy in proper implementation of policies in health leads to a decrease in efficiency of health systems and indirectly affects health of the citizens of the country and the county as a whole. Therefore, for policies to be taken up, proper integration and training of healthcare workers need to be in place.

7. NEXT STEPS

1. We have created modules for the ECG refresher courses for the three Counties to ensure knowledge on ECG diagnosis and interpretation is well understood and for sustainability of the project after the project has ended.
2. The end line survey has been set to take place end of January and data and reports will be availed before the projects ends.
3. Philips Foundation has granted a no cost Extension of 3 months to us as the project experienced delays in kicking off.
4. As part of the project closure, we will have a project review meeting with the stakeholders to review the projects impacts and bottlenecks and look at strategies of how the project can be implemented well in other Counties.

ANNEX

The Hyperlinks to the following reports are below:

- Kick Off Meeting Report
- STEMI Protocol
- Baseline Report
- Health workers training report
- Community Health Volunteers Report
- M&E Framework