



## Strengthening the Primary Care System for Prevention and Control of Cardiovascular Diseases in Kenya: Feasibility Study of Health Kiosks in Community Markets

### STUDY BRIEF

#### Introduction

Non-communicable diseases (NCDs) account for 50% of hospital admissions and 55% of hospital mortality in Kenya. Cardiovascular diseases (CVDs) lead NCD mortality due to high prevalence of multiple risk factors (hypertension, diabetes, cholesterol, smoking, obesity). Local and regional policy initiatives provide a platform for a shift of emphasis in health systems science. There is however sparse evidence on how to achieve it in complex socio-cultural-political contexts. Community markets are social institutions with untapped potential for public health. Sustainable, community-based initiatives that interface with health systems may offer a unique route to promote access to CVD preventive and management interventions.

The proposed study seeks to develop a novel potentially cost-effective interface between primary health care and local communities via public health kiosks in community markets for the prevention and control of CVDs. This is a collaborative systematic inquiry into the capacity of community health volunteers (CHVs) and nurses to implement market-based health kiosks, including the use of simple existing technologies to screen CVD risk factors, track the care path linkage between the market kiosk and health centre (HC), and send health promotion messaging to those screened and found to be at risk.

**Principal health systems research question:** Can the creation of public health kiosks in community markets, managed by nurses and community health workers strengthen the primary health care systems to improve the prevention and control of cardiovascular diseases in Kenya?

#### Approach

This is a feasibility study to be conducted in Vihiga County. The County was chosen due to the increasing burden of NCDs, with cardiovascular diseases among its top 10 causes of morbidity and mortality.

The study will focus on evaluation of contexts, processes and experiences of delivering the intervention and implications for primary health care (Levels 1-3). It uses a participatory approach with representation of partners from different sectors from the outset to ensure adaptability and accessibility of the intervention to the needs of the whole community. Qualitative and quantitative analytic methods will be used to ensure theoretical and methodological integrity. A key focus will be to understand “*what works in which conditions for whom?*”, and to identify the mechanisms of change that explain how the intervention might best lead to a positive outcome. The hybrid approach aligns well with the WHO recommendations for systems thinking in the strengthening of health systems.



Detailed developmental work will take place in 4 randomly selected health centre-market clusters (2 intervention, 2 comparator). A minimum number of 320 participants (160 per arm) presenting with CVD risk factors (high blood pressure, diabetes, smoking, overweight/obesity) will be selected to join the study.

Nurses and CHVs will be trained to deliver evidence-based CVD health promotion, risk screening, and early intervention.

Data collection will involve:

1. Stakeholder consultations to understand and develop a model of factors affecting the creation and implementation of health kiosks in community markets, and the system wide ramifications of the intervention.
2. Readiness assessments of participating markets and HCs including technological, infrastructure, and sociocultural contexts of markets and of the primary care systems
3. Semi-structured interviews to establish enhancers and barriers to the intervention, and consequences of change in the health system.

The Kiosk will be open 3 days a week for 6 months with follow up of referrals to HCs continuing for 1 year. It will be staffed primarily by 2 CHVs who will be supervised by a nurse with primary care experience. The CHVs will conduct screening of CVD risk factors using an e-questionnaire, do health promotion and referrals, send text reminders, and promote registration for National Health Insurance Fund (NHIF), the latter being an important element of the government goal to achieve universal health coverage. Nurses will supervise the CHVs, provide feedback or consult on challenging cases. The target sample will be those requiring follow-up/ referral. Data will be entered into a tablet with a custom app designed for the project. Data quality and standards will be ensured through training in standardized measurement protocols according to Good Clinical Practice (GCP) standards. Data will be checked for completeness and accuracy.

Triangulation of qualitative and quantitative findings will help to understand how the intervention led to observed outcomes and to identify enabling and constraining factors. Synthesized findings will inform the design of subsequent larger studies for wider testing of market-based health kiosks.

**Ethical considerations:** The conduct of the study will be guided by KEMRI and MRC guidelines for good research practice. Approval has been obtained from research ethics committee at KEMRI. Administrative approval will be obtained from Vihiga County. Informed consent and assent will be sought from all participants.

**Timelines:** The entire study duration is two years.

### Benefits to the County and National Government

Improved service delivery	<p>The study supports wider linkages outside of clinical boundaries.</p> <p>It will accelerate linkage to care for asymptomatic cases, which is in synergy with the county health agenda of improving the health of Vihiga residents, especially in the priority area of non-communicable diseases like diabetes and hypertension.</p>
Improved stakeholder engagement	<p>The study will improve access and networking between communities and the health system. Community engagement, critical for implementation and timely dissemination of findings, will create trust and confidence in the health system (mandatory public participation as per the constitution).</p> <p>Using innovation (inter-ministerial partnerships) to bringing services closer to the people (convenience).</p>
Information access – improved health awareness	<p>The study supports improved access to information by providing educational material and advice on CVD prevention and health promotion. This is expected to improve health literacy and promote adoption of healthy lifestyle habits to help reduce CVD incidence.</p>
Surveillance	<p>The kiosks will provide preliminary data to support formal surveys. Since most patients present late for care, hospital-based data only capture advanced morbidity and mortality. The kiosk will provide data from asymptomatic people, which is useful for planning purposes and support preventive services.</p>
Capacity development	<p>A curriculum for training frontline health workers will be developed. This will be a significant milestone in supporting downward cascading of national CVD prevention guidelines.</p> <p>Nurses and CHVs will be trained thus increasing their skills.</p>
	<p>Training of HCWs on open MRS which can run offline and is sustainable</p>
Inform/influence policy	<p>Provide an evidence base for a model for CVD prevention and management in a real-world care setting in Kenya. The research approach used in this study supports rapid translation of research findings to service delivery.</p>
	<p>If found feasible and accessible, the study findings will provide information to inform scale up enquiry of CVD prevention and management at the primary level of care in line with UHC.</p>

	<p>The focus on prevention will reduce spending on management of CVD-related morbidity. By improving health seeking behaviour in the community, this will in the short term help reduce preventable morbidity and mortality through early detection, and in the long term control health expenditure.</p>
	<p>Approaches developed in the study may be transferable to primary care activities for other NCDs.</p>

### Study expectations

For realization of this study, the County is requested to assist in the following:

1. Provide approval for conduct of study in the County.
2. Provide administrative access to the study sites.
3. Facilitate engagement and cooperation from relevant County Departments and the County Commissioner.
4. Promote engagement and participation of county representative in stakeholder workshops to build consensus and review project progress and achievements.
5. Avail health care workers to the study for training and implementation.
6. Contribute in mapping the way forward in scaling up the intervention.