Philips Foundation

PROJECT DESCRIPTION

Project title

Innovating access to primary health care and referral by a data driven improvement programme that combines best practices in a scalable package in Kenya

Project summary

Primary health care is the gateway to the health system, but it is plagued by a number of problems that its non-performance endemic. A consequence is a very ineffective use of the referral system. This problem is amplified by the strong emergence of non-communicable diseases (NCDs). NCDs are responsible for 71% of deaths globally. WHO reports an overall prevalence of 28.7% for hypertension in Kenya. Diabetes is under diagnosed and has a prevalence of 3- 5%. Once diagnosed, it is important to continuously monitor selected factors in a structured manner.

Digitization has a great potential to revolutionize the health system. In the project, we will implement an integrated solution consisting of a light Electronic Medical Record (EMR) with a dedicated smart phone / tabled based solution for pregnancy monitoring and management. Together these digital solutions make up a rather complete ecosystem for primary health care and the referral chain. This is a novum in Africa.

The digital solutions will be rolled out in the NGO sector (semi-private) for a hospital (level 4) and a number of related health centre (level 3). Generally, the private or semi-private sector has a different incentive structure and less constraints to innovate compared to public sites. However, it does generate models that can be adapted to the public sector.

At the same time it is recognized that although technology is a strong enabler, it is only a part of the solution. Other main bottlenecks are the interplay between attitude change, adapted organizational arrangements, a sound business case and re-aligned institutional processes. These changes can only be put in motion if people see what is possible with technology. They need to experience good change hands-on and to get evidence of the results. Therefore continuous improvement cycles will be realized that are locally owned and follow a simple and easy to apply method based on the Kaizen principles. The continuous improvement cycles (CIC) are driven by (1) the easiness of the digital solution and the availability of data, (2) the benefits it will bring to the performance of the health workers and the health facilities. Secondly, scientifically set up studies on implementation success, acceptance and cost effectiveness will be run with baseline, midline and endline evaluations.

Use will be made of the Triple Aim Research methodology and applied to diabetes mellitus, hyper tension, maternal health care and two other disease patterns to represent the whole spectre of care. Triple aim implies to measure; (1) health outcomes, (2) patient experience and convenience, (3) cost effectiveness of treatment. It is a research methodology for value-based care that emphasizes the point of view of the patient. To reflect well the incentive structure in Africa, the research will be extended

with (4) the effect on the performance of the health worker and (5) the effect on the performance of the health facility and its efforts to improve the referral chain.

Description of the solution

Each site includes:

(1) The digitization of the clinical processes (triage, consultation, laboratory, imaging and so on) all recorded in the EMR and the logistical processes (registration, billing, booking rooms, beds, theatre, pharmacy, stocks, insurance etc,). In view of its decision support possibilities, it is called the 'intelligent hospital system'. Only at Kikuyu hospital, integration with the existing system will take place.

(2) Installation of diabetes mellitus and hypertension (DM & HT) call centre at the referral hospitals, that fully integrates with the above-mentioned EMR. Nurses at the call centre can monitor the patients and their data, including chatting and emergency calls.

(3) Community health volunteers will work through a portal to screen, monitor or enter patient data. (4) Patients will have a mobile App for tasks, education material, entering medical values and to be in contact with the nurse/doctor at the call centre.

(4) Specialist consult takes place through the specialist portal, based on data directly pulled out of the EMR and the ability to assign tasks to patients and to communicate with other health professionals. The set-up is presented in the scheme below:

The remote control of the patient population includes the active engagement of the community health volunteers, the patients and their families. The community health volunteers (CHV) will be trained and supervised by the Kiambu County. The CHV will have glucometers, strips for screening on diabetes and blood pressure meters for hyper tension. The results will be included either in a mobile App the patient has on his phone or on the CHV portal, both connect directly to the Lite EMR at the health facility all the relevant data of that specific patient.