The LABORATORY AFRICAN REGIONAL COLLABORATIVE

Integrating continuous quality improvement approaches for HIV service delivery in PEPFAR-supported countries: Kenya 2018–2019

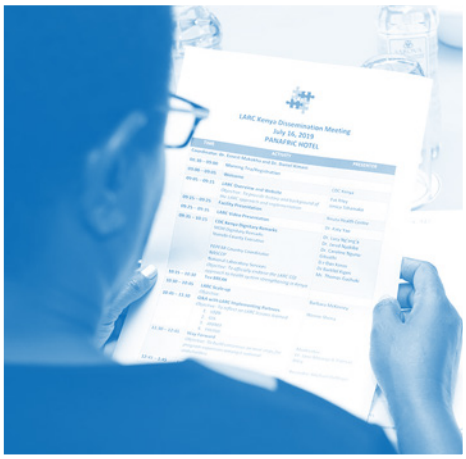
Public Health Informatics Institute

July 2020


RUN CHART







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BACKGROUND

REACHING 90-90-90 TARGETS

In 2014, the World Health Organization (WHO) published technical and operational guidelines on integrating HIV viral load (VL) testing with HIV treatment regimens for persons with confirmed clinical diagnosis of HIV. That same year, the Joint United Nations Programme on HIV/AIDS (UNAIDS) released new targets for global HIV treatment scale-up, which state that by 2020:

- 90 percent of all people living with HIV will know their HIV status;
- 90 percent of all people with diagnosed HIV infection will receive sustained antiretroviral therapy;
- 90 percent of all people receiving antiretroviral therapy (ART) will have viral suppression.

These targets have since been incorporated into the 2016 WHO recommendations for universal access to antiretroviral therapy (ART) and routine viral load (VL) testing to monitor treatment efficacy; they have also been integrated within the President's Emergency Plan for AIDS Relief (PEPFAR) operational program guidance.[1] Currently, VL testing is considered an essential component in detecting and monitoring a patient's response to antiretroviral therapy (ART) and determining viral suppression or treatment failure. However, integration of VL testing within health services and patient management continues to lag due to health systems impediments. Despite continued advances in the field of VL diagnostics — including recent improvements for using dried blood spots (DBS), the presence of high throughput, automated machinery to ease workloads and the arrival of point-of-care technologies (which enable decentralized diagnosis and immediate treatment) — parallel investments must similarly be made in strengthening health and laboratory systems to reap the benefits from these advancements. These areas are essential components to scaling up VL access.

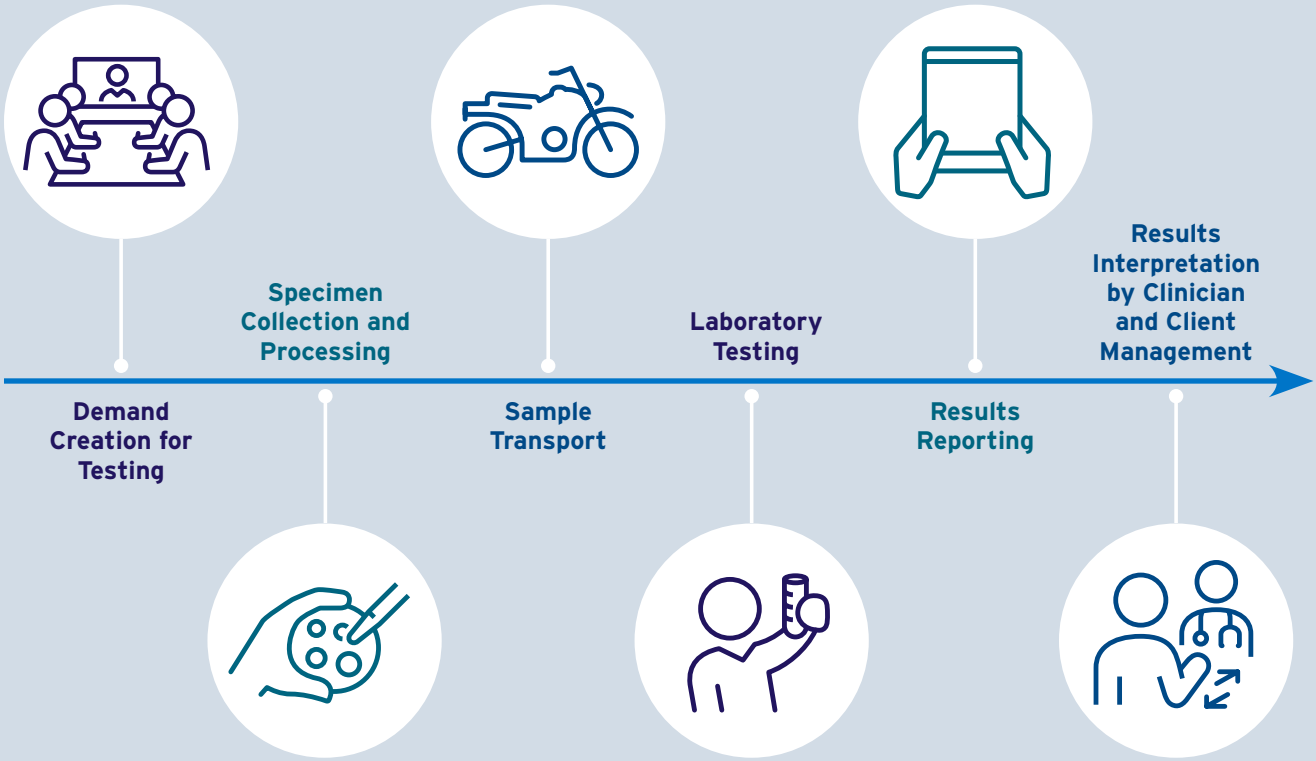
In Africa, where 11 million persons living with HIV receive ART, increasing access to VL testing is recognized as a priority area for investment. In a 2017 meeting convened by the African Society of Laboratory Medicine (ASLM) for PEPFAR country representatives, the most frequently cited challenges to VL scalability included

- lack of program coordination
- lack of optimization of laboratory and clinic services
- low demand for testing
- gaps in access to VL testing
- shortage of qualified health care workers (clinical staff and laboratory scientists)
- lack of clinical mentoring
- lack of community engagement
- inadequate sample referral and return of results
- poor use of results for decision-making
- specimen transport issues
- inadequate VL results monitoring
- prolonged time for clinical intervention
- commodities and equipment management
- inadequate data management
- lack of monitoring and evaluation tools

1 UNAIDS. (2017). 90-90-90 - An ambitious treatment target to help end the AIDS epidemic. Retrieved from **www.unaids.org/en/resources/documents/2017/90-90-90**.

Many of these challenges pertain to missed clinical and laboratory opportunities within the VL Cascade — a model that the Centers for Disease Control and Prevention (CDC) employs to identify the sequential steps involved with VL testing: demand creation, specimen collection and processing, sample transport, laboratory testing, results reporting, and incorporating VL test results into HIV patient management. A visual depiction of the VL Cascade is provided in **Figure 1**.

FIGURE 1: THE VIRAL LOAD CASCADE



From a health systems perspective, increasing the utilization of VL test results within HIV patient care involves identifying and remediating health facility bottlenecks or inefficiencies that occur within this cascade and capacitating the health workforce with continuous quality improvement skills that result in system-wide sustainable improvements. From 2016 to 2019, CDC and the Public Health Informatics Institute (PHII) developed a health systems pilot project and subsequent program that improved health systems functioning specific to VL testing and utilization pertaining to HIV patient management in PEPFAR designated African countries.

PHII AND CDC DEVELOP THE LABORATORY AFRICAN REGIONAL COLLABORATIVE PILOT (LARC 1.0)

From 2016 to 2017, CDC and PHII piloted the Laboratory African Regional Collaborative (LARC) in one healthcare facility across six VL scale-up priority countries identified by PEPFAR: Kenya, Malawi, Mozambique, Swaziland (Eswatini), Tanzania and Uganda (**Figure 2**).

FIGURE 2: LARC 1.0 COUNTRIES ARE INDICATED IN GREEN

Modeled after the successful African Health Profession Regulatory Collaborative for Nurses and Midwives (ARC), the initial LARC pilot (LARC 1.0) focused on improving communication, collaboration and health systems competence in VL management among laboratory technologists/technicians and clinicians (primarily nurses, midwives and clinical officers). Interdisciplinary teams within each country identified a health facility that was interested and receptive to participating in LARC's health systems strengthening program. The teams then ascertained their respective health facility's systems' bottlenecks or inefficiencies related to VL service integration.

The objectives of LARC 1.0 included

1. improving VL service integration within HIV service delivery by supporting local inter-cadre teams within health care facilities in Kenya, Malawi, Mozambique, Swaziland, Uganda and Tanzania;
2. introducing quality improvement tools to each country team; and
3. measuring VL systems and service delivery improvement over 18 months within the designated health facility in each of the participating countries.

During the pilot phase of LARC 1.0, the LARC faculty (comprised of CDC, PHII, and consultant staff, including Emory University) convened three learning sessions (August 2016, November 2016 and May 2017) for the six country CDC field staff and their respective teams. These sessions served as an important vehicle for introducing QI concepts to diverse teams of health professionals. By the third and final learning session, every project in each country documented significant improvements within their targeted area in the VL cascade.

The LARC pilot utilized the Capability Maturity Matrix (CMM) as an evaluation tool, a technical approach for assessing systems capability using structured, well-defined steps. The CMM is especially beneficial for evaluating health systems and health facility performance. For the LARC initiative, CDC and PHII created a CMM capable of capturing a facility's progression with regards to the six circled VL cascade steps illustrated in **Figure 1**. (See more on the CMM at **larccqi.org**.) In the LARC pilot, each facility chose one cascade element most in need of improvement. Baseline capacity was documented by each team at the beginning of the initiative and a year later. With the six pilot projects that occurred between 2016-2017, every facility documented improvement with regard to their targeted VL cascade element, and those elements identified as most in need of improvement occurred during the first step of the VL cascade (demand creation) or at the final steps (results reporting and patient management). Other components of the LARC pilot included introducing quality improvement (QI) tools adapted from the Institute for Healthcare Improvement's (IHI) model for Breakthrough Organizational Change.[2] Because these tools introduce generic QI skills and techniques, this framework can also address health systems issues in other aspects of health service provision.

While continuous quality improvement (CQI) approaches have been successfully introduced within PEPFAR's laboratory systems, to date, CQI approaches targeting the laboratory-clinical interface have not been implemented within one country. Because functional health systems are essential for timely HIV VL management, introducing CQI approaches within the lab-clinic interface is a priority area for ensuring health systems capability and enabling PEPFAR countries to reach UNAIDS HIV targets for 2020.

2 Institute for Healthcare Improvement. (2003). The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement [white paper]. Retrieved from **www.IHI.org**.

LARC 2.0 IN KENYA

Results from LARC 1.0's six country-based pilot projects demonstrated successful health systems improvement. LARC 2.0, which was introduced in Kenya in June 2018, employed a similar collaborative approach. LARC 2.0 also aimed to address the issue of intervention scalability by focusing on one country, Kenya, and training local PEPFAR implementing partners in CQI methodology and project implementation. Just as with LARC 1.0, the intent of LARC 2.0 was to advance public health practice through introducing QI approaches, but LARC 2.0 also attempted to standardize the curriculum and explore ways to support remote sites. In addition, the LARC 2.0 initiative further standardized, codified and documented the quality improvement (QI) tools in the curriculum, referred to as the ***LARC Quality Improvement Collaborative Workbook***, along with a unique delivery model comprised of webinars and Smart Start (two-day intensive onsite process mapping sessions), which required ongoing project deliverables from each participating facility throughout the 10-month program period. Like LARC's pilot, overarching goals of LARC 2.0 included supporting PEPFAR's program priority in achieving and maintaining HIV VL suppression (the third 90) by

- improving the functioning elements within the VL cascade pertaining to VL testing and integration within HIV client management; and
- improving institutional health systems capacity and inter-cadre effectiveness through team building, evidenced-based problem-solving, and progress measurement.

Additionally, LARC 2.0 strove to ascertain best approaches for taking LARC's scalability within one country.

Since 2014, Kenya has steadily strengthened its HIV VL testing capacity to meet emerging ART guidelines and is on track to reach the UNAIDS 90-90-90 goals.[3] This impressive success has been achieved through a robust laboratory referral system and a strong functional health information system to track growth and monitor problem areas for improvement. VL testing in Kenya is now a routine test and is conducted in 12 national laboratories managed by the Ministry of Health. Through this network, Kenya has witnessed commendable increase in the overall coverage (with 1.1 million tests conducted in 2018) and over 96 percent of patients covered with a turnaround time (TAT) of about two weeks. Viral suppression is about 90 percent nationally.[4] (NASCOP VL Score Board-accessed 10/7/2019).

Improved viral suppression, however, is not unique to Kenya. A recent report on VL monitoring in seven sub-Saharan African countries (Côte d'Ivoire, Kenya, Malawi, Namibia, South Africa, Tanzania and Uganda) that embarked on scale-up VL testing since 2014 demonstrates improved viral suppression rates in countries such as South Africa, Kenya, Namibia and Malawi.[5] Previous observations have highlighted TAT of sample collection to receipt of results at clinical facilities for patient management, and corresponding TAT of received results being placed in patient records, as areas that still require attention during VL testing scale-up. For example, the need to reduce TAT is documented as one of the seven strategic areas of focus in the Kenya Viral Load Scale-up Plan of 2015-2019. A shortened TAT leads to timely management of the patient. In our unpublished observations at a high-volume facility in western Kenya, delayed filing of patient VL result led to delayed clinical action and a gap in achieving viral suppression.

3 Mwau, M.,Syeunda, C., Adhiambo, M., Bwana, P., Kithinji, L., Mwende, J., Oyiengo, L., Sirengo, M., and Boeke, C. (2018). Scale-up of Kenya's national HIV viral load program: Findings and lessons learned. PLoS ONE 13(1): e0190659 **https://doi.org/10.1371/journal.pone.0190659**

4 NASCOP VL Score Board-accessed 10/7/2019

5 Lecher, S., Ellenberger, D., Kim, A., et al. (2015). Scale up of HIV viral load monitoring: seven sub-saharan African countries. MMWR November 27, 2015/64(46):1287-1290.

PROJECT METHODS

LARC QUALITY IMPROVEMENT COLLABORATIVE WORKBOOK

In collaboration with Kenya's PEPFAR Implementing Partners (IP) responsible for VL health facility performance, under the LARC 2.0 initiative, CDC and PHII staff mentored local leadership in CQI competencies. The focus with LARC 2.0 was to enable IP proficiency in using CQI methdology and skills that could then be integrated with the technical support they provide to their respective health care facilities. The LARC 2.0 training curriculum created by the LARC faculty encompassed several health system improvement philosophies and remained a companion reference throughout the LARC 2.0 intervention. Both the LARC 1.0 pilot and LARC 2.0 Kenya protocol received approval by CDC's Scientific Internal Review Board. Additionally, each participating facility and national ministry of health in LARC 1.0 and 2.0 provided concurrences for CDC and PHII to implement health systems intervention and staff training.

STAKEHOLDERS ENGAGEMENT

In LARC 1.0, stakeholders were involved at the country level (both national, sub-national and facility levels) and input was sought from local laboratorians, clinicians (including nurses) and other health workers regarding problems pertaining to facility-based VL bottlenecks. LARC 2.0 employed a similar approach of stakeholder engagement. In May 2018, CDC (Atlanta- and Kenya-based staff) and PHII convened a stakeholder meeting in Nairobi, Kenya for Kenya's IPs and relevant Ministry of Health (MOH) staff. The purposes for this meeting included

a) introducing LARC faculty and meeting participating IP staff from the University of Maryland, Baltimore (UMB), Amref Health Africa (AMREF), Family Health International 360 (FHI-360) and Global Implementation Solutions (GIS);
b) presenting an overview of the LARC 2.0 initiative;
c) sharing critical planning and preparation guidance for LARC 2.0's successful implementation;
d) eliciting feedback regarding the LARC 2.0 approach; and
e) securing IP and MOH support and buy-in.

TWO MODELS OF ENGAGEMENT

The IPs and MOH attendees expressed interest and commitment regarding enrolling their facilities in this intervention. They also modified the LARC 2.0 implementation plan. The resulting design for operationalizing LARC 2.0 included two types of engagement: Direct Assisted Sites (DAS), which included five facilities supported by UMB; and Remote Assisted Sites (RAS), which initially included eight facilities supported by AMREF, FHI and GIS. While budgetary considerations influenced the decision to adopt two different approaches, Kenyan stakeholders also expressed an interest in developing a model that enabled LARC scalability and spread to more remote locations, which led to the RAS design. At the onset of the intervention, a combined total of 13 sites comprised the LARC 2.0 intervention. The location of the participating facilities is illustrated in **Figure 3**.

FIGURE 3: LOCATION OF LARC FACILITIES BY IMPLEMENTING PARTNER AND KENYA COUNTY

GIS

(Remote assistance sites)

- Kakamega County Referral Hospital – **Kakamega County**
- Vihiga County Referral Hospital – **Vihiga County**
- Ahero County Hospital – **Kisumu County**
- St. Joseph Mission Hospital – **Migori County**

UMB

(Direct assistance sites)

- Riruta Healthcare – **Nairobi County**
- Baraka Healthcare – **Nairobi County**
- Embakasi Healthcare – **Nairobi County**
- Thika Level 5 Hospital – **Kiambu County**
- Maragua Sub-County Hospital – **Muranga County**

FHI-360

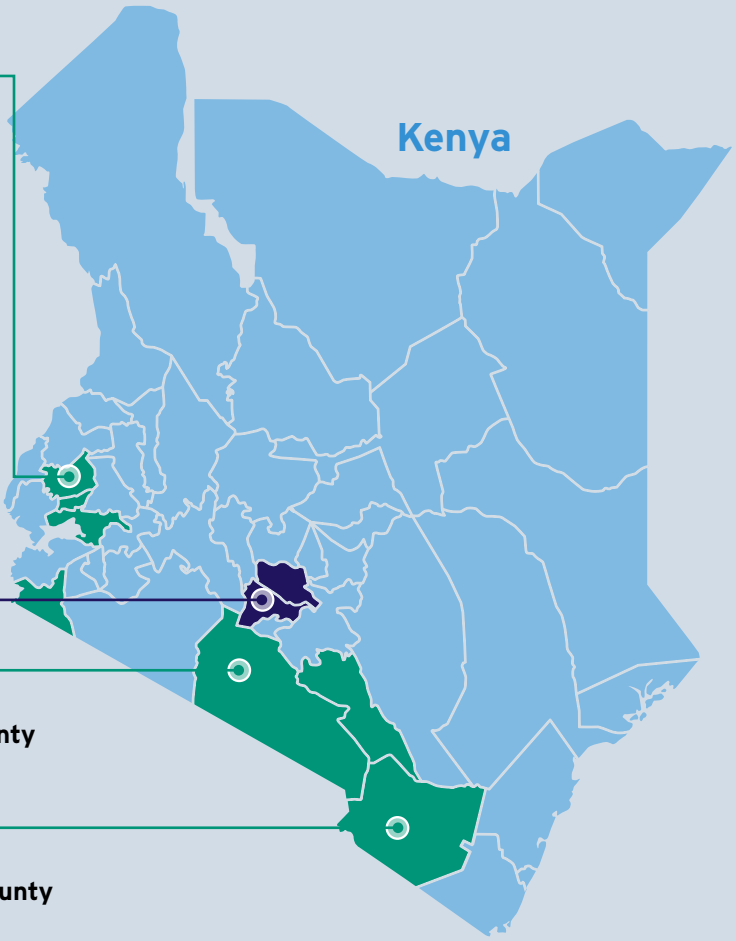
(Remote assistance sites)

- Ongata Rongai Sub-County Hospital – **Kajiado County**

AMREF

(Remote assistance sites)

- Moi Voi County Referral Hospital – **Taita Taveta County**



LARC's implementing team included

- faculty members (from the US, Kenya and Malawi), who provided quality improvement expertise, tools and guidance on program implementation;
- an in-country Kenyan LARC mentor who provided regular site visits and mentorship after each structured learning session;
- in-country IPs (for UMB, Amref, FHI, GIS) who provided technical and financial support for the facilities (they are expected to build their own quality improvement capacity so they can expand LARC to other sites in the future); and
- CDC-Kenya staff who provided guidance on site selection, assistance in securing key stakeholder engagement and any other support as needed.

IMPLEMENTATION DESIGN

During the initial stakeholder meeting, LARC faculty (CDC and PHII staff) explained that IPs and health care personnel from all participating facilities (both DAS and RAS) had to enroll in IHI's online Open School and complete seven mandatory modules pertaining to the quality improvement and health systems improvement. The LARC initiative provided scholarships to each LARC participant for access to the IHI Open School for a year. Successful completion of each module provided one hour of continuing education credit.

Additional facility requirements included i) participation in Smart Start — and onsite two-day process mapping exercise whereby a facility bottleneck is identified and an intervention is locally designed; ii) willingness and

commitment to engage in the project's activities; iii) participation in LARC's three learning sessions; and iv) facility commitment to conduct a health systems improvement project designed by the respective health facility team. Local facility teams agreed to identify their facility's VL health systems bottleneck and chart their progress throughout the project period.

LARC's learning collaborative implemented IHI's format of formalized learning sessions followed by action periods. Multi-disciplinary quality improvement teams from different health facilities were brought together in each learning session, allowing them to share experiences and learn from each other. LARC's participating team members included cadres within health facilities involved in HIV VL testing, diagnosis and patient management. More specifically, they represented clinicians (physician, clinical officers, advanced practice nurses), nurses ("sister" or nurse in charge), laboratorians (manager or selected staff), data managers, adherence counselors and peer educator/ expert clients from the same facility.

LARC's Kenyan faculty and IPs conducted scheduled phone and/or in-person mentoring visits to the DAS. The RAS received assistance from the LARC local faculty member upon request. At the end of the intervention period, project findings were shared with stakeholders through a dissemination meeting convened on July 16, 2019. The dissemination meeting attendees included national and county-level MOH representatives, facility teams, their respective IPs, CDC-Kenya staff and LARC 2.0 faculty.

PROJECT EVALUATION

Project evaluation consisted of two essential components:

1. **Assessing improvement in each of the 13 facility interventions**
    a) Did the participating teams document improvement in the VL element they strove to address?
    b) How was their facility performance measured and documented?

The first evaluation question relates to the LARC project metrics. Throughout the project, teams' selected project metrics demonstrated progress in facility performance over time using run charts. The run charts served as visual prompts, alerting team members if the selected intervention had adequately addressed the facilities' respective bottleneck.

2. **Assessing health system capability within the VL cascade by way of the VL CMM**
    a) This determination compared facility capability at the beginning of the LARC intervention to that at the end of the intervention

This evaluation question requires using the CMM to assess an organization's capability and document system improvements from baseline to project conclusion.

Also assessed were any significant differences in performance between the DAS and the RAS, which could assist the Kenyan stakeholders with subsequent plans to expand additional LARC sites.



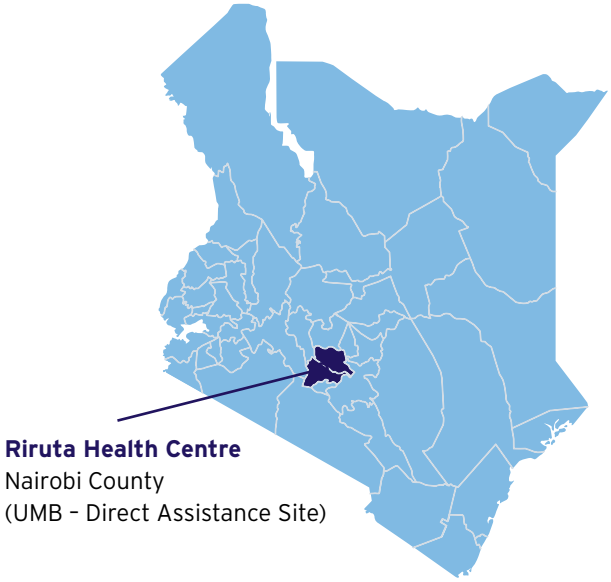


PROJECT RESULTS

Results across all sites were largely positive, with most sites achieving or exceeding results. Although delays prevented some sites from meeting their objectives within the given time frame, all sites saw at least some marginal improvement toward their objectives.

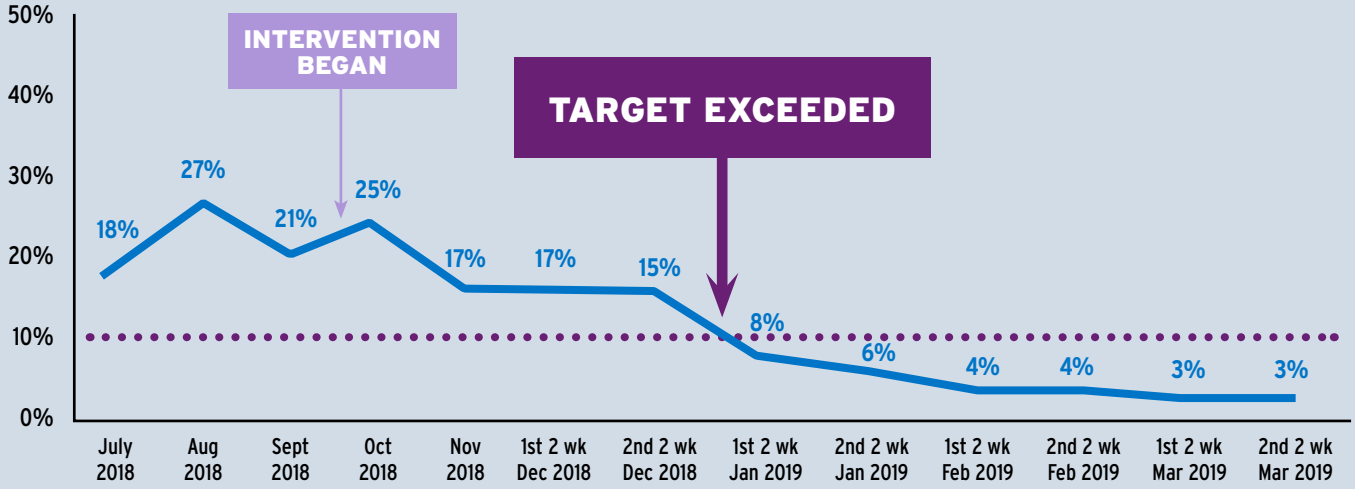
RIRUTA HEALTH CENTRE

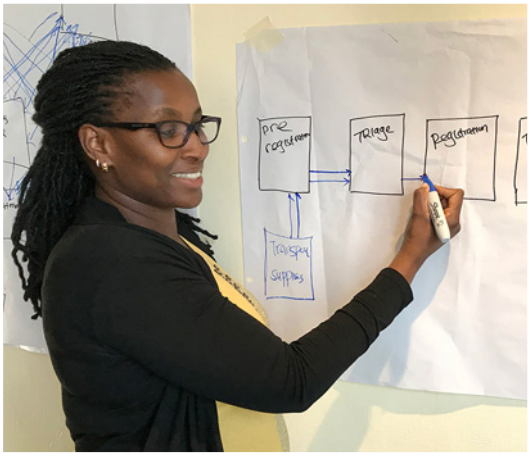
Riruta Health Centre is located in Dagoretti N sub-county and provides preventive, curative, promotive and referral services. Riruta has a high number of missed appointments for clients due for viral load testing. After administering questionnaires, they learned that long wait times contributed to these missed appointments. Their goal was to reduce the percentage of missed appointments from 22 percent to ten percent by March 2019. The target was exceeded by redesigning the client flow for viral load appointments and creating alert systems (e.g., placing stickers on patient files, creating an electronic medical record (EMR) signal and distributing patient appointment cards, printing a list of patients due for viral load the day before appointment, etc.).



Riruta Health Centre
Nairobi County
(UMB – Direct Assistance Site)

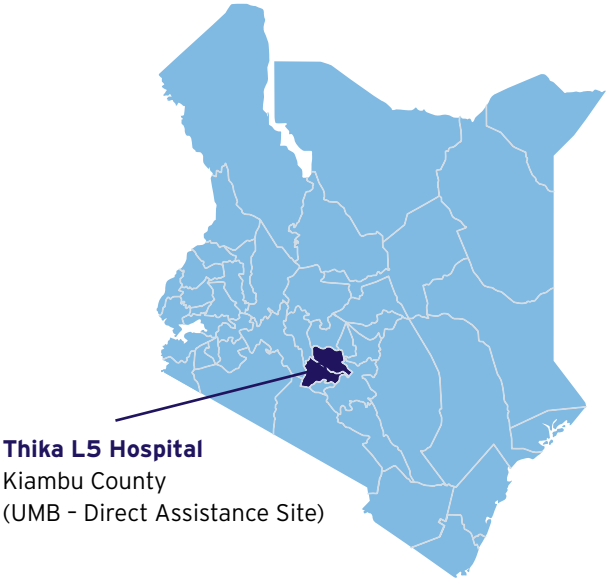
AIM: TO REDUCE THE PERCENTAGE OF MISSED APPOINTMENTS DUE FOR VIRAL LOAD TEST FROM 22% TO 10% BY MARCH 2019





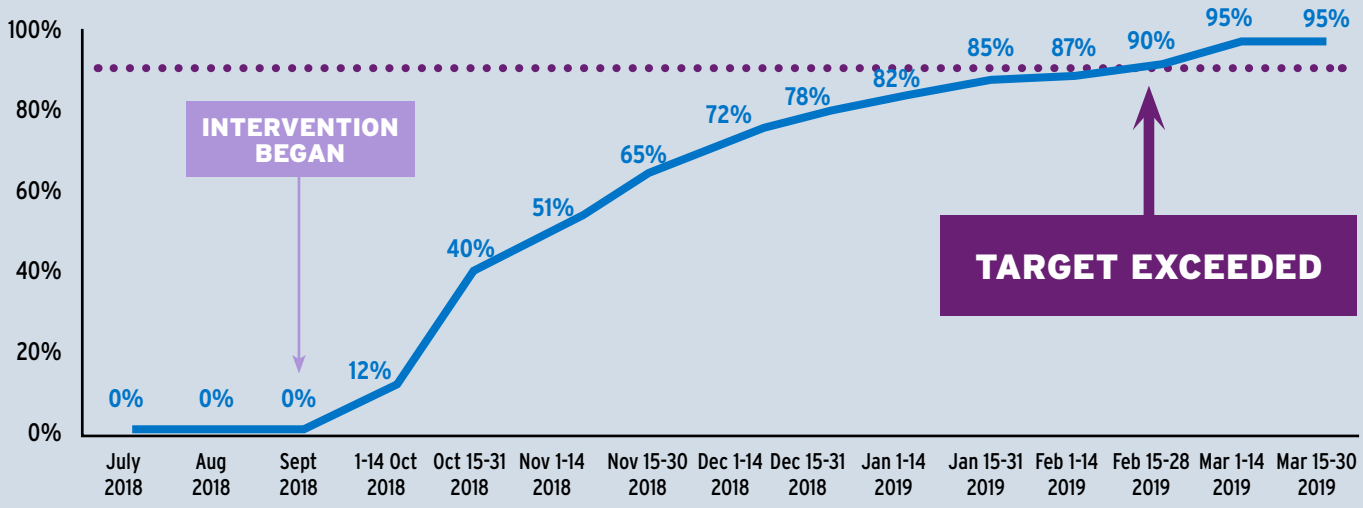
THIKA LEVEL 5 HOSPITAL

Thika L5 Hospital is a high volume facility located in one of five high HIV burden counties. Missing viral load results at the time of the clinic visit was identified by the Thika team as their major concern. Further investigation revealed that the patients and clinicians did not trust the results without the evidence of a hard copy result from the laboratory. Among the facility's key concerns were to increase patients' and clinicians' trust in results and improve management of HIV patients. By redesigning the process flow to require the lab to print results and by assigning a data manager to place these hard copy results in patient files, Thika was able to exceed their target goal to increase the percentage of hard copy viral load results in patient files from zero percent to 90 percent by March 2019.



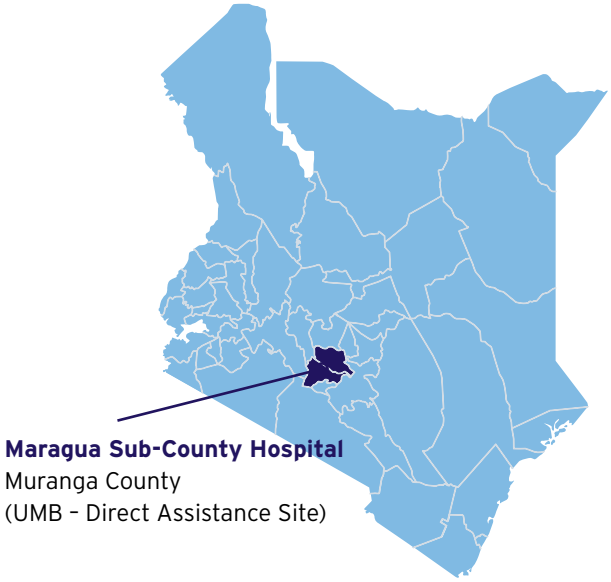
Thika L5 Hospital
Kiambu County
(UMB – Direct Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF HARDCOPY VIRAL LOAD RESULTS IN PATIENT FILE FROM 0% TO 90% BY MARCH 2019



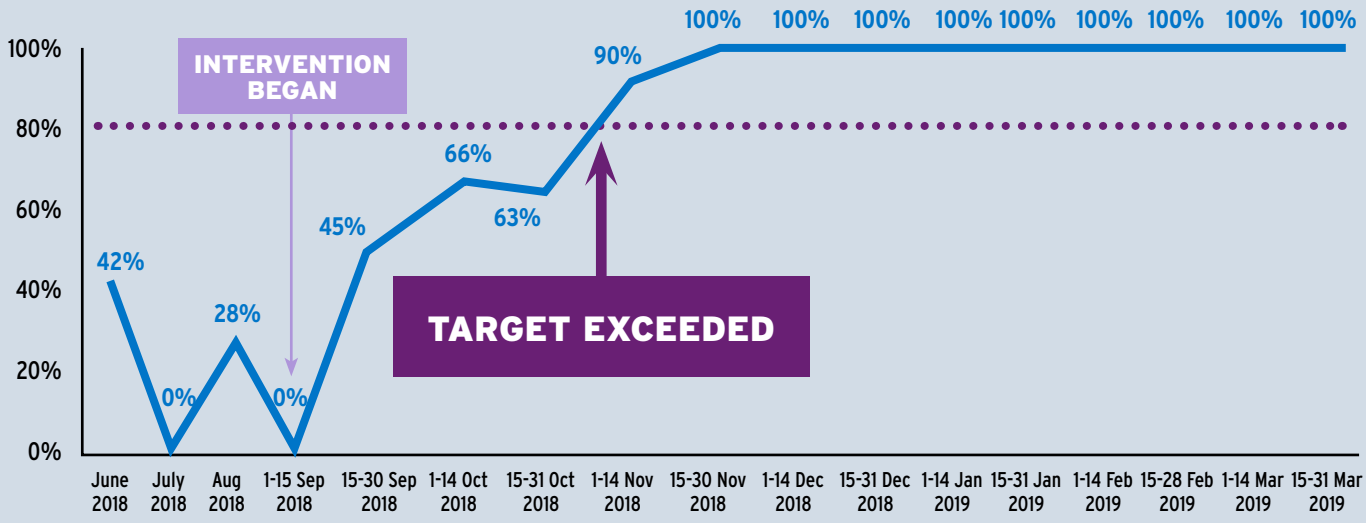
MARAGUA SUB-COUNTY HOSPITAL

Maragua Sub-County Hospital is a high volume facility with 127 beds, 13 doctors, 15 clinical officers, 76 nurses and 13 laboratory technicians. Their primary challenge was inadequate follow-up care for patients with a high viral load (HVL), including enhanced adherence counseling (EAC) due to incomplete documentation of high viral load (HVL) results in patients' files. To combat this issue, the communications and result-handling processes were redesigned to help increase the percentage of high viral load (HVL) results documented in patient files from 23 percent to 80 percent by March 2019. The target was exceeded.



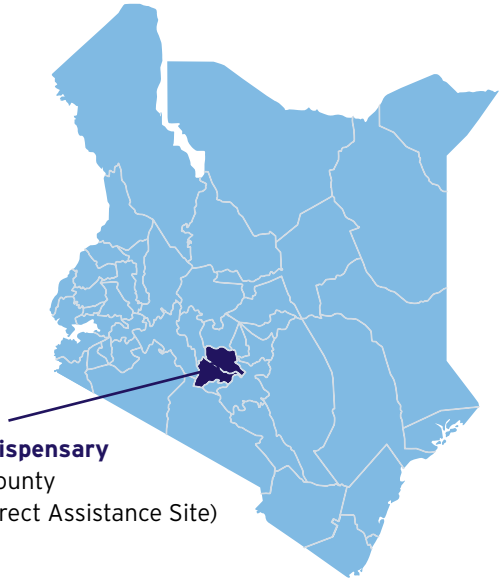
Maragua Sub-County Hospital
Muranga County
(UMB - Direct Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF HVL RESULTS DOCUMENTED IN THE GREEN CARDS IN PATIENT FILES FROM 23% TO 80% BY MARCH 2019



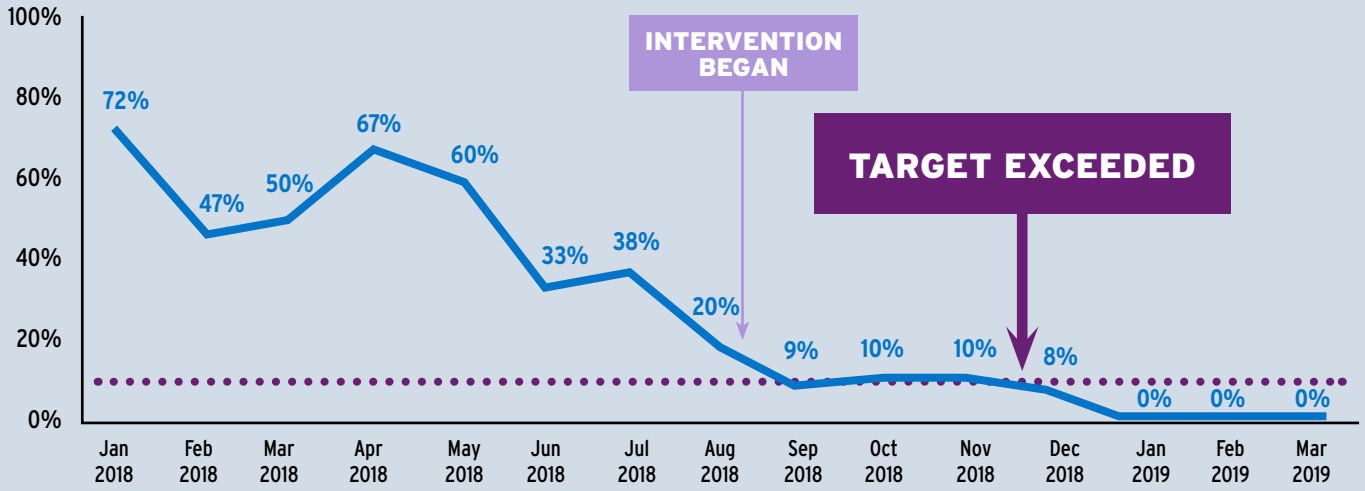
BARAKA DISPENSARY

Baraka is based in Nairobi County and serves a population near 500,000 people. This site faced a number of challenges upon receiving viral load results, including poor communication of results from the lab and an increased number of patients not attending EAC within 30 days of receiving results. Baraka's goal was to decrease the percentage of high viral load (HVL) patients who did not attend enhanced adherence counseling (EAC) from 48 percent to ten percent by March 2019. The following interventions were applied: (1) restructured patient notification process, (2) shortened time between appointments for all viral load patients to less than 30 days, (3) same-day patient phone calls upon receipt of HVL results, and (4) physical tracing for those whose phone calls don't go through after three attempts in a week. The target was exceeded.



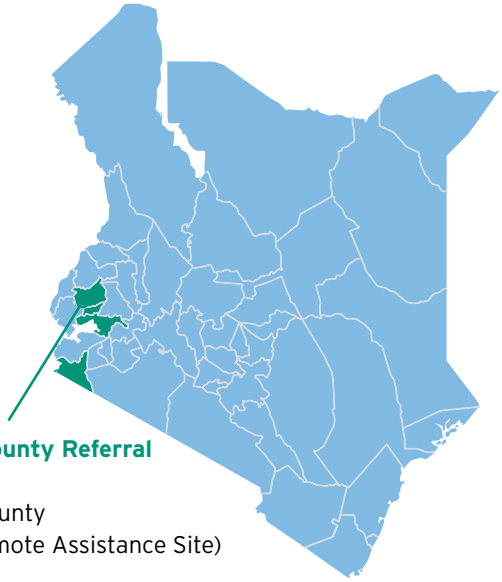
Baraka Dispensary
Nairobi County
(UMB – Direct Assistance Site)

AIM: TO DECREASE THE PERCENTAGE OF PATIENTS WITH HVL NOT ATTENDING ENHANCED ADHERENCE COUNSELING (EAC) WITHIN 30 DAYS OF RECEIVING RESULTS FROM 48% TO 10% BY MARCH 2019



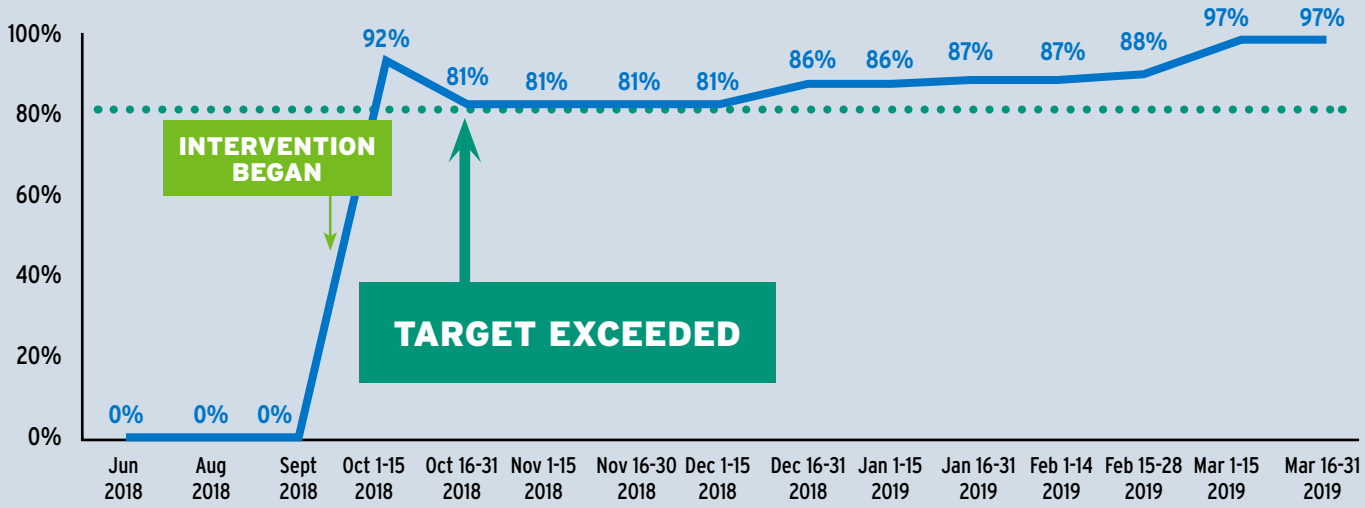
VIHIGA COUNTY REFERRAL HOSPITAL

Vihiga has a catchment population of 25,820 and an average booking of 50 patients per day. Missing hard copy viral load results in patient files led to long wait times, eventually culminating in poor patient management. Vihiga's goal was to improve the availability of hard copy viral load results in the patients' files from zero percent to 80 percent by March 2019. The target was exceeded by developing standard operating procedures for downloading and filing of viral load results, conducting training, seeking technical support from GIS and CDC, and appointing a focal person with a clear job description.



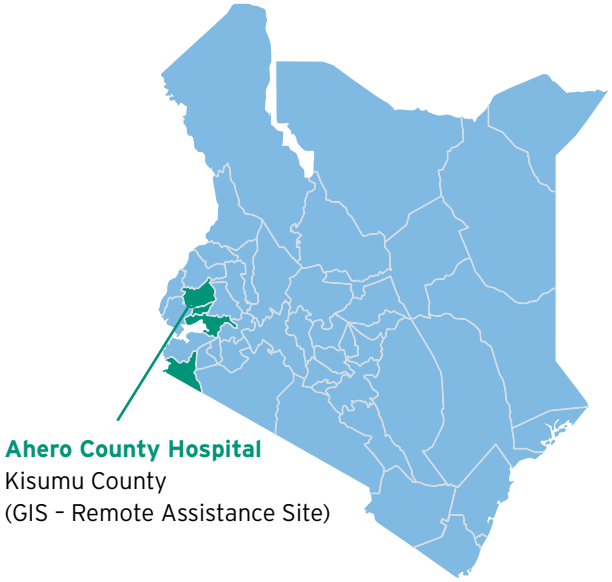
Vihiga County Referral Hospital
Vihiga County
(GIS – Remote Assistance Site)

AIM: TO IMPROVE THE AVAILABILITY OF HARD COPY VIRAL LOAD RESULTS IN CLIENT FILES FROM 0% TO 80% BY MARCH 2019



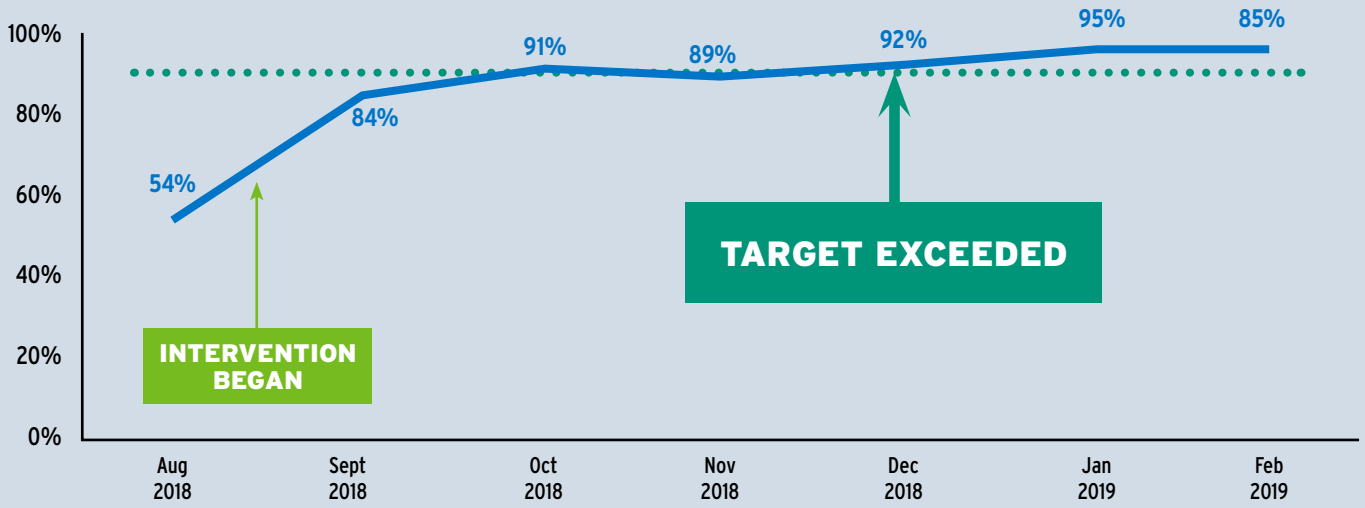
AHERO COUNTY HOSPITAL

Ahero County Hospital is situated in Nyando along the Nairobi-Kisumu highway and has an average workload of 150 patients daily. By August 2018, only 54 percent of Ahero County Hospital's client files had hard copies of viral load results, compromising effective client management. Their goal was to expand this number to 90 percent by March 2019. This target was exceeded by applying the following interventions: (1) appointing a viral load point person, (2) identifying files without hard copy results prior to the day of patient visit, (3) printing available and missing viral load results daily at 4:00 p.m. and (4) filing all unused client files daily.



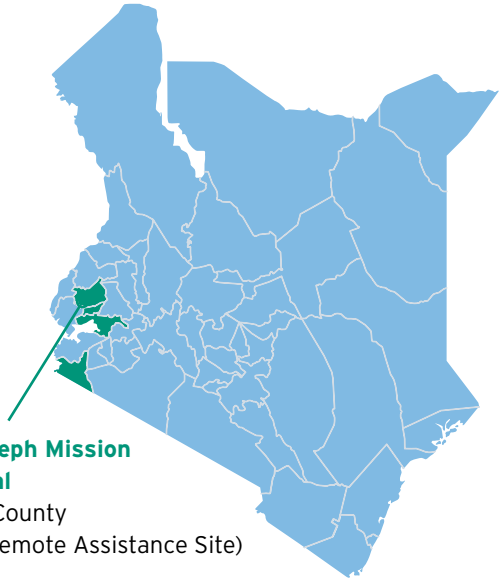
Ahero County Hospital
Kisumu County
(GIS - Remote Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF HARD COPY VIRAL LOAD RESULTS IN CLIENT FILES FROM 54% TO 90% BY MARCH 2019



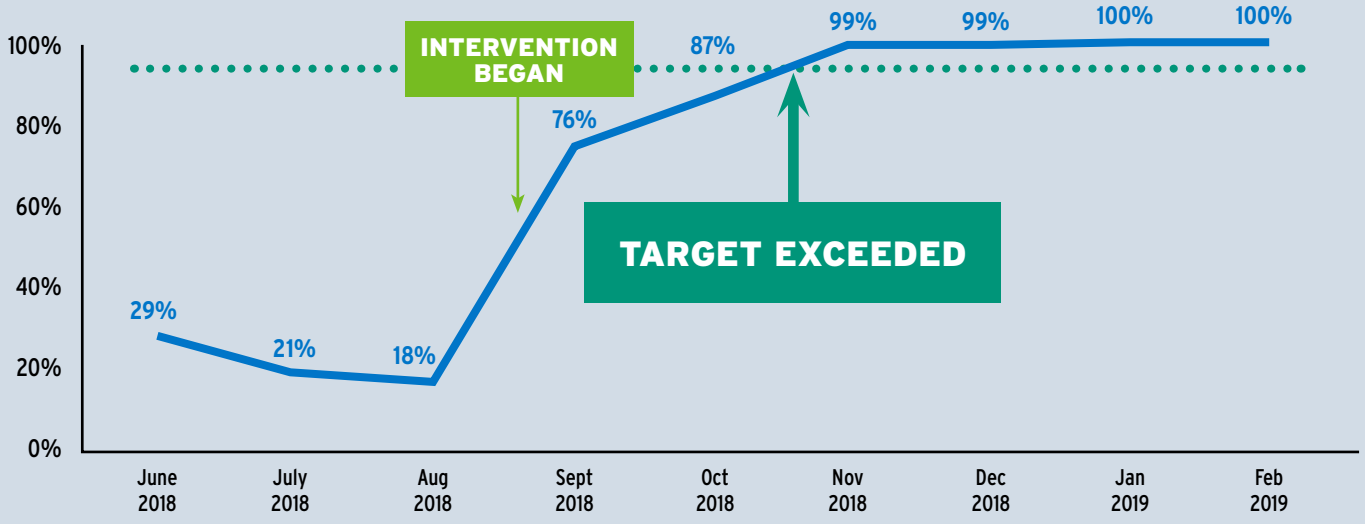
ST. JOSEPH MISSION HOSPITAL

St. Joseph Mission Hospital is situated off Kisii Isbania highway and has an average number of 100 patients per day. A baseline study done in August 2018 revealed that 77 percent of patients' files did not have hard copy viral load results, negatively impacting progressive patient viral suppression monitoring. As a result, there was a lack of follow-up of high viral load (HVL) patient cases and a lack of traceability if there were transcriptional errors from the testing lab portal to the EMR. St. Joseph's goal was to improve the availability of hard copy viral load results in the patients' files from zero percent to 80 percent by March 2019. The target was exceeded by developing standard operating procedures for downloading and filing of viral load results, conducting training, seeking technical support from GIS and CDC, and appointing a focal person with a clear job description.



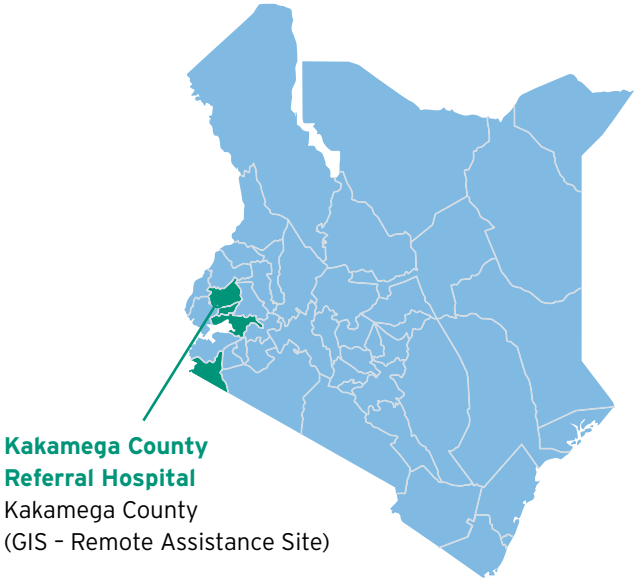
St. Joseph Mission Hospital
Migori County
(GIS – Remote Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF HARD COPY VIRAL LOAD RESULTS IN PATIENT FILES FROM 23% TO 95% BY MARCH 2019



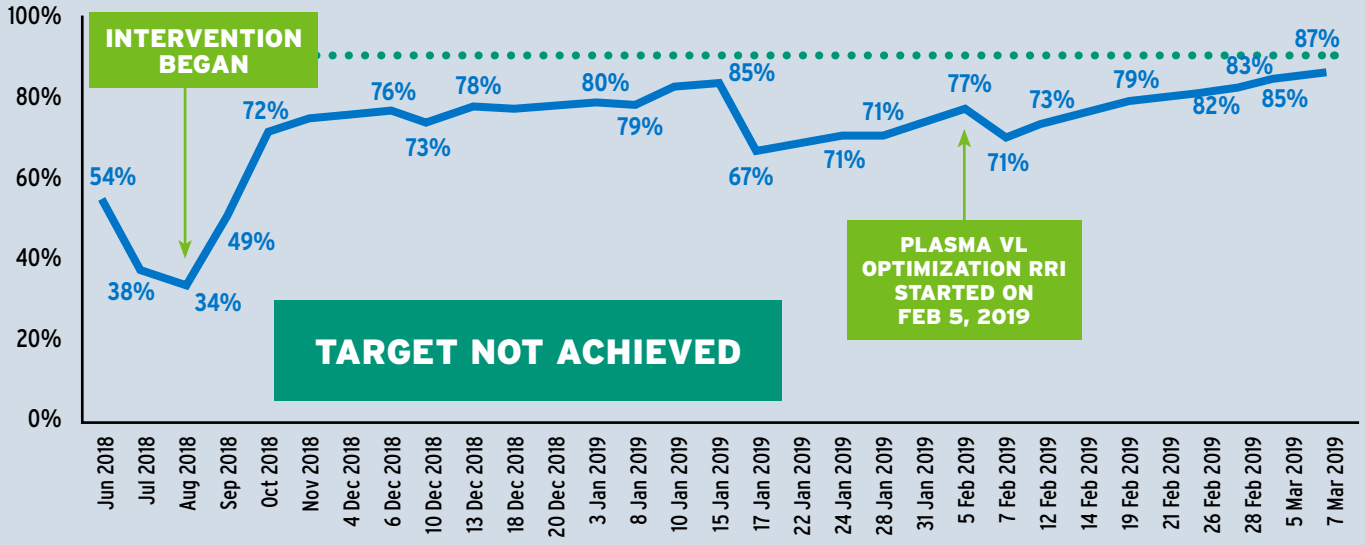
KAKAMEGA COUNTY REFERRAL HOSPITAL

Kakamega County Referral Hospital is the largest hospital in Kakamega County. Approximately 100 patients are seen daily. Kakamega County found that only 42 percent of patient files had viral load hard copy results, which negatively affected their quality of service. They sought to increase this percentage to 90 percent by March 2019 by printing viral load results daily and assigning students to file hard copy results under supervision routinely. However, the target was not reached.



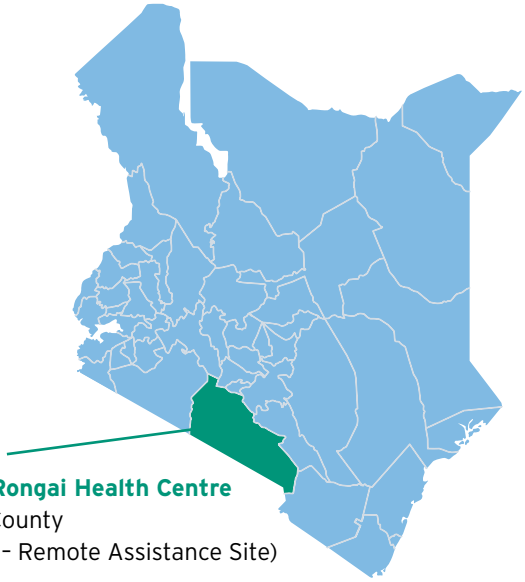
Kakamega County Referral Hospital
Kakamega County
(GIS – Remote Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF HARD COPY VIRAL LOAD RESULTS IN PATIENT FILES FROM 42% TO 90% BY MARCH 2019



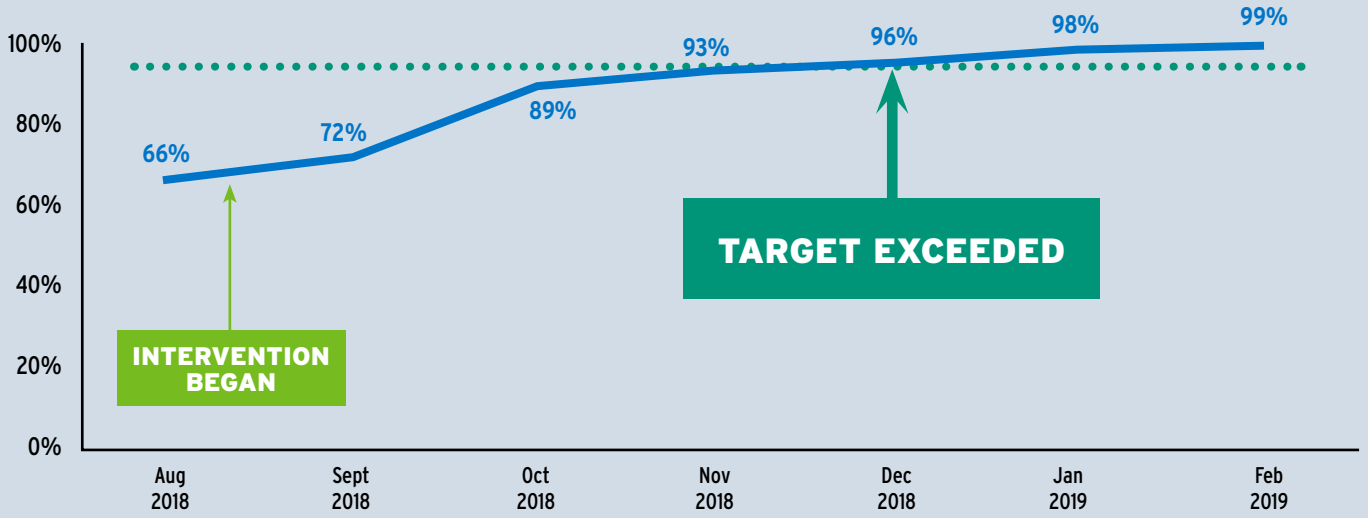
ONGATA RONGAI HEALTH CENTRE

Ongata Rongai Health Centre opened in 1992 with a catchment population of 130,000. Due to incomplete documentation of high viral load (HVL) results, Ongata has experienced delayed clinical decisions. Their goal was to increase documentation of HVL results in the EMR from 66 percent to 95 percent by February 2019. The target was exceeded by applying the following interventions: (1) redesigning the process of receiving results from the lab to records office, (2) ensuring availability of a functional computer in the data room, (3) designating staff to enter HVL results into the EMR before filing into patient files, (4) reassigning roles and responsibilities, and (5) identifying a viral load/EID champion.



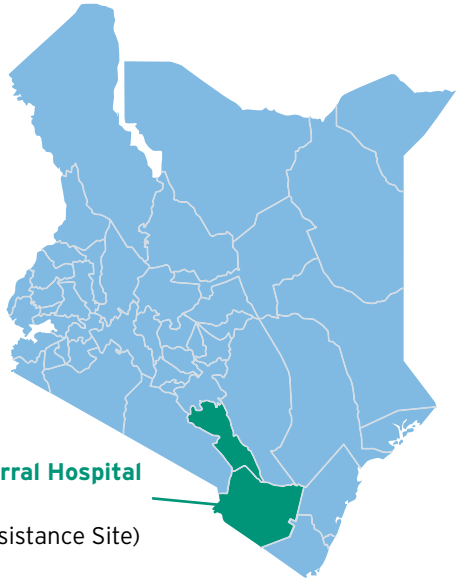
Ongata Rongai Health Centre
Kajiado County
(FHI-360 - Remote Assistance Site)

AIM: TO INCREASE DOCUMENTATION OF HVL RESULTS IN ELECTRONIC MEDICAL RECORDS (EMR) FROM 66% TO 95% BY FEBRUARY 2019



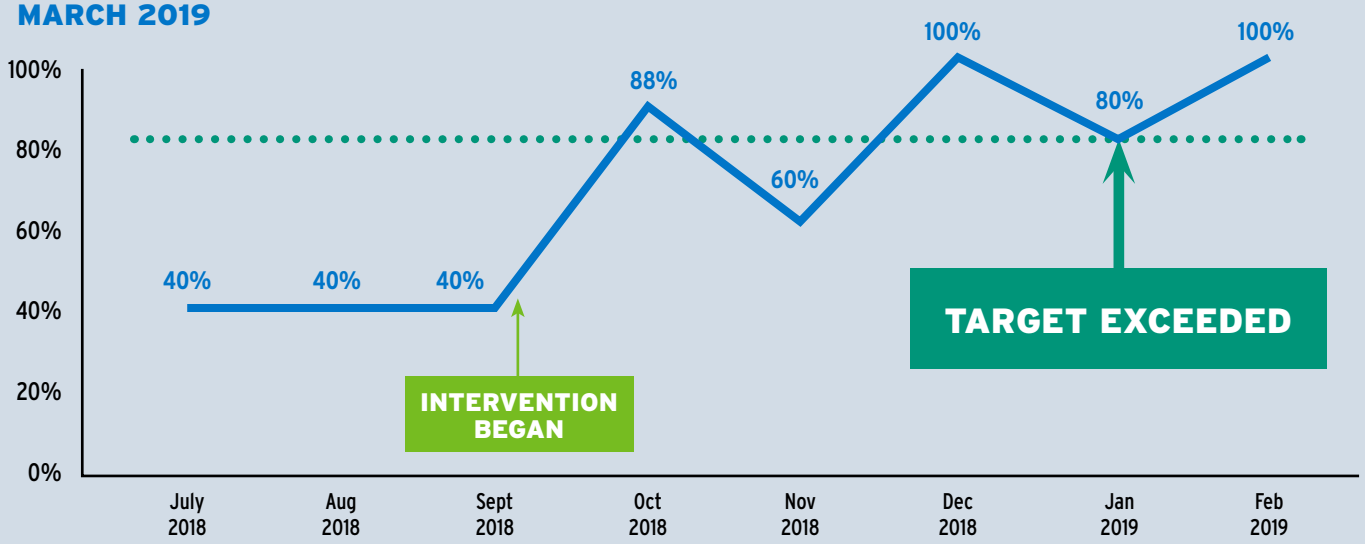
MOI VOI COUNTY REFERRAL HOSPITAL

Moi Voi County has a bed capacity of 136 and offers preventive, curative, promotive and referral services. The hospital completes approximately 90 viral load tests every month. Moi Voi County faced a low percentage of HIV patients with high viral loads returning to the clinic for an enhanced adherence counseling session within 30 days. Their goal was to increase this percentage from 40 percent to 80 percent by March 2019. The target was exceeded by improving the communications process, refreshing EAC protocol for clinicians, developing an EAC tracking tool and orienting clinicians on how to use it, and monitoring progress on a monthly basis.



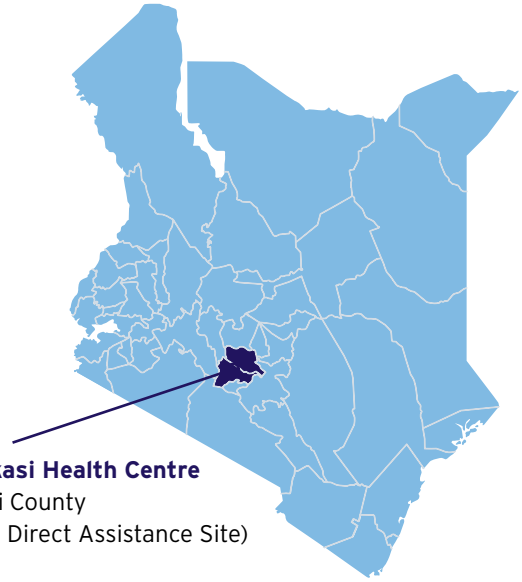
Moi Voi County Referral Hospital
Taita Taveta County
(AMREF – Remote Assistance Site)

AIM: TO INCREASE THE PERCENTAGE OF PATIENTS RETURNING TO THE CLINIC FOR AN EAC SESSION WITHIN 30 DAYS OF RECEIPT OF HVL RESULTS FROM 40% TO 80% BY MARCH 2019



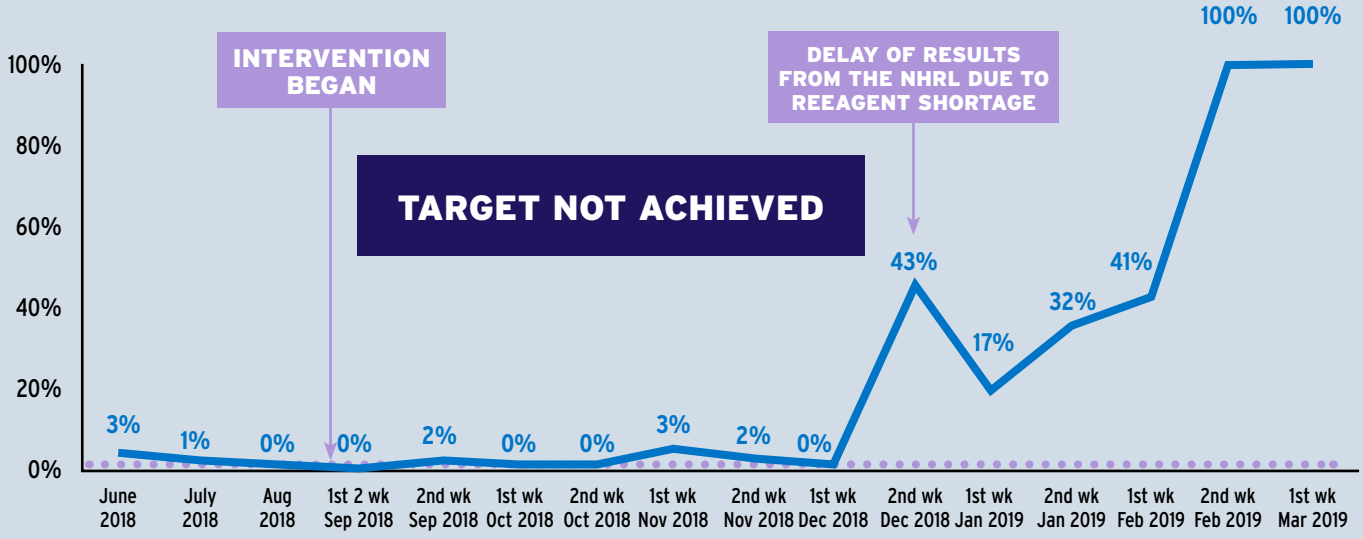
EMBAKASI HEALTH CENTRE

Embakasi Health Centre opened in 1957 with a catchment population of 44,845. Its viral load uptake is 92 percent and suppression rate is 96 percent. A poorly defined tracking system of viral results from the laboratory to patients' files led to a negative impact of general client management. To manage patients in a timely manner, their goal was to reduce the percentage of missing viral load results in the tracking log from two percent to zero percent by March 2019. The following interventions were applied: (1) availed SOPs for sample management, (2) called NHRL every two weeks, and (3) called clients with missing results for bleeding. Because of delayed results from the NHRL due to reagent shortage, the target was not achieved. At the close of the project, all results were still pending due to result delays.



Embakasi Health Centre
Nairobi County
(UMB – Direct Assistance Site)

AIM: TO REDUCE THE PERCENTAGE OF MISSING VIRAL LOAD RESULTS IN THE VIRAL LOAD TRACKING LOG FROM 2% TO 0% BY MARCH 2019



CONCLUSION

CDC and PHII introduced the LARC initiative to address viral load scale-up challenges by improving communication, collaboration, and health systems competence among laboratory technologists/technicians and clinicians. Since its inception in 2016, LARC has been one of the few initiatives that brought together laboratorians and clinicians for problem solving and process improvement. Through rigorous application of a structured quality improvement methodology and relentless focus on results and data, LARC has proven successful in producing remarkable and measurable results in Kenya. After implementation, participating sites saw improvements in timely decision making and increased collaboration among departments.

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