USAID FROM THE AMERICAN PEOPLE

USAID ASSIST PROJECT
Applying Science to Strengthen and Improve Systems

CASE STUDY

Improving malaria case management at Khunyangu Sub-County Hospital, Kenya

Summary

Khunyangu Sub-County Hospital formed a work improvement team (WIT) in May 2014 to improve malaria case management. They reviewed their data to look for gaps for the first time and quickly saw they had high rates of presumptive treatment for malaria, with more than half of patients receiving artemisinin-based combination therapies (ACTs) without confirmation of malaria. The WIT developed a number of changes to test, including conducting continuing medical education sessions at the facility, displaying job aids, extending laboratory hours, informing clients of changes in procedure, and reordering patient flow. Through these efforts, 58.8% of their yearly supply of ACTs has been saved as a result of rational use, which provide approximately 10 months of additional ACTs to the facility. As a result, there have been no stock-outs of anti-malarials, despite erratic supplies.

Background

Khunyangu Sub-County Hospital in Busia County, Western Kenya provides preventive and curative services through outpatient and inpatient departments. The USAID Applying Science to Strengthen and Improve Systems project (ASSIST), with funding from the President's Malaria Initiative (PMI), began supporting quality improvement to improve malaria case management in Busia County in May 2014. Khunyangu Sub-County Hospital is a high malaria case load facility and was selected, along with four other facilities, for initial implementation of malaria quality improvement within the county. ASSIST is currently implementing malaria quality improvement activities in 25 facilities across three counties in Kenya.

The hospital formed a WIT in May 2014 following trainings from ASSIST on quality improvement and malaria case management. The WIT included the clinician in charge of the out-patient department, the facility Pharmacist, Laboratory Technologist, a nurse, and the head of the records department. They reviewed their data to look for gaps for the first time and quickly saw they had high rates of presumptive treatment for malaria with more than half of patients receiving ACTs without confirmation of malaria. Of 6,683 cases diagnosed clinically, only 4,306 were confirmed through laboratory testing. They also knew they experienced stock-outs of ACTs as a result of irrational use. The WIT conducted a fishbone analysis to determine root causes of these challenges and developed changes to test in order to reduce discrepancies between confirmed malaria cases and prescribing of ACTs.

Implementation

The County and Sub-County formed a malaria technical working group (TWG) at each level comprised of the County Malaria Coordinator, County Medical Lab Technologist, County Pharmacist, County Clinical Officer and sub-county health managers to spearhead the implementation of the national policy on malaria. The members of the WIT at Khunyangu Sub-County Hospital not only oversee their departments

JUNE 2016

This case study was authored by Prisca Muange, Bill Okaka and Kate Fatta of University Research Co., LLC (URC) and produced for review by the United States Agency for International Development (USAID) by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T.H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org or write assist-info@urc-chs.com.

at the hospital, but also supervise other sub-county facilities. The WIT knew they faced a knowledge gap among clinicians who presumptively prescribed ACTs. The hospital already held regular continuing medical education (CME) sessions, so the WIT decided their first change would be to add CMEs on the national guidelines for malaria case management. This change was designed to ensure that providers follow the national guidelines and test all patients presenting with fever for malaria and not treat presumptively. In the past, staff would typically wait until they were called by the ministry to attend trainings. Through CMEs held at the hospital, different WIT members began covering the various aspects of malaria case management in weekly sessions, emphasizing the necessity of sending patients for confirmatory testing at the laboratory. WIT members also began conducting on-the-job training to refresh skills and support staff and provided job aids in clinical rooms.

They began to see improvements with increases in patients receiving tests, but discrepancies remained. In August 2014, there were 472 clinical case and 393 cases were confirmed, but they saw in the registers that 985 ACTs had been dispensed. The WIT realized that the problem was that some personnel were buying ACTs to take home to people who were sick at home or in the community and that not all patients were being recorded in the registers. They added all of the pharmacy staff to the WIT and changed hospital operations to only allow technical staff to dispense treatment adhering to a strict drug dispensing policy.

Another challenge the WIT encountered was that the laboratory closed at 4pm, while patients would still be coming. The Laboratory In-Charge agreed to extend the hours to 6pm. Also at the laboratory, they had frequent shortages of reagents. They discussed this with the Superintendent and began reordering supplies in advance of using them up instead of waiting until they were gone.

In Kenya, ACTs are provided at health facilities free of charge but patients do have to pay for laboratory testing. Because of this, the WIT found that if they told patients to go to the cashier before the laboratory, patients were more likely to leave without getting the test done. Thus, the WIT changed the patient flow to go to the cashier at the end of their visit. For patients who cannot pay for the testing, there is a Social Worker at the hospital to help them sign up for fee waivers.

After improving dispensing of ACTs, the WIT faced a new challenge. Patients were used to receiving ACTs when presenting with fevers and did not understand the changes. The WIT began discussing the importance of rational use of ACTs during morning health education talks and hung posters in English and Kiswahili informing clients of the change.

Results

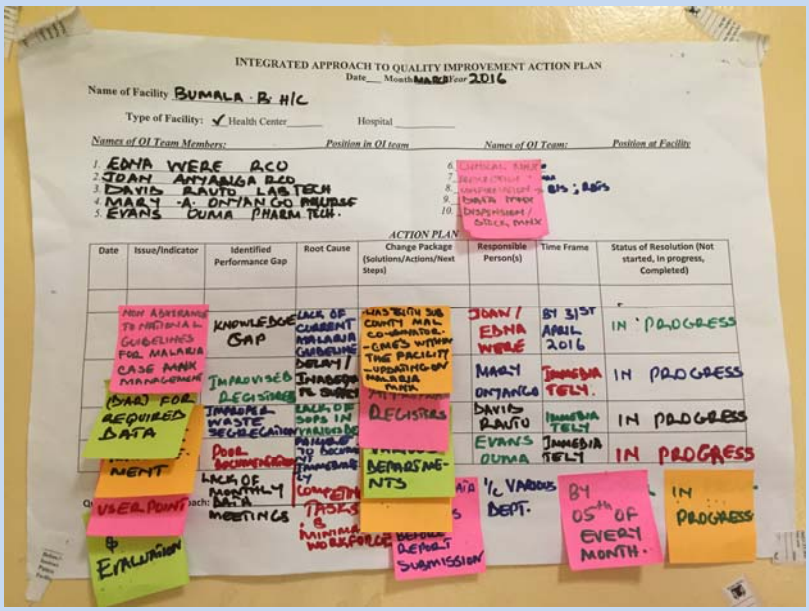
Since the WIT began testing changes, trends of ACTs dispensed versus confirmed cases have greatly improved (see **Figure 1**). Roughly 98% of patients receive confirmatory tests now. The WIT attributes this 2% gap to patients who come after laboratory hours and are admitted as in-patients due to high fever. The national guidelines state that in case such as these, providers should treat presumptively. The total number of ACTs dispensed 6 months before the intervention were 12,608 and 5,190 after the intervention. This translates to approximately 58.8% of ACTs saved as a result of rational use which could provide approximately 10 months of additional ACTs to the facility. As a result, there have been no stock-outs of anti-malarials despite erratic supplies.

Facilitating Factors

The Khunyangu WIT attributes their success to teamwork and support from the hospital administration. Prior to forming the WIT, each department of the hospital ran independently of each other. “It’s hard to approach a colleague from another department and correct them,” said the WIT Chair. Having each department represented on the WIT, however, allowed them to synchronize efforts across the hospital system. The support from the hospital administration has been invaluable to the WIT and helped them source funds for reagent supplies, hire more support staff for the Records Department, and purchase fuel for a generator.

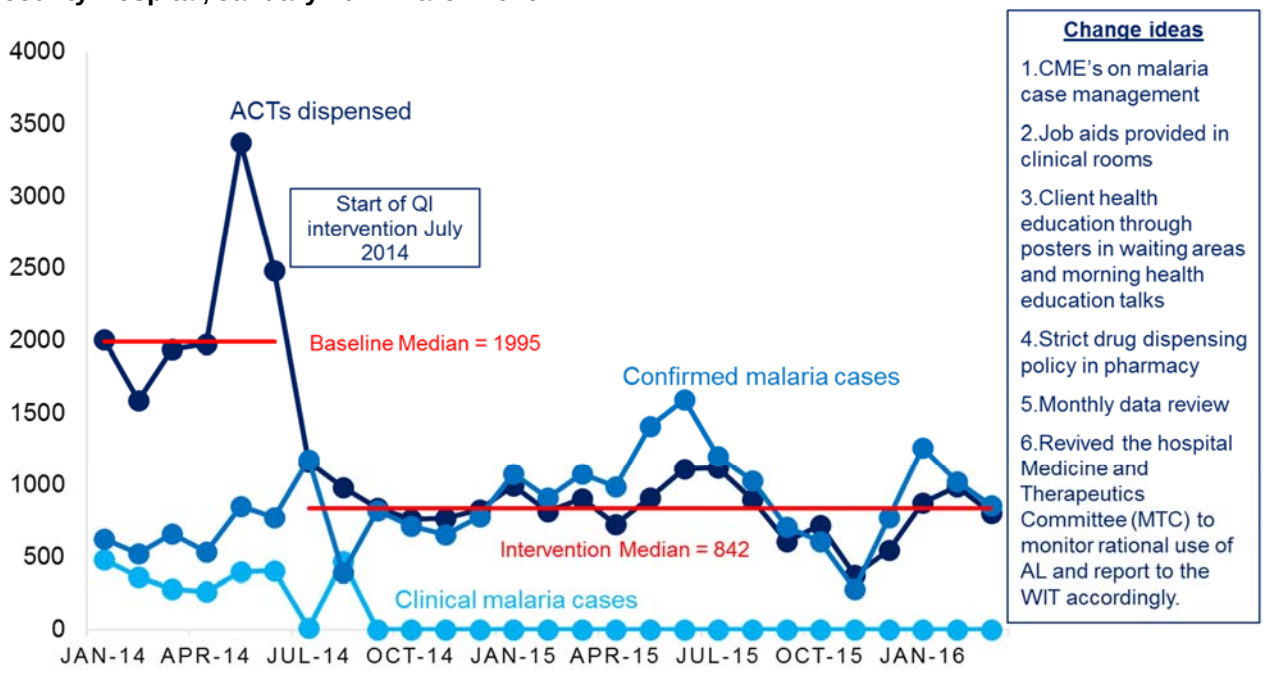
Box 1. Center of Excellence: Bumala B Health Center

In March 2016, ASSIST and the members of the WIT at Khunyangu Sub-County Hospital began working with the staff at Bumala B Health Center to establish themselves as a Center of Excellence (COE), focusing on improving malaria case management. Bumala B was chosen to serve as a COE because it is a high-volume clinic, it has all the departments to deal with malaria case management (clinical, laboratory, pharmacy, and records), and it has qualified personnel. After initial quality improvement training from ASSIST and supportive supervision from the WIT of Khunyangu Sub-County Hospital, Bumala B established a WIT with the two Clinical Officers, nurse, Laboratory Technician, and Pharmacy Technician. They looked at their clinical processes to see if patients were getting confirmatory tests, if they were receiving their results, and getting the right treatment. They also looked at their registers and pharmacy records to see if they matched. The WIT realized they needed to focus on patient management, documentation, and commodity management and developed an improvement action plan. The first change they made was to have monthly data review meetings and to review the weekly surveillance reports together. Previously, these had been completed and submitted solely by one of the Clinical Officers. Now, they review the reports together and discuss discrepancies they see. This change led to others. They discussed with clinicians the importance of not treating just based on the clinical diagnosis and asked clinicians to stop writing presumptive diagnoses on patient cards and in registers. This is to ensure that the confirmed diagnosis is the only one recorded. They have also established new registers in the laboratory in which they only track malaria tests. This is to make data review faster for the WIT. The WIT also reordered the patient flow. Prior to their improvement efforts, patients would arrive at the facility, visit the register, go to triage and have their vitals taken, go to consultation, then the laboratory, back to consultation for their results, then to the pharmacy for treatment, then a final stop to the register to record their diagnosis and treatment before departing. The WIT found that registers were often incomplete because patients would leave after visiting the pharmacy Now, patients are entered in the register at registry, where they receive a stamp to signify that their final diagnosis has been recorded before going to the pharmacy. The team still has challenges of inadequate staffing and occasional stock-outs of test kits, but they are positive about the improvement they have achieved. They are eager to continue their efforts, and working with community units to sensitize patients to the benefits of the changes to malaria case management and are planning more changes to test in the coming months.



The Bumala B Health Center's quality improvement action plan. *Photo by Kate Fatta, URC.*

Figure 1. ACTs dispensed vs clinical malaria cases vs confirmed malaria cases, Khunyangu Sub-county Hospital, January 2014-March 2016



Lessons Learned

The WIT is very clear that the marked improvement in malaria case management at the facility required a team effort from all departments and hospital leadership. Consistent data reviews are also necessary and teams need to meet frequently to discuss gaps and changes. The WIT also recognizes that staff need to be open to change, embrace the malaria case management guidelines, and stay up to date on technical issues through regular CMEs.

The improvement efforts at Khunyangu Sub-County Hospital were designed to not only improve care at their facility, but also to equip them with skills and understanding of quality improvement for malaria case management so they could establish and coach a Center of Excellence at Bumala B Health Center (see **Box 1** for the Bumala B story).

Next Steps

Among patients there remain some negative perceptions of the changes in malaria care at Khunyangu. Patients are disappointed when they do not receive ACTs, and some buy them outside the hospital, despite negative test results. To address this, the WIT is considering a number of changes, including engaging community health volunteers and community health extension workers to spread messages, to tap into community health action days, to tailor their messaging to address patients' concerns, and to add patient representatives to the WIT.

Encouraged by what they have achieved, the WIT has also spread quality improvement initiatives to other departments within the facility, including the Comprehensive HIV Care Clinic, and is exploring other areas of care they can improve together.