

# Improving health care worker performance in adherence to testing and test results for malaria in eight sub-saharan african countries

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## Introduction

Adherence to malaria diagnostic test results is crucial to ensure effective treatment of malaria and other febrile conditions, and to decrease irrational use of artemisinin-combination therapies (ACT). Reasons for non-adherence may include lack of knowledge of guidelines, lack of confidence in the diagnostic test or laboratory, stock-outs of ACTs or other drugs, and satisfying patient demand for treatment. MalariaCare, a President's Malaria Initiative-funded project, has worked with National Malaria Control Programs (NMCPs) to train a cadre of laboratory and clinical experts as on-site supervisors. The supervisors work with staff at the health facility level to perform on-site outreach training and supportive supervision (OTSS) – a mentorship program to improve technical skills and adherence.

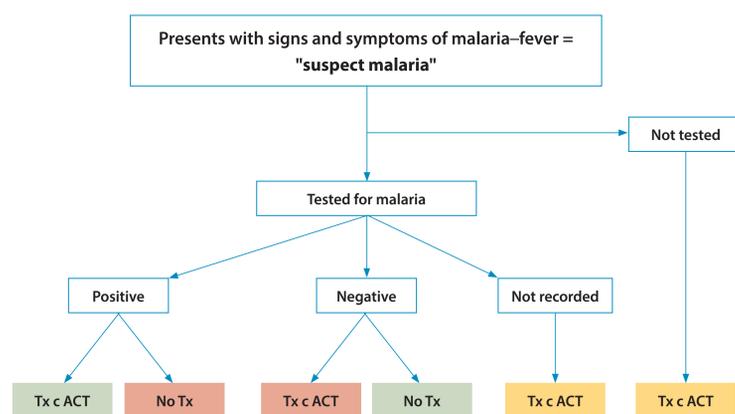
## Methods

To assess performance on adherence to test results, data was analyzed at the health facility-level from eight of MalariaCare's focus countries: the Democratic Republic of the Congo, Ghana, Kenya, Malawi, Mali, Mozambique, Tanzania and Zambia. Between 2015 and 2017, facilities analyzed received at least three MalariaCare-supported OTSS visits that comprehensively measured adherence. Data was collected using a standardized health facility checklist.

During OTSS visits, adherence is evaluated by tracking patient testing and treatment through a chart review of the clinical, pharmacy and laboratory registers. In order to capture clinical practice for all suspected malaria cases, three indicators are evaluated (target: 90% compliance):

- Testing prior to treatment (with ACTs)
- Adherence to negative test results (No ACTs)
- Adherence to positive test results (ACTs)

Figure 1. Potential interventions for suspected malaria



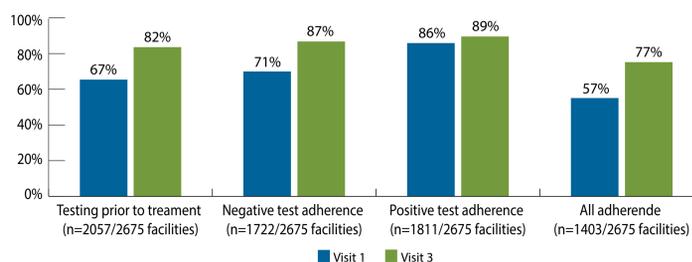
## Methods, continued

Twenty randomly-selected patient records are reviewed for testing prior to treatment, and ten randomly-selected patient records for both negative and positive test adherence are reviewed per facility. In addition, data on ACT and rapid diagnostic test (RDT) stock-outs – defined as missing commodities for 7 days or more during the last 3 months – is collected each visit. The aggregate indicator scores and related findings are discussed with the case management team during debriefing meetings, and suggestions are provided on how to improve adherence by the next visit.

## Results

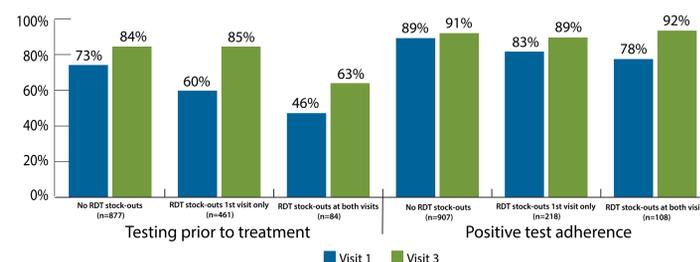
- The average proportion of facilities meeting the optimal target of 90 percent across the eight countries increased for all three indicators, with significant improvements seen in testing prior to treatment and negative test adherence (15 percentage points each) (Figure 2). The percentage of facilities meeting all three targets simultaneously improved by 20 percentage points.

Figure 2. Proportion of facilities meeting the overall indicator performance target, 1st vs. 3rd visit



- At the country level, most countries had comparable proportional improvements. However, lower levels of improvement or declines were seen in areas where there was more ingrained practices of clinical diagnosis and quinine treatment, and where stock-outs of essential commodities was common.
- Overall, RDTs being in stock was positively associated with improved testing prior to treatment ( $X^2 (N = 4,198) = 111.95, p < .001$ ), and ACTs being in stock was positively associated with positive test adherence ( $X^2 (N = 3,878) = 11.81, p < .001$ ).

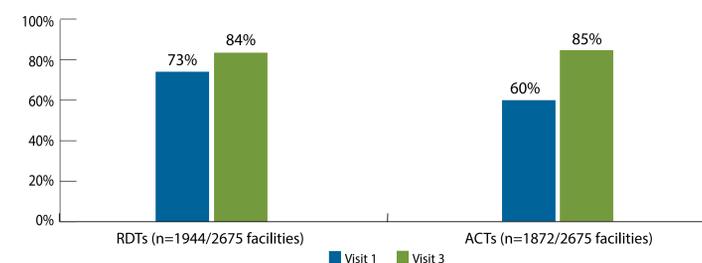
Figure 3. Proportion of facilities meeting the standard: with and without stock-out



## Results, continued

- RDT and ACT in-stock indicators also improved over the course of the three visits and likely contributed to the improvement in the three register review measures.

Figure 4. Proportion of facilities with RDTs and ACTs in stock, 1st vs. 3rd visit



- Program staff attributed improvement in adherence indicators to improved provider knowledge of national guidelines, improved register recording, and improvements in RDT and ACT stock availability.

## Conclusion

- Performance on MalariaCare's adherence indicators has steadily improved at facilities with at least three OTSS visits.
- During OTSS visits, supervisors:
  - Emphasized to providers the linkage between testing and appropriate treatment;
  - Made connections between the pharmacy, laboratory and the clinic;
  - Stimulated discussions with facility managers/in-charges on adherence patterns in their facility.
- In addition to changing provider behavior, OTSS supervisors in some countries also addressed RDT and ACT stock-outs by redistributing stock between facilities and improved stock ordering and reporting practices, which contributed to improved stock. Adequate stock levels were associated with better testing before treatment and positive test adherence.
- Inhibitors to improved adherence performance: Clinical training/guidelines out of date, stock-outs of ACTs and RDTs, poor provider knowledge/practice with continued clinical diagnosis and prescription of quinine treatment, and poor register recording.
- Recommend more focused training on diagnostic and treatment adherence and further development of monitoring protocol to better capture contributing factors (e.g., increasing sample size).

## Acknowledgements

- National Malaria Control Programs in the DRC, Ghana, Kenya, Malawi, Mali, Mozambique, Tanzania, and Zambia
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