



Reactive Case Detection (RACD) Monitoring & Evaluation Tool

The Malaria Elimination Initiative

UCSF Institute for
Global Health
Sciences

The Malaria Elimination Initiative is an initiative of
the UCSF Institute for Global Health Sciences.

shrinkingthemalariamap.org

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A set of user guides and templates to evaluate the operational components and activities in malaria case notification, investigation and RACD follow-up response, identify the operational gaps in the conducting an active surveillance program, adapt and improve surveillance activities, and provide support to making evidence-based decisions to strengthen surveillance strategies.

Developed by the Malaria Elimination Initiative at the University of California, San Francisco (UCSF) in collaboration with national malaria programs with funding for tool piloting from the Bill & Melinda Gates Foundation.

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The Malaria Elimination Initiative (MEI) at the University of California San Francisco (UCSF) believes a malaria-free world is possible within a generation. As a forward-thinking partner to malaria-eliminating countries and regions, the MEI generates evidence, develops new tools and approaches, disseminates experiences, and builds consensus to shrink the malaria map. With support from the MEI's highly-skilled team, countries around the world are actively working to eliminate malaria.

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The RACD M&E Tool was developed by UCSF MEI team member Chris Cotter with support from Alex Luo and Neil Ranasinghe. Review and helpful input on early development of the RACD M&E Tool was provided by MEI team members Roly Gosling, Cara Smith Gueye, Jenny Liu, and Kelly Sanders. External review and feedback on the Tool was provided by Jim Tulloch and Rabindra Abeyasinghe.

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Acronyms

ACD	Active case detection
M&E	Monitoring and evaluation
RACD	Reactive case detection
SOP	Standard operating procedure
WHO	World Health Organization

About the Malaria Elimination Toolkit

The MEI Malaria Elimination Toolkit is a set of proven tools, frameworks, and guides to help malaria endemic countries accelerate progress toward malaria elimination. Developed by the Malaria Elimination Initiative (MEI) at the University of California, San Francisco (UCSF), the toolkit addresses the unique challenges faced by national malaria programs in heterogeneous transmission settings. These tools have been used successfully at the national and/or subnational levels, leading to important changes in malaria policy and practice.

The MEI Malaria Elimination Toolkit focuses on three primary areas: situation assessment, tailored responses, and program management and sustainability – with the ultimate goal of building capacity and optimizing a country or district’s ability to advance

toward elimination. These tools help malaria programs understand the drivers of transmission in a target area and the readiness of the health system for elimination; decide what actions to take and how to tailor its response; and ensure efforts are well-managed and sustainably funded.

The MEI offers direct technical assistance to support the adoption, tailoring, and implementation of its tools, frameworks, and guidelines. Please contact us to learn more at mei@ucsf.edu, or visit our website at <http://www.shrinkingthemalariamap.org/toolkit>.

The MEI Malaria Elimination Toolkit



Situation Assessment

What are the drivers of transmission?
What is the readiness of the health system for elimination and what are the gaps?



Tailored response

What actions should the program take based on identified and characterized gaps?



Program management and sustainability

How does the program effectively manage and fund malaria elimination?

Introduction

Active case detection (ACD) is a World Health Organization (WHO) recommended strategy aimed at identifying and treating additional malaria infections in areas of low transmission, often at the community and household level. ACD involves screening individuals that may be at risk for malaria, regardless of the presence of malaria symptoms such as fever. This approach potentially shortens the length of time that a person is infected and infectious, treats people before they become seriously ill, and provides information that can be used to target transmission areas with vector control activities to reduce the risk of malaria.

Reactive case detection (RACD) is a commonly used form of ACD. RACD involves case investigation, whereby passively detected malaria cases (index cases) are traced to their residence to determine the suspected origin of infection (local, introduced or imported infection), and ascertain if onward transmission of malaria is possible. If the area is receptive, testing of additional contacts is carried out. RACD is conducted around an index case because evidence suggests that additional malaria infections cluster in close proximity to the index household. [Figure 1](#) describes the steps in the malaria case notification, case investigation and RACD follow-up process.

While RACD is a widely-used surveillance intervention, the approach is time and resource intensive,

can be logistically difficult, and RACD methods vary widely across malaria-eliminating settings. Challenges in implementing RACD include deciding how wide the screening radius should be around the malaria patient's house and finding individuals who were absent at the time of the screening. Reporting and implementation challenges are barriers in the surveillance and response process leading to diminished effectiveness of the malaria program activities.

[Figure 2](#) highlights the potential decay in program effectiveness through the process of malaria case notification at the health facility to the follow-up case investigation and RACD response.

What is the Reactive Case Detection (RACD) Monitoring & Evaluation Tool?

The RACD M&E Tool can provide support to national malaria programs and partners in making evidence-based decisions to strengthen their active surveillance. With the RACD M&E Tool, national malaria programs will be able to evaluate operational components in their current active surveillance program, such as completeness, timeliness, screening coverage, and additional positive malaria cases identified. Ensuring complete and timely follow-up of all positively identified malaria cases and high levels of screening coverage of RACD are both critical to reduce the potential for continued transmission in malaria-eliminating settings.

Who should use this tool?

The RACD M&E Tool is designed to be available to anyone—national- or provincial-level malaria program managers, surveillance officers, partners, or researchers – working within or with a national malaria control program. Typically, a high-level malaria program manager or surveillance officer leads the implementation of the modules, with the data collection and data entry activities supported by key provincial and district surveillance teams and health facility staff.

Technical assistance is available to support the tailoring and implementation of all MEI tools. Please visit our website and contact us for more information: <http://www.shrinkingthemalariamap.org/contactus>.

Figure 1. Overview RACD Process

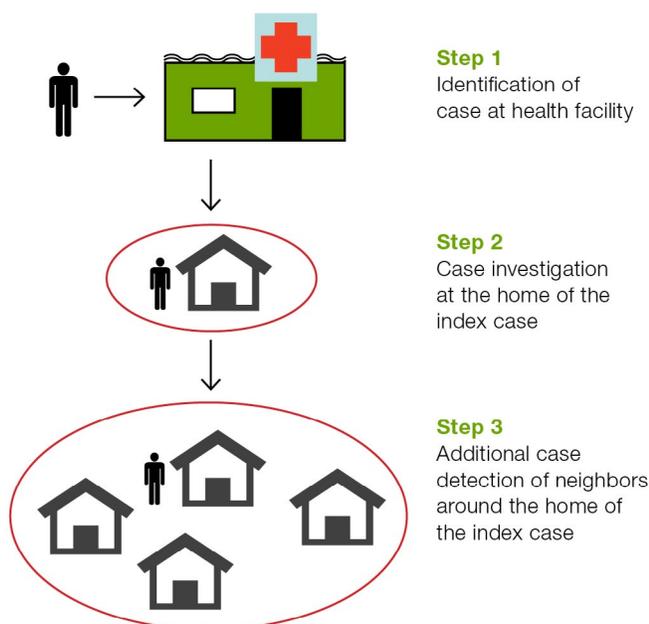
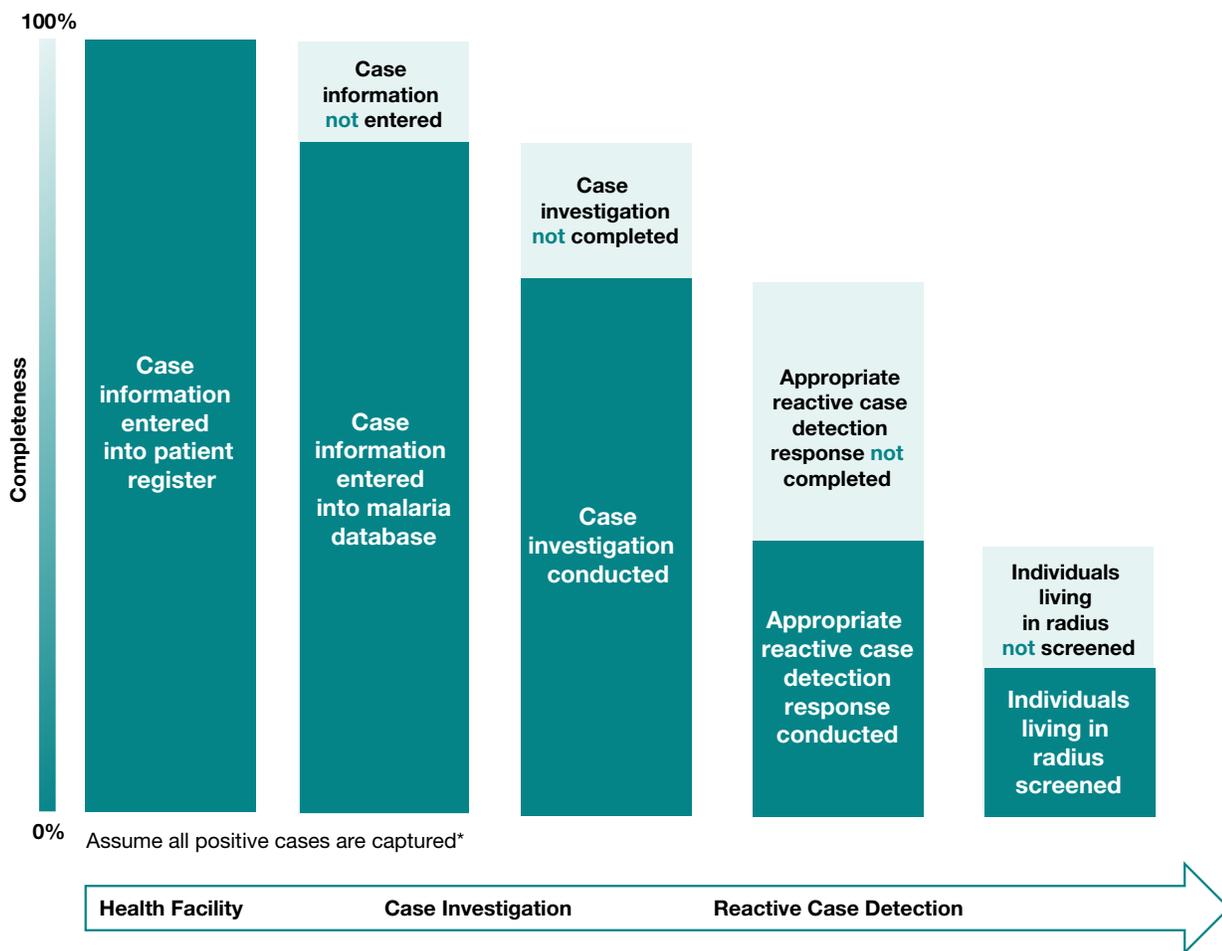


Figure 2. Barriers to Program Effectiveness

*This figure is for illustrative purposes and includes only malaria cases identified and confirmed by the health system. It is acknowledged that the figure does not fully capture or represent all malaria infections in a given community or endemic setting.

How is this tool used?

The RACD M&E Tool is designed for malaria control programs to monitor and evaluate their RACD strategies and guide malaria programs in identifying which RACD activities are being performed well and which can be improved. The RACD M&E Tool can provide support to national malaria programs in making evidence-based decisions to strengthen their active surveillance strategies.

It has been used to:

1. Evaluate the operational components in their current active surveillance program, including completeness and timeliness of activities, screening coverage, and yield of additional positive cases identified
2. Identify operational gaps in active surveillance programs

3. Support malaria control programs in strengthening their active surveillance activities
4. Design national and regional trainings on surveillance and case investigation
5. Integrate improved indicators into the national malaria database for standardized reporting
6. Provide a framework for a minimum and standardized set of activities and indicators to assess the malaria case notification, case investigation and RACD follow-up

How do I navigate this tool?

The RACD M&E Tool is comprised of a User Guide and four modules. The first step in using this tool is to consider the program's key questions (see [Figure 3](#)). Once the key questions have been defined, the program or surveillance lead should review the

User Guide to define the work ahead, including which modules should be used.

Each module has an instruction manual and Microsoft Excel and/or Word templates that should be used. Templates were created to automatically calculate outputs of summary statistics and proportions, tailored to the data collected in that module.

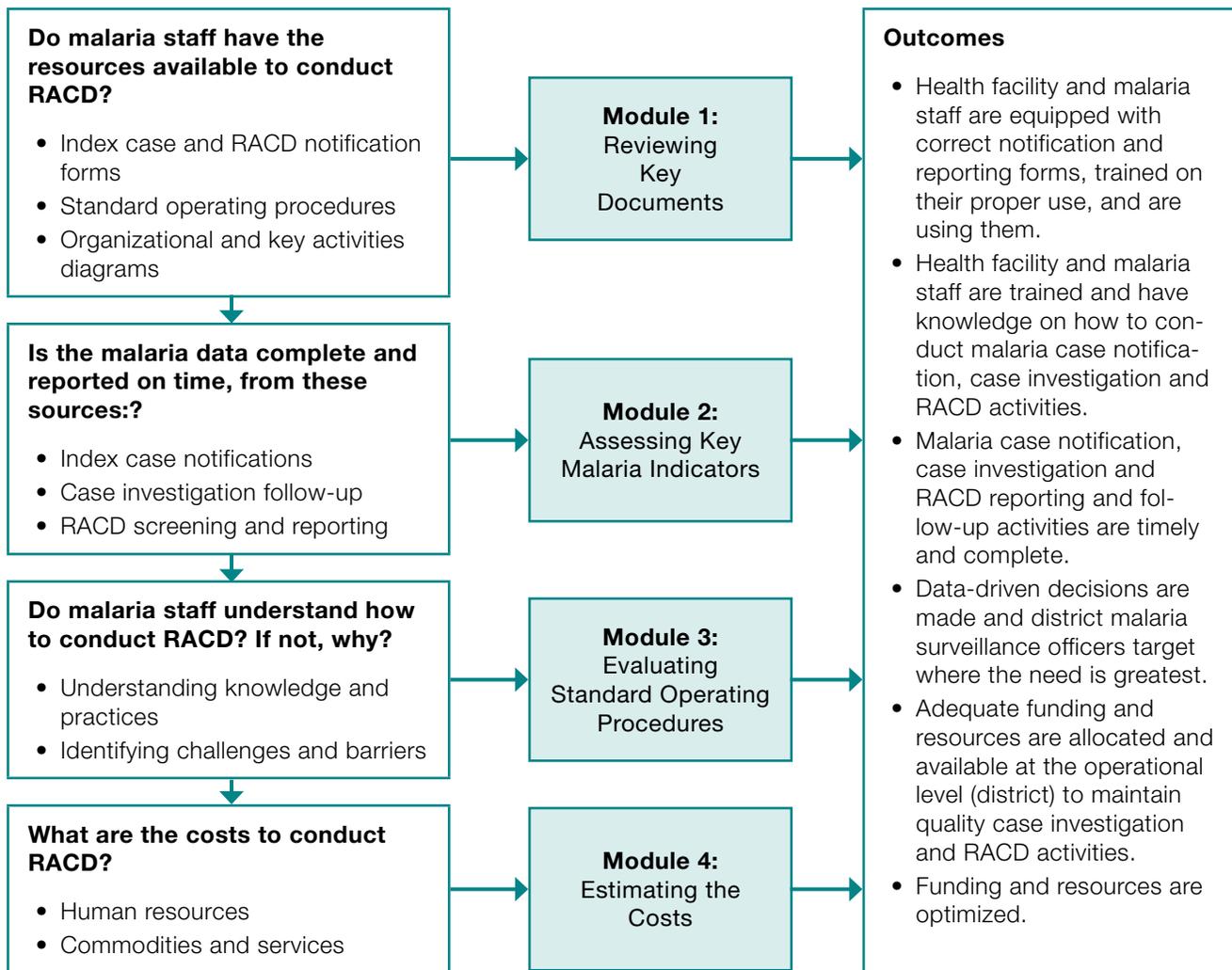
Module 1: Reviewing Key Documents – Reviews the key documents and personnel involved in the RACD process; identifies whether standard operating procedures (SOPs), organizational diagrams, and activity and reporting flow diagrams exist; and helps determine if the SOPs are used by programs staff who conduct RACD activities.

Module 2: Assessing Key Malaria Indicators – Collects quantitative data to assess the quality of malaria case reporting, case investigation, and RACD activities on dimensions of completeness, timeliness, screening coverage, and additional positive malaria cases identified.

Module 3: Evaluating Standard Operating Procedures – Uses a questionnaire to evaluate the baseline knowledge and practices of program staff in implementing the SOPs for case investigation and RACD activities.

Module 4: Estimating the Costs – Estimates the costs of conducting case investigation and RACD activities at district and provincial levels. Monthly and annual cost expenditures are calculated to support national malaria programs in budgeting the necessary resources to conduct case investigation and RACD.

Figure 3. Key Questions to Navigate the RACD M&E Tool



Key Messages

- Reactive case detection (RACD) is a form of active case detection, a World Health Organization-recommended strategy for identifying and treating additional malaria infections (from an index case) in areas of low malaria transmission.
- Though RACD is a widely-used surveillance intervention, reporting and implementation challenges can lead to the diminished effectiveness of this approach.
- Recognizing that there were no standard metrics or tools to monitor and evaluate case malaria case notification, case investigation, and RACD activities, the MEI developed the RACD Monitoring & Evaluation Tool to guide national malaria programs in identifying which of these activities are being performed well and which can be improved.
- Use of the RACD tool will help national malaria programs to make evidence-based decisions to strengthen their active surveillance activities. Ensuring complete and timely follow-up of all positively identified malaria cases and high levels of screening coverage of RACD are both critical to reduce the potential for continued transmission.

User Guide

The objectives of the **User Guide** of the RACD Monitoring & Evaluation Tool are to:

1. Understand the rationale for conducting RACD and the development of the RACD M&E Tool;
2. Describe the process to set up the RACD M&E Tool modules for implementation by provincial- and district-level malaria surveillance officers and program staff.

User Guide includes:

1. Modules Setup, a step-by-step guide to support national malaria program managers and surveillance officers in the set up of the RACD M&E tool modules for dissemination and use. Tabs in each Excel workbook module include:
 - Instructions
 - Template Setup
 - Translations Setup
 - Data entry tabs
 - Data review tabs
 - Other tabs

By following the **Modules Setup** instructions, the national-level program manager and surveillance officer can set up the modules (and data entry templates) for use by districts.

Step 1 Preparing for Data Collection

Instruct the provincial- or district-level individual to review the instructions worksheet and each worksheet in the workbook in each module that you send. Ask them to seek clarification from you on the process if they have any questions. It is best to get clarifications as early as possible to avoid wasting time inputting incorrect data.

After receiving the module-related files from you, instruct them to:

1. Save the master file you sent on their computer or a flash drive to keep a master copy available for additional use. (ie, more districts)
2. Save a NEW file (using 'save as') to match the district and the month of the evaluation date. The suggested format is "districtname_month-year_reviewdocuments.xls" or "districtname_monthyear_mod1-docreview.xls". Standardizing the file name will help to organize the results of the RACD M&E tool for future evaluations. (Note: the national-level person (you) leading the evaluation could do this if you choose to do so before sending to the provincial or district level.)
3. Save frequently after entering in any data. This will help to prevent from re-entering data lost.
4. Once that individual has completed the data entry for a module, ask them to send you the completed document back to you once all of the relevant data are entered in the Excel workbooks.

Step 2 Reviewing after Data Collection

The data will need to be reviewed by you and the surveillance team at the national or provincial level. Once the completed documents have been sent back to you (or softcopy given to you) with all of the relevant data entered, create a RACD M&E Tool evaluation folder on your computer to ensure that all relevant evaluation files and modules are placed there.

Next, the 'data entry' worksheets for each module can be reviewed to examine their completeness. Look in the red colored boxes on this page to identify areas that might be blank (not completed). Scan the red colored boxes with data to see if they seem accurate (ie, realistic). It is possible that while the district-level surveillance officer was entering data, a typo or other mistake could have been entered.

Finally, the 'data review' worksheet will automatically calculate outputs (tables, figures) of the data collected in the data entry worksheet. Totals and proportions will be calculated and should be reviewed and interpreted for possible action by the district-, provincial- or national-level leadership.

Once all of the modules have been collected, reviewed and interpreted, steps can be taken to make the necessary improvements in malaria case notification, completeness and timeliness.

