



A Malaria Elimination Guide to Reactive Case Detection (RACD) Monitoring & Evaluation Tool

Module 2: Assessing Key Malaria Indicators

The Malaria Elimination Initiative

UCSF Institute for
Global Health
Sciences

The Malaria Elimination Initiative is an initiative of
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shrinkingthemalariamap.org

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Introduction

The objectives of [Module 2](#) of the RACD Monitoring & Evaluation Tool are to:

1. Compare and evaluate the accuracy of malaria case notification, case investigation, and RACD activities between the central database and local records
2. Identify strengths and gaps in malaria case notification, case investigation, and RACD activities in order to implement improvements

Why is Module 2 Useful?

By drawing on current programmatic indicator data that is reported to the national malaria programs, [Module 2](#) assesses case investigation and RACD indicators for completeness, timeliness, screening coverage, and additional positive malaria cases identified. District-level malaria surveillance officers can use [Module 2](#) to identify the strengths and gaps of RACD activities. Coverage of RACD screenings and number of additional positives identified are included in [Module 2](#) to highlight summary results from RACD activities.

Who Should Use Module 2?

The RACD M&E tool will be led by a national- or provincial level malaria program manager or surveillance officer. [Module 2](#) is implemented by district-level surveillance officers who collect data from the malaria database and/ or records on health facility, case investigation and RACD activities. District-level surveillance staff may require the help from district health facilities for some components of the RACD M&E tool evaluation. Using the data collected, district-level surveillance officers and personnel will be able to monitor and evaluate monthly case reporting for completeness, timeliness, screening coverage, and additional positives identified.

How is Module 2 Used?

[Module 2: Assessing Key Malaria Indicators](#) includes a series of Excel worksheets and a corresponding manual to aid district-level surveillance officers and personnel in the collection and entry of raw data. The workbook for [Module 2](#) are available on the 'Tools' section of the Malaria Elimination Initiative's website: www.shrinkingthemalariamap.org.

The accompanying materials to complete [Module 2](#) include:

1. [Module 2](#) of Manual
2. Malaria Indicators Excel workbook

Where Has Module 2 Been Used?

The RACD M&E tool and its modules were piloted in several malaria-eliminating settings, including provinces in Cambodia, China, Indonesia, South Africa, and Thailand. The tool has since been implemented in Zanzibar, along the Myanmar border (Yunnan Province, China) and scaled-up nationally in Thailand. As a result of implementing the tool, and thereby having an improved understanding of operational gaps, several countries conducted national- and regional-level trainings on surveillance and case investigation, and indicators from the tool were integrated into the national malaria database to ensure standardized reporting. Results from [Module 2](#) have identified that case reporting from health facilities to the malaria databases is rarely complete, most case investigations are not conducted in a timely manner, and RACD events often did not occur and within the timeframe specified by the program's guidelines.

For example, in Ranong Province, Thailand, reported monthly case investigation and RACD completion rates ranged from 55-81% and 22-72%, respectively.

Module 2 Includes:

1. [Module 2](#) Manual, a step-by-step guide to support district-level surveillance officers in the data entry process (this document)
2. Malaria Indicators Excel workbook to enter the data and information from health facilities and the malaria database that are necessary to complete the module. Worksheets in this workbook include:
 - Instructions
 - Template Setup
 - Translations Setup
 - Health Facility Data
 - District Level Data
 - Health Facility Review
 - Case Investigations Review

- RACD Review
- Health Facility Data All ('hf-data all')
- District Data All

By following the [Module 2 Manual](#) and using the **Malaria Indicators Excel workbook**, the district surveillance officer and personnel can collect data on health facility malaria case reporting, case investigation, and RACD activities to monitor and evaluate monthly malaria case reporting for completeness, timeliness, screening coverage and additional positives identified.

After You Complete Module 2:

The findings generated from completing [Module 2](#) can be used in district-level meetings and presentations to monitor and evaluate the performance of district-level malaria personnel. Provincial- and national-level surveillance personnel may want to obtain the district-level [Module 2](#) Malaria Indicators workbook to monitor and evaluate these active surveillance activities on a larger scale.

Getting Started

The following instructions and activities correspond to the Malaria Indicators Excel workbook.

Before you start updating the Malaria Indicators Excel worksheets, please do the following:

1. Read this document to become familiar with [Module 2](#).
2. Open the Malaria Indicators Excel workbook and read the instructions to become familiar with the data entry steps in [Module 2](#).

Workflow Summary

The national or provincial manager or surveillance officer will format the Malaria Indicators Excel workbook to complete [Module 2](#). Instructions for setting up the Malaria Indicators Excel workbook can be found in the *RACD Monitoring and Evaluation Tool User Guide for National Surveillance Officers and Personnel*. This is a separate guide that includes set-up instructions for all RACD Monitoring & Evaluation Tool modules and corresponding workbooks.

The steps below summarize the workflow to complete [Module 2](#). Detailed instructions for Steps 1-4 are included in the following pages of this manual.

Step 1

Confirm that the file name matches the district and date for which the information is representing. The suggested format is “DistrictName_MonthYear_Malaria_Indicators.xls”. Include both the district name and date (including month) for which the data is being included in the evaluation. For example, “PongNamRon_Jan2018_Malaria_Indicators.xls”

Step 2

Enter the appropriate data into the Malaria Indicators Excel workbook. Save frequently as you enter data.

- Recording Health Facility Data
- Recording District Level Data

Step 3

Use the review sheets in the Malaria Indicators Excel workbook to review the data entered:

- Data Review workbooks

Step 4

After you have entered all the data into Malaria Indicators Excel workbook, save and send the completed document to the individual who is leading the module in your province or region. Repeat Steps 2, 3, and 4 to enter data for different years or months, if updating the workbook in the future.

- Saving and sending the completed Malaria Indicators Excel workbook

After you have entered in all of the data in the Reviewing Key Documents Excel workbook, you need to send it back to the individual who is leading the module in your province or region. Follow the instructions below for completing the workbook:

1. Confirm that the district name and date for the evaluation data are correct. In the Key Document Evaluation worksheet, confirm correct values for district, province, and year in the 1. Location Overview section before saving.
2. Save the file. Ensure the file name includes the district name and date, for example: “PongNamRon_Jan2018_Review_Documents.xls”.
3. Send the saved file back to the person who originally sent it to you. This can be done via email or by using a USB drive for manual file transfer.

Step 1 Confirming Template for Assessing Key Malaria Indicators

Summary

Use the **Malaria Indicators Excel workbook** and the **Health Facility Data worksheet** within it to review the following information prior to starting data collection:

1. Confirm the file name and date is correct
2. Confirm the province and year is correct

Note: In Malaria Indicators Excel workbook you can only update cells that are shaded pink. For example, in the table below you could only change the value for 'District':

District	
Province	
Year	

Reviewing the File Name of the Malaria Indicators Excel workbook

Confirm that the Excel document file name matches the district and date for which the information is representing. The suggested format is "District-Name_MonthYear_Review_Documents.xls". Include both the district name and date (including month) for which the data is being included in the evaluation. For example, "PongNamRon_Jan2018_Review_Documents.xls".

Reviewing the Province and Year for the Malaria Indicators Excel Workbook

Before entering in data, confirm that the Province and Year information is accurate for the data about to be entered. This should be pre-populated by the individual who is leading the RACD M&E tool evaluation and sent it to you.

1. Open the Malaria Indicators Excel workbook.
2. Click the Health Facility Data worksheet and scroll down to row 11.
3. In the 1. Location Overview section, select the appropriate district from the District drop-down list in row 13.
4. Confirm that the Province and Year are correct. If the Province and/or Year are incorrect, please contact the individual who is leading the module in your province or region.
5. Click the District Level Data worksheet and confirm the District, Province and Year are correct.
6. If correct, save any changes you have made and proceed to Step 2.

Step 2 Entering Data for Health Facility, Case Investigation, and Reactive Case Detection (RACD) Reporting

Recording Health Facility Data

Summary

Use the Health Facility Data worksheet in the Malaria Indicators Excel workbook to record the following data:

1. Location Overview
2. Health Facility Records
3. Malaria Database Records

Note: In Malaria Indicators Excel workbook you can only update cells that are shaded pink. For example, in the table below you could only change the value for 'District':

District	
Province	
Year	

How to Update the 'Location Overview' Section

1. Open the Malaria Indicators Excel workbook.
2. Click the Health Facility Data worksheet and scroll down to row 11.
3. In the 1. Location Overview section, select the appropriate district from the District drop-down list in row 13.
4. Save any changes you have made.

How to Update the 'Key Document Evaluation' Section

1. Open the Malaria Indicators Excel workbook.
2. Click the Health Facility Data worksheet and scroll down to row 17.
3. In the 2. Health Facility Records section, the District Name will automatically populate.
Warning: Do not add extra rows. If you need to add more health facilities, please contact the individual who is leading the module in your province or region.
4. Select the type from the Health Facility Type drop down list.

5. Enter the Health Facility ID/Name for which you are adding the data.
6. Count and record the number of positive malaria cases for each month from the health facility log and enter the values into the appropriate cell for each month.
Note: To obtain the number of malaria cases entered into the health facility log you will likely need to contact (and possibly visit) the individual who is responsible for registering malaria patients at each health facility to be examined in this exercise.
7. Save frequently any changes you have made.

Note: Do not add extra columns. If you need to add more health facilities, start a new version of the Reviewing Key Documents Excel workbook and add a '2' at the end of the file name to denote a 2nd Excel workbook. In the 2nd Excel workbook you can include additional health facilities in the available columns. If you have further questions, please contact the individual who is leading the module in your province or region.

How to Update the 'Malaria Database Records' Section

1. Open the Malaria Indicators Excel workbook.
2. Click the Health Facility Data worksheet and scroll down to row 64.
3. In the 3. Malaria Database Records section, insert the total number of malaria cases from the central (district) level malaria database for each health facility listed for each month.
Note: To obtain the number of malaria cases entered into the malaria database, the central (district) level malaria information system will need to be accessed. This is likely to be a malaria database that is used to record monthly malaria case totals and other information from each district.
4. Save frequently any changes you have made.

Recording District Level Data

Summary

The **District Level Data** worksheet in the Malaria Indicators Excel workbook is used to evaluate the completeness and timeliness of health facility malaria case notification, case investigation, and reactive case detection (RACD) screenings.

Data should be entered every month and should represent district totals.

You will be recording the following data:

1. Location Overview
2. Reported Malaria Cases
3. Completed Case Investigations
4. Reactive Case Detection (RACD)

Note: Check to ensure that the District is displaying correctly. If not, return to the health facility level worksheet to correct the information. If the Province and Year are not showing up correctly, contact the individual who is leading the module.

How to Update the 'Reported Malaria Cases' Section

1. Open the Malaria Indicators Excel workbook.
2. Click the **District Level Data** worksheet and scroll down to row 17.
3. In the **2. Reported Malaria Cases** section, for indicator **2.1**, enter the monthly data from the malaria database for the entire district for each month.
4. For indicator **2.2**, enter the cases reported to the malaria database according to the amount of days specified in the SOP for reporting.
5. In **row 22** enter the amount of days used in indicator **2.1**. The number of days for case reporting is set by the NMCP. Contact the individual who is leading the module in your province or region if you have any questions on what to input.
6. Save frequently any changes you have made.

How to Update the 'Completed Case Investigations' Section

1. Open the Malaria Indicators Excel workbook.
2. Click the **District Level Data** worksheet and scroll down to row 25.
3. In the **3. Case Investigation** section, for indicator **3.1**, enter the total number of completed case investigations for each month.

4. For indicator **3.2**, enter the total number of completed cases investigations according to the amount of days you specify.
5. In **row 30** enter the amount of days used in indicator **3.1**. The number of days for case investigations is set by the national malaria program. Contact the individual who is leading the module in your province or region if you have any questions on what to input.
6. Save frequently any changes you have made.

How to Update the RACD Section

1. Open the Malaria Indicators Excel workbook.
2. Click the **District Level Data** tab and scroll down to row 33.
3. In the **4. Reactive Case Detection (RACD)** section, for indicator **4.1**, enter the total number of cases that require RACD screening for each month.
4. For indicator **4.2**, enter the total number of RACD events that have occurred for each month.

Note: An RACD event is when an active case detection or surveillance team visits an index case in their community (usually at the patient's residence) to screen contacts of the index case living in the same residence and/or community.

5. For indicator **4.3a**, enter the total number of individuals screened during RACD for each month.
6. For indicator **4.3b**, enter the total number of individuals living in the RACD screening area (who should be screened) for each month.
7. For indicator **4.4**, enter the number of RACD events conducted within the period specified below.
8. For indicator **4.5**, enter the amount of positive cases newly identified using RACD for each month.
9. In **row 42** enter the amount of days used in indicator **4.4**. The number of days for RACD events is set by the national malaria program. Contact the individual who is leading the module in your province if you have any questions.
10. Save frequently any changes you have made.

Step 3 Reviewing Data

The three blue review worksheets in the Malaria Indicators Excel workbook automatically collate the data previously entered in the data entry worksheets.

The formulas do the following:

- compile data entered into the worksheets
- format the results into percentages
- present the data visually as figures and tables

The figures and tables can be used to review (monitor) or be included in reports or presentations. Bookmarks (near the top of each worksheet) are included in each of the three review worksheets for easier navigation. By clicking on one of the bookmarks, the page will automatically navigate the user to the figure or table specific to the bookmark clicked.

Note: You can only review data in this worksheet. To update any of this data you must return to either the **Health Facility Data** or **District Level Data** worksheets.

Health Facility Review Worksheet

Summary

The Health Facility Review worksheet in the Malaria Indicators Excel worksheet is used to review the completeness and timeliness of health facility malaria case reporting.

You will be reviewing the following data:

- Location Overview
- Data outputs on:
 - » Completeness of health facility case reporting **(from examined facilities)**
 - » Timeliness of health facility case reporting **(using district totals)**

Indicators for Review Include:

- **Indicator 1:** Percentage of malaria cases reported to the malaria database from examined health facilities
- **Indicator 2:** Percentage of malaria cases reported to the malaria database within the specified number of days

Data Outputs Section

Summary

This section presents the entered data visually as tables and figures. Tables and figures can also be used to copy and paste into reports or presentations.

Outputs include:

- **Table:** percentage reporting by facility
- **Figure:** percentage of case reporting completeness
- **Figure:** percentage of case reporting within [x] days by month

Case Investigation Review Worksheet

Summary

The Case Investigation Review worksheet in the Malaria Indicators Excel workbook is used to review the completeness and timeliness of case investigations.

You will be reviewing the following data:

- Location Overview
- Data outputs on:
 - » Completeness of case investigations
 - » Timeliness of case investigations

Indicators for Review Include:

- **Indicator 1:** Percentage of malaria cases reported to the malaria database that was investigated
- **Indicator 2:** Percentage of malaria cases reported to the malaria database investigated within the specified number of days

Step 3 Reviewing Data

Data Outputs Section

Summary

This section presents the entered data visually as tables and figures. Tables and figures can also be used to copy and paste into reports or presentations.

Outputs include:

- **Table:** Case investigation completeness by month
- **Figure:** Percentage of cases investigated by month
- **Table:** Case investigation timeliness by month
- **Figure:** Percentage of cases investigated within [x] days by month

RACD Review Worksheet

Summary

The RACD Review worksheet in the Malaria Indicators Excel workbook is used to review the completeness, timeliness, screening coverage, and additional cases identified through RACD.

You will be reviewing the following data:

- Location Overview
- Data outputs on:
 - » Completeness of RACD events that occurred
 - » Timeliness of RACD events
 - » Coverage of population screened during RACD
 - » Number of positive malaria cases newly identified through RACD

Indicators for review include:

- **Indicator 1:** Percentage of RACD events that occurred
- **Indicator 2:** Percentage of RACD events that occurred within [X] days
- **Indicator 3:** Percentage of the population that was screened during RACD events
- **Indicator 4:** Number of new malaria cases identified through RACD

Data Outputs Section

Summary

This section presents the entered data visually as tables and figures. Tables and figures can also be used to copy and paste into reports or presentations.

Outputs include:

- **Figure:** Percentage of RACD events that occurred
- **Figure:** Percentage of RACD events that occurred within [x] days
- **Figure:** Percentage of population that should have been screened
- **Figure:** Average number of individuals screened per RACD event
- **Figure:** Ratio of new cases identified through RACD to number of individuals screened (per thousand)

Step 4 Saving and Sending the Completed Malaria Indicators Excel Workbook

After you have entered in all of the data in the Malaria Indicators Excel workbook, you need to send it back to the individual who is leading the module in your province or region. Follow the instructions below for completing the workbook:

1. Confirm that the district name and date for the evaluation data are correct. In the Health Facility Data or District Level Data tabs, confirm correct values for district, province, and year in the 1. Location Overview section before saving.
2. Save the file. Ensure the file name includes the district name and date, for example: "PongNam-Ron_Jan2018_Malaria_Indicators.xls".
3. Send the saved file back to the person who originally sent it to you. This can be done via email or by using a USB drive for manual file transfer.

If the Excel workbook is being used for malaria reporting on an ongoing basis, please update the sheets for Health Facility Data and District Level Data every month. Following each monthly update, please repeat steps 1, 2, and 3 above.

Health Facility and District Level Datasheets

The final two worksheets in the Malaria Indicators Excel workbook ('hf-data all' and 'district data all' worksheets) present data that was entered into the health facility and district level worksheets in a format that can be used for data analysis using statistical programs such as STATA, SPSS, etc. You do not need to do anything with these worksheets. These worksheets are unlocked to allow you to use the data for statistical analysis if desired.