Rwanda

RHIS Profile: This document outlines the reporting structures of health management and information systems (HMIS) that include malaria data. In Rwanda, this includes the routine health management and information systems (R-HMIS), Community Information System (SISCom), electronic integrated disease surveillance and response system (eIDSR), and RapidSMS, which collect information from more than 800 public and private facilities, with high rates of completion, timeliness, and quality. The country spent two years planning the introduction of the web-based R-HMIS and spent a few months rolling it out nationally, fully replacing the former *Gestion du système d'information sanitaire* (GESIS) system by February 2012. Facility-level data are directly entered into DHIS2; data from community health workers (CHWs) are entered separately into SISCom. The current eIDSR was launched in 2013, making Rwanda the first low-income country with a national eIDSR system incorporating mobile technology. RapidSMS was introduced in September 2018 to report severe malaria cases and send notifications of stockouts of malaria commodities at the community level (by CHWs).

Acronyms:
C-EHO: Community and Environmental Health Officer
DH: district hospital
ESR: Epidemic Surveillance and Response
HC: health center
M&E: monitoring and evaluation
MoH: Ministry of Health
MOPDD: Malaria and Other Parasitic Diseases Division
PMEBS: Planning, M&E and Business Strategy
RBC: Rwanda Biomedical Center

	R-HMIS	SISCom	eIDSR	RapidSMS
	When started: 2012 on DHIS2 **Scale-up status:** National	**When started:** 2009 **Scale-up status:** National	**When started:** 1998 on paper, 2013–2014 on Voxiva TracNet, 2015 on DHIS2 **Scale-up status:** National	**When started:** 2009 reporting on pregnant women; 2018 started reporting in real time on severe malaria cases and stock status
National	**Reporting format/platform:** DHIS2 **Managed by:** Six-person M&E and health information system teams in the PMEBS Division at RBC. **Dissemination:** MoH and MOPDD have direct access to DHIS2. **Key tasks:** MOPDD staff use data to track progress, plan indoor residual spraying, and monitor insecticide-treated net distribution. MoH produces an Annual Statistics Booklet.	**Reporting format/platform:** DHIS2 **Managed by:** PMEBS **Dissemination:** MoH and MOPDD have direct access to DHIS2. **Key tasks:** MoH health financing staff extract SISCom data to Excel to calculate performance-based financing incentives for CHW cooperatives.	**Reporting format/platform:** DHIS2 **Managed by:** PMEBS **Dissemination:** ESR develops Situation Reports for MoH and publishes a weekly surveillance report on the RBC website. **Key tasks:** ESR Division of RBC receives potential outbreak alerts via mobile, analyzes and publishes data, and leads and coordinates outbreak response.	**Reporting format/platform:** PYTHON **Managed by:** PMEBS **Dissemination:** MoH and MOPDD have direct access to RapidSMS. **Key tasks:** MOPDD staff use data to track progress, monitor drug stockouts, and coordinate stock replenishment/redistribution.
Province • 4 provinces and Kigali city	**Reporting format/platform:** n/a **Managed by:** n/a **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** n/a	**Reporting format/platform:** n/a **Managed by:** n/a **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** n/a	**Reporting format/platform:** n/a **Managed by:** n/a **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** n/a	**Reporting format/platform:** n/a **Managed by:** n/a **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** n/a
District • 30 districts	**Reporting format/platform:** n/a **Managed by:** District Administrative Office **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** Lead annual district health planning meetings and quarterly coordination meetings with District Health Director, heads of health services, and CHW supervisors to discuss priorities and issues, including data; liaise with district-level staff from other sectors	**Reporting format/platform:** n/a **Managed by:** District Administrative Office **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** Lead annual district health planning meetings and quarterly coordination meetings with District Health Director, heads of health services, and CHW supervisors to discuss priorities and issues, including data; liaise with district-level staff from other sectors	**Reporting format/platform:** DHIS2 **Managed by:** District Administrative Office **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** Malaria focal points use it to investigate suspect cases to verify potential outbreaks and give feedback on weekly reports to HC and DH.	**Reporting format/platform:** PYTHON **Managed by:** District Administrative Office **Reported to:** n/a **Reporting frequency:** n/a **Key tasks:** Health director, district pharmacist, and malaria focal points monitor severe malaria cases and stockouts of malaria commodities at community level.
Facility Level • 655 public facilities (495 HCs and 35 DHs) • 302 private facilities • 45,000 CHWs	**Reporting format/platform:** DHIS2 **Managed by:** Data manager at each HC and DH collects paper aggregate forms from each service chief. **Reported to:** National level **Reporting frequency:** Monthly **Key tasks:** Data manager reviews and stores paper forms, transcribes data to DHIS2 by 5th, does quality checks by 10th, analyzes data, and generates presentations for clinical staff. M&E officer at each hospital looks at trends and irregularities. Data manager at each hospital conducts quality checks of HC data under the catchment area. Heads of health facilities approve data before submission into DHIS2.	**Reporting format/platform:** DHIS2 **Managed by:** C-EHO **Reported to:** HC data manager **Reporting frequency:** Monthly by 3rd to cell, by 8th to HC; entered into DHIS2 by 15th **Key tasks:** CHWs meet to complete one form per village, cell-level CHW coordinator collects and aggregates villages on SISCom form, which is sent to data manager for transcription to DHIS2. C-EHO reviews data with CHWs at a general monthly discussion meetings. Data manager at each hospital conduct quality checks of HC data under the catchment area.	**Reporting format/platform:** DHIS2 **Managed by:** Data manager **Reported to:** National level **Reporting frequency:** Immediate case-based reporting and weekly aggregate reporting **Key tasks:** Data manager collects data for entry into immediate and weekly reporting modules, looks for irregularities in trend data, investigates reported cases, and identifies potential outbreaks.	**Reporting format/platform:** PYTHON **Managed by:** Data manager and C-EHO **Reported to:** n/a **Reporting frequency:** real time **Key tasks:** Monitor severe malaria cases and stockout of malaria commodities **CHW level** **Reporting format/platform:** Telephone SMS **Managed by:** CHWs **Reported to:** National level **Key tasks:** CWHs receive patients, identify severe malaria cases, and notify HF using SMS. CHWs also notify HF about commodity stockouts.

Table 1: Key Malaria Indicators by System

Indicate Y or N for each reporting element captured by the system.

Key Indicators	System			
	R-HMIS	SISCom	eIDSR	RapidSMS
Number of malaria cases				
Suspect or fever cases	Y*	Y*	N	N
Tested (diagnostically)	Y	Y	N	N
Diagnostically confirmed (positive)	Y	Y	Y	N
Clinical or presumed or unconfirmed	N	N	N	N
Outpatient/inpatient	Y/Y	N/Y	N	N
Uncomplicated/severe	Y/Y	Y/Y	N	N/Y
Age categories (e.g., <5, 5+)/Sex disaggregation (M, F)	Y**/N	Y/N	Y/N	N
Pregnant women	Y	N	N	N
Number of malaria deaths				
Age categories (e.g., <5, 5+)/Sex disaggregation (M, F)	Y/N	Y/N	Y/N	N
Pregnant women	Y	N	N	Y
Commodities (Availability or stockout/Consumption)				
RDT	Y/Y	Y/Y	N/N	Y
ACT	Y/Y	Y/Y	N/N	Y
Severe malaria treatment	Y/Y	N/N	N/N	Y
SP	N/N	N/N	N/N	
IPTp 1/2/3(+)	n/a	n/a	n/a	n/a
Completeness of reporting	Y	Y	Y	n/a

*Only for children <5 as part of integrated management of childhood illness (IMCI) ** OPD categories include 2–59 months, 5–19 years, and 20+ years

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Data Quality Activities:

Routine data quality reviews/audits: The Planning, M&E and Business Strategy (PMEBS) Division conducts bi-annual data quality audits (DQAs) nationwide to validate R-HMIS data. The Malaria and Other Parasitic Diseases Division (MOPDD) conducts performance-based financing and DQAs to check concordance between R-HMIS and registers and to enhance reporting completeness. Implementing partners conduct quarterly DQAs and data review meetings in 11 districts. Dashboards are embedded in the HMIS/SISCom that compare consumptions, stocks, and cases. PMEBS staff conduct supportive supervision, as do MOPDD senior staff to regional and district levels to spot-check data and improve data understanding and use. MOPDD supervisory visits are done monthly to districts needing extra assistance and quarterly to all other districts.

Monthly or quarterly malaria bulletin: MOPDD initiated a quarterly malaria bulletin in March 2017.

Data availability: MOPDD and senior government staff have direct, password-protected access to DHIS2. District hospitals can view data from their underlying health centers but not higher levels. Health center staff can view data from their own facility only.

Data use: PMEBS and MOPDD staff analyze and use R-HMIS data to track progress, plan indoor residual spraying, and monitor insecticide-treated net distribution. Each facility has a data manager who is trained in DHIS2 and can analyze data, display graphs, and generate reports. District administrative staff have capacity for data analysis for discussion in different meetings and fora at the district level.

Additional Context:

- Rwanda's Ministry of Health has a mandate to set health policies and spot-check their implementation. The Rwanda Biomedical Center (RBC) is responsible for operationalizing those policies, including routine monitoring to ensure adherence and quality. The RBC PMEBS highlights issues for management but leaves most detailed analysis to program-specific Monitoring and Evaluation Units.

- As of 2016, all private health care providers are required to report malaria cases into R-HMIS.

- Epidemic Surveillance and Response is working to automatically integrate lab results from the LabWare system used by the National Reference Laboratory into eIDSR and is exploring a community module to identify unusual events among humans and animals.

- Rwanda does not have a standalone national malaria surveillance strategy, but the Malaria Strategic Plan includes a section on surveillance.

Recent updates:

From Feb 2021, we have updated the HMIS format where other malaria indicators were included: Suspect or fever cases for all age groups, first line treatment, malaria cases by gender, and malaria tests by age group.

We have also developed malaria dashboard and scorecards for selected indicators into Rwanda health Analytics Platform (RHAP)