# Zanzibar

**RHIS Profile:** Zanzibar is a semi-autonomous archipelago within the United Republic of Tanzania; it maintains its own government, including a Ministry of Health (MOH). Zanzibar's malaria program is the Zanzibar Malaria Elimination Programme (ZAMEP). In Zanzibar, malaria and other health data are transferred from the health facility to the national level through the council level. Routine malaria data are collected from health facilities through four parallel channels: the national routine health information system (RHIS), which captures all health facility and community data; the program-specific malaria epidemic early detection system (MEEDS); the malaria case notification (MCN) or case-based surveillance (CBS) system, which is focused on case follow-up and investigation; and the integrated disease surveillance and response (IDSR). Both RHIS and IDSR data are reported into the electronic District Health Information Software 2, version 2 (DHIS2). Currently, all 275 health facilities in Zanzibar are registered to report to DHIS2, MEEDS, and MCN/CBS and do so with varying degrees of completeness and timeliness. Malaria efforts currently rely heavily on MEEDS and MCN/CBS; MEEDS serves as the main passive surveillance system, and MCN/CBS serves as malaria case follow-up.

| | RHIS | MEEDS | MCN/CBS | e-IDSR |
|---|---|---|---|---|
| | **Started:** 2006 **Scale-up status:** National | **Started:** 2008 **Scale-up status:** National | **Started:** 2012 **Scale-up status:** National | **Started:** 2004 **Scale-up status:** National |
| **National** | **Reporting format/platform:** DHIS2 **Managed by:** MOH Health Management Information System (HMIS) Unit; 14 staff in Unguja (statisticians; data clerks; information, communication, and technology staff; health officers) and 4 staff in Pemba **Dissemination:** Annual HMIS health bulletin **Key tasks:** Data quality reviews. Decision making. Develop policy. Data collection tools development, training on data collection and management, and dissemination through dashboards, scorecards, and annual bulletin. | **Reporting format/platform:** MEEDS database via SELCOM server **Managed by:** MOH ZAMEP Surveillance, Monitoring, and Evaluation (SME) Unit **Dissemination:** Combined quarterly surveillance report for MEEDS and MCN/CBS, findings summarized in ZAMEP annual report; production of weekly summary report **Key tasks:** Data quality activity. Decision making. Ensure that all health facilities have reported in a timely manner. Capacity building of council and health facility levels. Supportive supervision. Provide MEEDs and national malaria case register forms if missing. If there is an elevation in cases, ZAMEP staff will go to health facility area to learn more and attempt to address issues. | **Reporting format/platform:** "Coconut" surveillance platform via SELCOM server **Managed by:** MOH ZAMEP SME Unit **Dissemination:** Combined quarterly surveillance report for MEEDS and CBS, findings summarized in ZAMEP annual report; production of weekly summary report **Key tasks:** Ensure that all health facilities have reported in a timely manner. Will use MEEDS to help identify which health facilities are not reporting, if necessary. | **Reporting format/platform:** DHIS2 **Managed by:** MOH Epidemiology Unit **Dissemination:** No bulletins **Key tasks:** Coordinate with HMIS Unit to ensure that all data are reported from facilities. Ensure that facilities are reporting IDSR weekly data in a timely manner. Analyze and interpret data from DHIS2. |
| **Council** • 11 councils in Zanzibar • On average, 22 facilities per council | **Reporting format/platform:** DHIS2 **Managed by:** Council health management team (CHMT), council data manager **Reported to:** MOH HMIS Unit **Reporting frequency:** Some forms in the DHIS2 are weekly, some are monthly, some are quarterly; malaria is weekly for outpatient departments (OPDs) and monthly for inpatient departments (IPDs). **Key tasks:** Data validation and analysis. Ensure that all health facilities are reporting completely and timely. If health facility data are not being reported through computers or tablets, must go to health facility to collect summary form data. Capacity to provide training on filling out summary forms or uploading data via laptops. | **Reporting format/platform:** MEEDS database **Managed by:** CHMT, made up of about 2–4 council malaria surveillance officers (CMSOs) per district **Reported to:** MOH ZAMEP SME Unit **Reporting frequency:** Weekly **Key tasks:** CMSOs are mostly focused on MCN/CBS responsibilities but may remind health facilities to report their data. CMSOs meet with national staff during quarterly meetings to discuss MEEDS data. | **Reporting format/platform:** Mobile phone—Unstructured Supplementary Service Data (USSD) **Managed by:** Lead by deputy director for health; malaria data managed by 2–4 CMSOs, depending on the burden of malaria in the district **Reported to:** MOH ZAMEP SME Unit **Reporting frequency:** Malaria case reporting within 24 hours of diagnosis **Key tasks:** If a malaria case is diagnosed, CMSOs will receive a message over mobile phone. CMSOs must undergo investigation and report the results of the investigation within 48 hours of notification. Investigation results are reported over mobile phone or tablets to the Coconut surveillance platform. | **Reporting format/platform:** DHIS2 **Managed by:** Council IDSR response team **Reported to:** N/A **Reporting frequency:** Weekly **Key tasks:** Review IDSR form data in DHIS2. Ensure that health facility staff know when and how to report priority diseases and conditions. Work with council response team if necessary. |
| **Facility** • 275 (175 public, 100 private) facilities reporting; expected to report into DHIS2 | **Reporting format/platform:** Paper-based for recording then reported into DHIS2 **Managed by:** Health facility member in-charge **Reported to:** CHMT—specifically the council data manager **Reporting frequency:** Monthly, by end of the first week of the following month; weekly for malaria **Key tasks:** Health facility staff capture facility data using the registers. Each month, cases are summarized into paper-based disease-specific monthly summary forms. Malaria data are collected in weekly forms. Health facility staff directly upload data from summary forms into DHIS2. If unable to upload due to issues, council data managers must go to health facility to collect summary forms. | **Reporting format/platform:** Paper forms for recording, cell phones for reporting **Managed by:** Health facility member in charge or staff designated with reporting **Reported to:** ZAMEP through SELCOM server **Reporting frequency:** Weekly, by Monday at noon for most facilities **Key tasks:** Patient data are first captured in the OPD register. If a malaria case is suspected, the patient is tested, and patient data are entered into national malaria case register. If tested case is positive, notification is sent through mobile phone, which triggers MCN/CBS case follow-up at council level. Individual malaria case data are aggregated weekly using the MEEDS data collection booklet. Each week, by Monday at noon, health facilities send aggregated data over mobile phone using USSD. | **Reporting format/platform:** Paper forms for recording and cell phones for reporting **Managed by:** Health facility member in charge or staff designated with reporting **Reported to:** CMSO; ZAMEP through SELCOM server **Reporting frequency:** Within 24 hours of case diagnosis **Key tasks:** Individual patient data are first captured in the OPD register. If a malaria case is suspected, the patient is tested, and patient data are entered into national malaria case register. If tested case is positive, notification is sent through mobile phone, which triggers MCN/CBS case follow-up at the council level. CMSO and the national level receive notification of malaria cases. | **Reporting format/platform:** SMS/phone for immediate, DHIS2 for weekly report **Managed by:** Health facility staff **Reported to:** Council IDSR response team **Reporting frequency:** Weekly or immediate **Key tasks:** Health facility staff capture standard case definitions to detect and record priority diseases or conditions in the IDSR form in DHIS2. Report case-based information for immediate notifiable disease over SMS or phone; report summary data to council level weekly using DHIS2. Malaria is a weekly—not an immediate—notifiable disease. |

| | | | The aggregated malaria data are sent to a private MEEDS database. | | |
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**Table 1: Key Malaria Indicators by System**

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

| Indicators | System | | | |
|---|---|---|---|---|
| | **RHIS** | **MEEDS** | **MCN/CBS** | **e-IDSR** |
| **Number of suspected malaria cases** | | | | |
| Suspect/fever cases | N | N | N | N |
| Tested (diagnostically) | Y | Y | Y | Y |
| Diagnostically confirmed (positive) | Y | Y | Y | Y |
| Clinical/presumed/unconfirmed | N | N | N | N |
| Outpatient/inpatient | Y/Y | Y/N | N/N | Y/Y |
| Uncomplicated/severe | Y/Y | Y/N | N/N | Y/Y |
| Age categories (e.g., <5, 5+)/Sex disaggregation (M, F) | Y/Y | Y/N | Y/Y | Y/Y |
| Pregnant women | Y | N | N | Y |
| **Number of malaria deaths** | | | | |
| Age categories (e.g., <5, 5+)/Sex disaggregation (M, F) | Y/Y | N/N | N/N | Y/Y |
| Pregnant women | Y | N | N | Y |
| **Commodities** (Availability or stockout/Consumption) | | | | |
| RDT | N/Y | N | N | N/Y |
| ACT (AL, ASAQ) | N/Y | N | N | N/Y |
| Severe malaria treatment | N/N | N | N | N/N |
| SP | N/N | N | N | N/N |
| **IPTP 1/2/3(+)** | N/A* | N/A* | N/A* | N/A* |
| **Completeness of reporting** | Y | Y | N | Y |
| *IPTp is not a treatment policy used in Zanzibar | | | | |

**Data Quality Activities**

**Routine data quality reviews and audits:** ZAMEP conducts biannual routine data quality assessments (RDQAs) in health facilities. The MOH HMIS Unit also conducts biannual HMIS national reviews with council teams. At specific facilities identified with data quality and performance issues, a Malaria Service and Data Quality Improvement (MSDQI) assessment is done. The MSDQI is similar to a RDQA of malaria services and data quality, and it resolves issues through the development of an action plan.

**Review meetings:** Each week, ZAMEP staff meet to internally review MEEDS data. Council teams meet weekly to discuss MEEDS malaria data and cases. ZAMEP and council teams have quarterly data review meetings together that are focused on MEEDS data.

In addition, the President's Malaria Initiative is supporting quarterly data feedback meetings between ZAMEP and health facility staff to review their performance data. This has resulted in improved timeliness and completeness of reporting. The Global Fund also grades health facilities and CMSOs based on their reporting timeliness, completeness, and data accuracy across MEEDS and MCN/CBS as part of its funding mechanism.

**Supervision:** As part of its supportive supervision efforts, ZAMEP conducts biannual RDQAs of 30 facilities—both private and public. ZAMEP staff visit the health facilities and cross-check the data from DHIS2, MEEDS, and MCN/CBS databases with data captured in register forms at the health facility.

**Monthly or quarterly malaria bulletin:** The HMIS Unit releases an annual health bulletin. The last printed HMIS bulletin is from 2016. Quarterly surveillance reports of MEEDS data are available. The last quarterly surveillance report was printed in 2019. Bulletins and reports must be requested because they are not available online.

**Data availability:** DHIS2 is available to national, council, and health facility staff. DHIS2 data become available to national and council staff after they are directly input by health facility staff. Council staff provide data validation of platform data, and health facility staff are typically responsible for uploading data directly into DHIS2. Partners working with DHIS2 also have access to the platform. National-level staff have access to the MEEDS database, and council staff have view-only access. MCN/CBS data are available to national staff with login credentials through the Coconut surveillance platform.

**Data use:** DHIS2, MEEDS, and MCN/CBS are used for national-level decision making in strategic development, data reports, case forecasting, and targeting of malaria interventions. HMIS data also help ZAMEP with some reporting and quantification of malaria commodities. ZAMEP completed the mid-term malaria program review in 2020.

**Additional Context**

Health service delivery in Zanzibar is implemented through public and private health facilities. All health facilities are registered to report into DHIS2, and ZAMEP has identified data quality issues in DHIS2. Given these issues, ZAMEP relies heavily on MEEDS and MCN/CBS to target and address malaria issues.

Currently, RHIS and IDSR, and MEEDS and MCN/CBS have high levels of completeness and timeliness. MEEDS and MCN/CBS enable Zanzibar's malaria surveillance and reactive case detection through timely case follow-up investigations. ZAMEP partners with SELCOM to house the MEEDS data and with RTI International to house the MCN/CBS data.

MEEDS is a passive, facility-based surveillance system used in parallel with the DHIS2. Much of the information captured in MEEDS is also captured in the RHIS. Although the RHIS is able to capture a broader amount of information than MEEDS (such as inpatient cases and malaria mortality information), it struggles with health facility coverage, data completeness, and timeliness. In the future, after the RHIS is more resilient, there are plans to drop MEEDS and rely solely on the RHIS. Doing so will address issues with parallel reporting overload and the costliness of MEEDS server maintenance.

Zanzibar implemented the MCN/CBS system in 2012. Using the Coconut surveillance platform, MCN/CBS is an active malaria case notification and follow-up system supported by ZAMEP and RTI International. MCN/CBS requires CMSO follow-up investigation for every confirmed malaria case. This involves returning to the health facility, reviewing the patient's contact information in the national malaria case register, driving to the patient's household, testing of all household members, assessing the status of preventive measures, including long-lasting insecticide-treated nets, and assessing local risk-factors. Investigation follow-up is tracked in the Coconut surveillance platform at the national level. The system had a software and logistic setback in 2017 but is currently being used again.

**Challenges**: Zanzibar faces challenges related to health staff reporting overload, Internet bandwidth, MEEDS server costliness, and computer/platform literacy. In addition, the RHIS and IDSR currently struggle with completeness and timeliness of reporting. Although many public facilities have the laptops needed to upload data into DHIS2, the availability of these is not universal. Many public facilities are given laptops, but there is no replacement strategy in place for when laptops are stolen or destroyed. Private facilities, although expected to report into DHIS2, are not given laptops through the government, which often leads to reporting issues.

Another challenge is that council data managers from the MOH HMIS team must proactively monitor health facilities that are not reporting and follow up with them. Data managers could benefit greatly from training in data management and analytical capacity.