GUINEA 2021

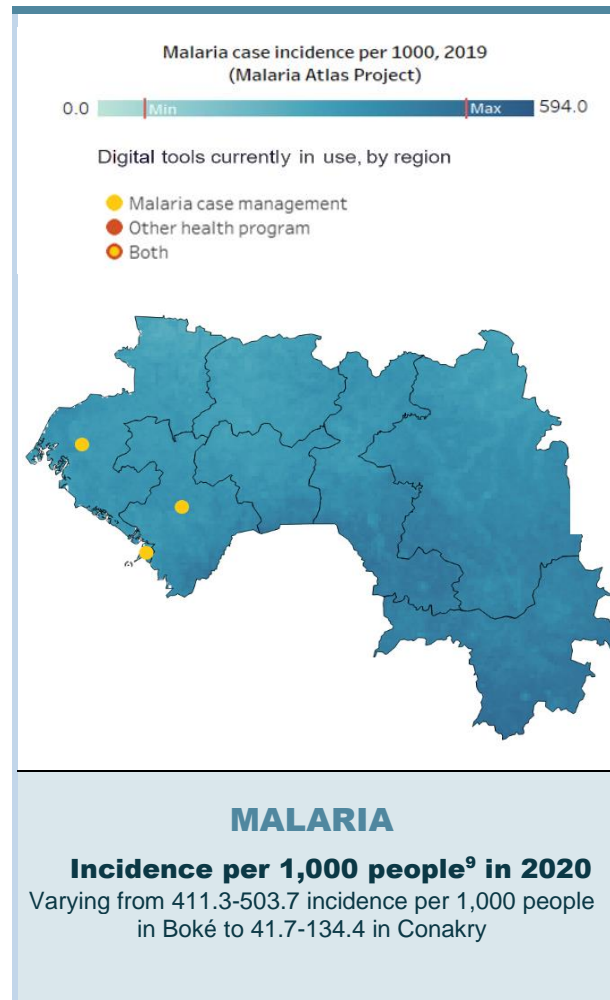# Executive Summary

Malaria is one of the leading causes of mortality in Guinea, with a strong seasonal upsurge during the rainy season. [1, 2, 3] The 2018-2022 National Malaria Strategic Plan aims to reduce mortality by 75% relative to 2016 and to achieve a key objective of correctly managing 90% of malaria cases.[4]

The National Malaria Control Program (NMCP), with the support of bi- and multi-lateral agencies, has focused on improving community-level screening, testing, and treatment by training community health workers (CHWs) and their supervisors.[5, 6]

Digital health overall is expanding nationwide, with diversified investments and funding streams dedicated to malaria and other communicable diseases. Guinea is drafting a national digital health strategy, assembling a digital health coordination group, and piloting digital tools for collecting data at the community level, with the aim of creating a roadmap for digital health in the country.

Investments should ensure that digital health interventions align with national priorities. To strengthen sustainability, Guinea should scale digital health policy documents (including enterprise architecture and governance), strengthen supervision and data use capacity, develop a user/system readiness plan, make subsystems interoperable, and regularly provide incentives to CHWs at the community level.

Malaria case incidence per 1000, 2019
(Malaria Atlas Project)

0.0 | Min | Max | 594.0

Digital tools currently in use, by region

- Malaria case management
- Other health program
- Both

MALARIA

Incidence per 1,000 people[9] in 2020
Varying from 411.3-503.7 incidence per 1,000 people in Boké to 41.7-134.4 in Conakry

PEOPLE

Community Health Worker (CHW)

3,217 CHWs[7]
Actual ratio: 2.5 per 10,000 people;
Desired ratio: 1 per 650 people[10]

GOVERNANCE

National Digital Health Strategy

In process

SYSTEMS

Digital Health Index[8]

SCORE: 1

Recommended Actions

PEOPLE
Community health workers and other decision-makers

Develop tools to strengthen the technical capacity of health cadres to oversee CHW activities

The National Directorate of Community Health and Traditional Medicine (DNSCMT) and NMCP should develop standardized supervision checklists/grids, data visualization tools, and quality checklists to oversee CHW activities. These actions will improve the quality of primary care delivered and of data reported.

Support training on the use of data to improve malaria surveillance

The NMCP and DNSCMT should deploy digital systems and job aids to support data use and validation training at the local, district, and national levels to enhance malaria surveillance. To avoid duplication of effort and funding and increase awareness among Ministry of Health (MOH) departments, all digital health activities should be coordinated by the Bureau of Strategy and Development and the National Health Information System. This will improve data quality and use over time and will enable data-driven decision-making.

Develop a comprehensive digital health training plan for CHW

As pilot projects progress and data collection tools are scaled up, the Digital Health Coordination Group, NMCP, and DNSCMT should implement digital health training for

GOVERNANCE
Strategies and policies

Support the national digital health strategy by promoting malaria activities at all levels of the health pyramid

The NMCP should develop a costed national digital health strategy that will ultimately improve community-based surveillance of malaria by providing CHW with surveillance tools adapted to the context of Guinea. The NMCP should also participate in the strategy's implementation and governance for malaria activities at all levels: central, regional, district, health facility, and community.

Create a coordinating body to oversee digital health implementation across the country

Create a digital health coordinating body and support its mandate to provide leadership for implementing digital health projects and strategies across the country.

Develop a work plan to coordinate community digital health activities, including malaria surveillance

In the short term, the digital health coordinating body, NMCP, and DNSCMT should identify and prioritize key activities to improve malaria surveillance. A detailed work plan including members/ affiliations, roles, responsibilities, meeting requirements,

SYSTEMS
Processes and digital tools

Create and scale-up community-level digital health pilot projects

The digital health coordinating body, NMCP, and DNSCMT should provide technical support to create and scale up digital health tools, adapting them to the country context. They should review resources available (e.g., standard operating procedures, work plans, training materials, reports) and adapt them while upgrading the entire system from paper to digital reporting. They should also verify real-time operability and system (DHIS2, eLMIS, and iHRIS) interoperability through benchmark tests and automatic extraction of indicator data from health records to build dashboards and drive data-informed decision-making.

Implement policies that promote data use at all levels

Support case management and functionalities of digital tools. Supplement pilot activities with operational research studies and evaluations to measure impacts on data quality and inform future plans for scale.

Scale digital tools and promote their interoperability at all levels of the health system

Identify approaches to complement the MOH and partners in making the DHIS2, eLMIS, and iHRIS interoperable. Each subsystem should be adapted to recognize individual CHWs and the catchment areas they

CHW at the community level, with the potential to scale this training to prefectures and districts across the country to strengthen health cadre capacities.

Strengthen the digital health capacity of providers at all levels

Develop a plan integrating routine digital health training (monthly or annually based on need) with standard training programs for CHWs. Additionally, extend this training at the regional and district level, and develop structures and processes to support the learning management system. Examine potential opportunities for enrolling MOH into the Digital Square-supported Digital Health Applied Leadership Program, which aims to build the skills of central level actors in designing, developing, and leading digital health interventions.

Support workforce job structures, descriptions, and plans for capacity building

The MOH should implement a workforce policy covering job structures, descriptions, plans for capacity strengthening, digital literacy expectations, and incentives for digital adoption. The workplan should clearly outline a plan to build skills in digital literacy at the leadership level.

schedule, budget, and implementation should be executed in the long term.

Develop guiding documents and regulatory frameworks for malaria surveillance

The digital health coordinating body and MOH should develop guiding documents (national electronic registers, procedure manuals for health facility registers, procedure manuals for developing Information and Communication Technologies (ICT), metadata dictionary, mobile device management, and national digital health architecture) to enhance data collection and malaria surveillance at all levels.
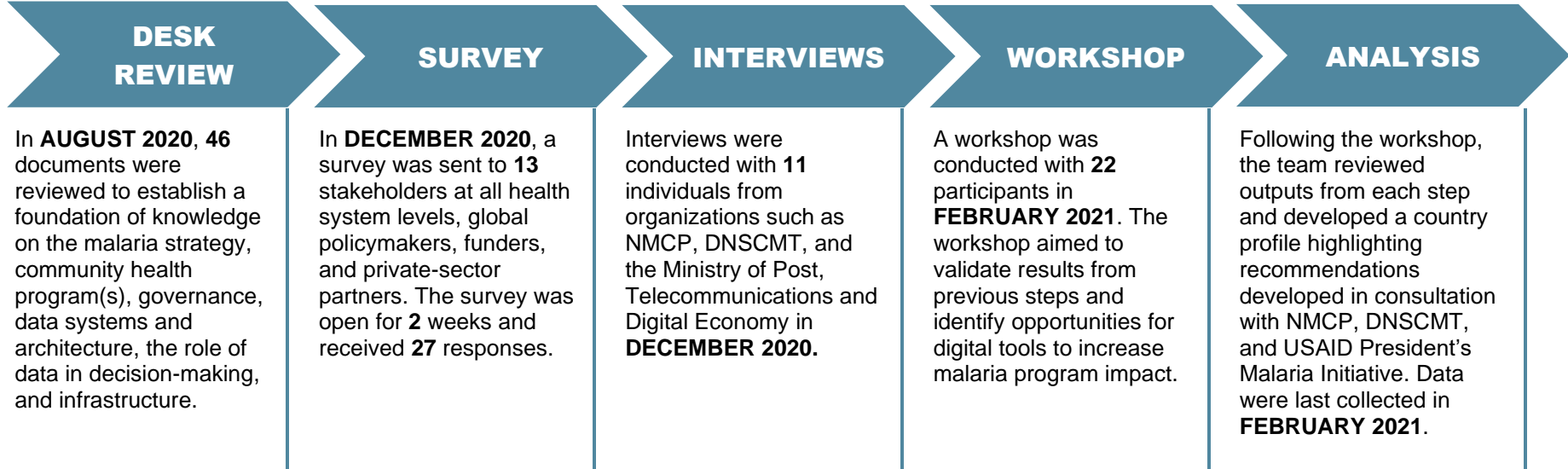
represent, using a CHW registry as the sole source of data on CHWs.

Develop enterprise architecture for malaria surveillance

Adopt an enterprise architecture for the health sector, including an interoperability layer, a health information exchange platform, or guidelines for standards and interoperability. Prioritize the alignment of data collection processes to correct gaps.

Methodology

The information collected to develop this profile comes from a desk review conducted in August 2020, key informant interviews of partners and stakeholders in December 2020, and an advisory workshop in February 2021. Findings from these activities were validated during the workshop and used to develop the recommendations.

DESK REVIEW	SURVEY	INTERVIEWS	WORKSHOP	ANALYSIS
In **AUGUST 2020**, **46** documents were reviewed to establish a foundation of knowledge on the malaria strategy, community health program(s), governance, data systems and architecture, the role of data in decision-making, and infrastructure.	In **DECEMBER 2020**, a survey was sent to **13** stakeholders at all health system levels, global policymakers, funders, and private-sector partners. The survey was open for **2** weeks and received **27** responses.	Interviews were conducted with **11** individuals from organizations such as NMCP, DNSCMT, and the Ministry of Post, Telecommunications and Digital Economy in **DECEMBER 2020.**	A workshop was conducted with **22** participants in **FEBRUARY 2021**. The workshop aimed to validate results from previous steps and identify opportunities for digital tools to increase malaria program impact.	Following the workshop, the team reviewed outputs from each step and developed a country profile highlighting recommendations developed in consultation with NMCP, DNSCMT, and USAID President's Malaria Initiative. Data were last collected in **FEBRUARY 2021**.

Information collected through the methods described above was categorized according to key components within three domains: people, governance, and systems. These domains and their underlying components were informed by an existing maturity model and adapted to incorporate malaria-specific content. The components include personnel, training, technical support ("People"); policies, strategies and governance structures, and their implementation ("Governance"); and data flow, digital tool structures, functionalities, and use ("Systems"). Together, these components describe the *desired state* for CHW use of digital tools for malaria case management, a state in which community health programs can leverage digital tools to generate and use data that improve malaria programming with the ultimate aim to decrease the local malaria burden.

PEOPLE

People highlights the community health workers, supervisors, information technology support staff, and other decision-makers that contribute to the effective use of digital tools and data in malaria community health programs.

GOVERNANCE

Governance describes the national strategies and policies that provide the framework for community health programs' use of digital tools for malaria and their implementation.

SYSTEMS

Systems describe the processes and digital tools that enable community health platforms to effectively use digital technology and data to strengthen malaria and other health programs.

People

Guinea's cadres of community health workers (CHWs) include *agents de santé communautaires* (ASCs) and *relais communautaires* (RECOs).[10] Each CHW assigned to a health facility provides a preventive and curative services package including diagnosis and treatment for uncomplicated malaria, pre-referral treatment for severe cases with rectal artesunate, and proactive detection of cases.[10] CHWs are generally responsible for information, education, and communication related to malaria prevention, though some may provide diagnosis and treatment. An individual ASC is generally responsible for overseeing ten RECOs. The health center also organizes joint supervision with local administrative authorities to ensure that clinical activities organized by CHWs comply with national guidelines for malaria prevention and control. Common challenges experienced by CHWs include shortages of commodities and the lack of regular supervision by the health centers.[7]

3,217 Community health workers in country	**Compensation Policy:** VOLUNTEER*
272 Providing malaria community case management	**Compensation Policy:** VOLUNTEER*

CHW cadres are currently being scaled up across the country. Although there are currently 3,217 active CHWs (272 ASCs and 2,945 RECOs), the MOH aims to recruit up to 1,320 ASCs and 17,000 RECOs by 2022. This recruitment process will reduce the gap of CHW and help the country reach the objective of having 1 ASC per 650 residents in rural areas and 1 ASC per 1,000 residents in urban areas.[7, 10] *The MOH has made plans for CHWs to be paid a monthly incentive ($45/month) directly by the MOH, but the implementation timeline is uncertain at this point and no payments have been made to date. Domestic and international partners and agencies continue to finance community health programs.[4]

Community health worker digital readiness

CHWs are formally trained in primary health care by an accredited institution. The community selects CHWs based on their standing, ability to speak the local language, and read and write in French.[10] CHWs initially participate in four weeks of training to prepare for their duties.[10] Training on digital tools is generally not provided to CHWs or staff at health centers. At the district and region levels, partners offer training on the national health management information system (HMIS) called the District Health Information System 2 (DHIS2) and the electronic logistics management information system (eLMIS).

In 2021, the MOH plans to implement a Moodle-based learning management system to strengthen digital training for community leaders and health personnel, including CHWs, throughout Guinea. Enabel, a Belgian technical cooperation, is funding the scale-up of the Moodle platform. Once in place, the Institute for the Development of Health Personnel will be responsible for developing content for the learning modules. The Information System Modernization Service will be responsible for configuring the learning management system to support modules in various formats (e.g., Word, PowerPoint).

For digital health projects, airtime credits and other costs are generally covered by partners at all levels.

Data-driven decisions at each level of the health system

In Guinea, data are collected on paper at the community level by CHWs and sent to the health facility. Data are compiled and entered into DHIS2 at most health facilities (93%); if the health facility does not have access to DHIS2 directly, CHW and health facility data submitted to the health district on paper. The health districts enter remaining data into DHIS2, perform analyses, and prepare monthly reports submitted to the national level and feedback submitted to the health district and health facility levels. The national level and implementing partners guide Guinea's health policy by consolidating these data and reports, analyzing key health indicators and system weaknesses, and sharing monthly findings with key stakeholders across the country.

Data are routinely reported to the DHIS2 and the integrated disease surveillance and response system. However, they are different systems, which has resulted in incomplete datasets for disease surveillance and response and contributed to a lack of coordinated decision-making among health system leaders. To improve how malaria data are collected, the NMCP and its implementing partners perform monthly and quarterly data quality visits. Here, they analyze aggregate data at all levels (health post, health center, referral hospital, prefecture, region, and national), report findings, troubleshoot data collection and flow problems, and investigate changes in malaria indicators to adapt malaria intervention efforts.

The contribution of the NMCP to improving the health system's performance and data collection process is reflected in its four pillars: continuous training and motivation of health service providers, mobilization of sufficient financial resources to provide services at all levels, monitoring of malaria reporting, and enhancing collaboration between stakeholders at different levels to facilitate data collection and processes.[11]

NATIONAL LEVEL	At the national level, data are used to define and orient malaria policies and strategies, plan and monitor malaria programs and projects, and draft monthly and annual malaria bulletins. Decisions to target interventions (e.g., malaria supply chain, seasonal malaria chemoprevention, and routine and mass malaria bed net distributions) are generally taken at the central level. Data are also compiled, consolidated, and disseminated to all stakeholders supporting the malaria program across the country.
REGIONAL LEVEL	At the regional level, malaria data are used for monitoring health services, preparing meetings (e.g., monthly and regional health technical committee meetings), and active surveillance of malaria and other endemic diseases. For instance, at the technical committee meetings, malaria and other health indicators and health worker performance are reviewed and data are used to verify the completion of predefined objectives.
PREFECTURE LEVEL	At the prefecture level, the medical director reviews and validates the data transmitted via DHIS2. Malaria and other health data are used to monitor the inventory of commodities and medicines, manage resources, monitor malaria and health service delivery, prepare meetings (e.g., monthly meetings, prefecture health technical committee), and plan activities (monthly, quarterly, and annually). Data are also used at this level for active surveillance for malaria and other diseases and conditions of concern. Prefectures organize technical committee meetings where malaria and other health indicators and the performance of health workers are evaluated, and data are used to verify the completion of predefined objectives.
HEALTH FACILITY LEVEL	The primary responsibility of the health center is to aggregate community-level health reports, enter data into DHIS2, and transmit to the prefecture. At this level, data are used to monitor how well the data in eLMIS reflect the physical inventory of commodities and medicines (including making orders of medicines), drafting their monthly report, and active surveillance of notifiable diseases including malaria. Data cleaning, validation, and routine data quality assessments are conducted with district health office staff, as well as the central level MOH eLMIS team. Heads of health centers assess ASC performance and conduct monthly data quality reviews, including promptness and completeness of data collected from CHWs, and send summary reports to prefecture-level data managers.[3]
COMMUNITY LEVEL	Data flow begins when health facility ASCs and their associated RECOs collect data in the community related to the active surveillance of malaria and other notifiable diseases and report them on paper-based forms to the health center. Besides disease surveillance, CHWs fill out a monthly checklist of services provided to the community. Supervisors assess CHW performance based on the completeness and timeliness of the monthly checklist and data collected at the end of each month.[3]

Governance

	DIGITAL	COMMUNITY HEALTH	MALARIA
Name	National Digital Health Strategy	Community Health Strategic Plan [*Plan Stratégique de Santé Communautaire*]	National Malaria Strategic Plan [*Plan Stratégique National de Lutte Contre le Paludisme*]
Current strategy dates	In Progress (planned dates 2020-2024)	2018–2022	2018–2022
Coordinating body	Bureau of Strategy and Development [*Bureau de Stratégie et de Développement*]	National Directorate of Community Health and Traditional Medicine [*La Direction Nationale de la Santé Communautaire et de la Médecine Traditionnelle* (*DNSCMT*)]	National Malaria Control Program (NMCP) [*Programme Lutte Contre le Paludisme*]
Funding strategy	No (WHO and GIZ financed the drafting and validation of the digital health strategy)	Yes	Yes

The MOH is responsible for overseeing both the DNSCMT and the NMCP. With the goal of managing 90% of malaria cases (objective 2), the NMCP emphasizes community-level diagnosis and treatment by expanding the number of CHWs, strengthening CHW incentives, reinforcing CHW capacity, improving the supply of medicines and commodities, and reinforcing monitoring of community activities.[12] Likewise, the Community Health Strategic Plan includes malaria case management in its integrated package of services.[2] Neither strategic plan includes a plan to adopt digital approaches or interventions.

At the MOH, the Information System Modernization Service oversees digital activities. Although there is not a current digital health strategy in place, the MOH released a plan in March 2020 for the development of a national digital health strategy that covers 2020–2024, though it does not include an estimate of costs.[13] According to the plan, the MOH intends to solicit the support of a national multisectoral technical team (with international actors) and to develop the strategy in four phases: preparation, drafting, technical validation, and dissemination. To align the strategic plan to the needs of Guinea, WHO conducted an assessment to capture perceptions on digital health among health workers, users, private-sector actors, academic-sector actors, and technical and financial partners.[14] The development of the digital health strategy represents an opportunity for the NMCP and *DNSCMT* to provide input to and advocate for the integration of community health and malaria priorities in the digital health strategy. Furthermore, funding from different COVID-19 response efforts (e.g., COVAX, COVID-19 Response Mechanism, and American Rescue Plan Act of 2021) include financial support for supplies and technical assistance for national digital efforts. All COVID-19 digitization efforts will be integrated into the national digital health strategy to strengthen the digital health architecture, enhance disease surveillance (for malaria, outbreaks, and other communicable diseases), and expand Digital Square's footprint in Guinea.

The MOH also released a plan for the development of a Digital Health Community Group. This group will be responsible for maintaining the visibility and harmonization of digital health interventions, defining strategic approaches and ensuring their alignment with the technical document development and validation, ensuring digital health activitiy alignment with the National Health Development Plan 2015–2024, and management of planning meetings.[8]

GOVERNANCE
Policies define digital health and health data governance roles, responsibilities, and structures.

Policies governing digital health have not yet been established in Guinea. The digital health strategy is under development, and the digital health coordinating group is being established. Although formal roles, responsibilities, and structure have not yet been defined, efforts to digitize the health system for data collection and transmission are underway, led by the Ministry of Health, WHO, and GIZ partners.

DATA MANAGEMENT
Policies provide specifications for data access, privacy, security, and confidentiality and outline stipulations for data sharing.

In Guinea, data protection and privacy are regulated by a cybersecurity and personal data protection law.[13] Guidelines on collecting, transmitting, analyzing, and interpreting health data are provided in the National Health Information System's Management Procedure Manual, which serves as the primary document concerning data governance.[8]

STANDARDS AND INTEROPERABILITY
Policies describe an enterprise architecture, normative standards—such as health information standards—and digital identity.

Guinea has not yet adopted an enterprise architecture for the health sector, an interoperability layer, a health information exchange platform, or guidelines for standards and interoperability.

INFRASTRUCTURE
Policies define data hosting and storage (e.g., local or cloud), mobile device management, and telecommunications access.

The telecommunications sector is overseen by the Ministry of Post, Telecommunications, and Digital Economy and is regulated by the Regulatory Authority on Post and Telecommunications.[13] It is not clear if these policies define data hosting, storage, or mobile device management.

WORKFORCE
Policies describe workforce job structures and descriptions, plans for training, digital literacy expectations, and incentives for digital adoption.

It is unclear whether Guinea has implemented a workforce policy covering job structures and descriptions, plans for capacity strengthening, digital literacy expectations, and incentives for digital adoption. The responsibilities and incentives for CHWs are defined in the Community Health Strategic Plan Harmonized Implementation Guide. This guide does not mention digital literacy requirements or incentives for digital adoption.[10]
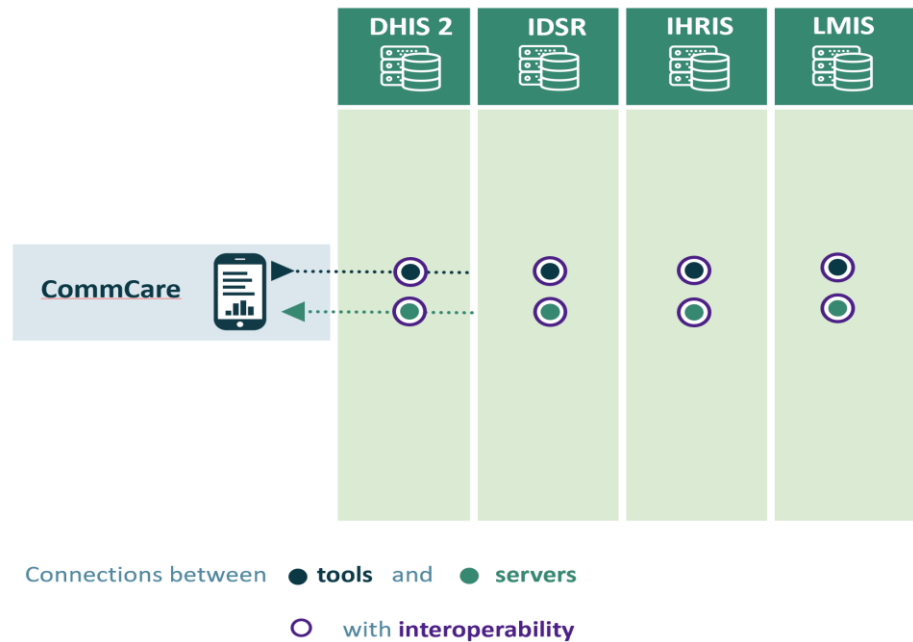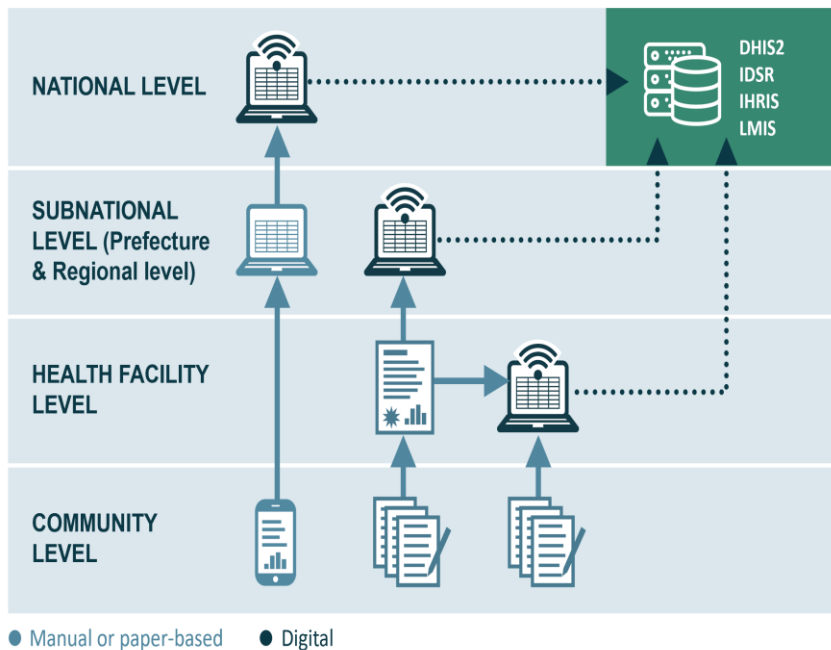
Systems

Data flow

In Guinea, health data are collected on paper at the community level by CHWs and sent to the health facility. Data are entered into DHIS2 at most health centers; if the health center does not have access to DHIS2 directly (7%), processed CHW and health center data are submitted to the health district on paper. Some health facilities currently enter data directly into DHIS2 and eLMIS using smart devices (figure below, left panel). The health districts enter remaining data into DHIS2 and prepare monthly reports submitted to the national level and feedback submitted to the health district and health center levels. The national level and implementing partners share monthly findings with key stakeholders across the country.[10]

The MOH selected CommCare to support integrated Community Case Management (iCCM) due to its capacity to aggregate and deliver data directly to DHIS2 (figure below, right panel). With support from Catholic Relief Services (CRS) and Dimagi, the CommCare application was adapted for use in a tablet-based pilot project in the Kindia, Farranah, and Nzerekore regions. The aim of the pilot is to test CHW use of CommCare to digitally report routine data and receive feedback from the health center to support data-based decision-making.[10] The MOH plans to replace the use of CHW paper reporting tools by scaling the CommCare application across the country (figure below, left panel). The MOH should leverage ongoing efforts to interoperationalize integrated human resources information system (iHRIS) and eLMIS with DHIS2 as they work to replace the use of CHW paper reporting tools by scaling the CommCare application across the country (figure below, left panel).

Implementing partners support the maintenance of damaged devices and equipment in some districts where data collection is carried out using digital tools. For instance, the Bureau of Strategy and Development is currently establishing a maintenance plan for HMIS equipment to allow monitoring of hardware and planning for preventive and corrective maintenance.
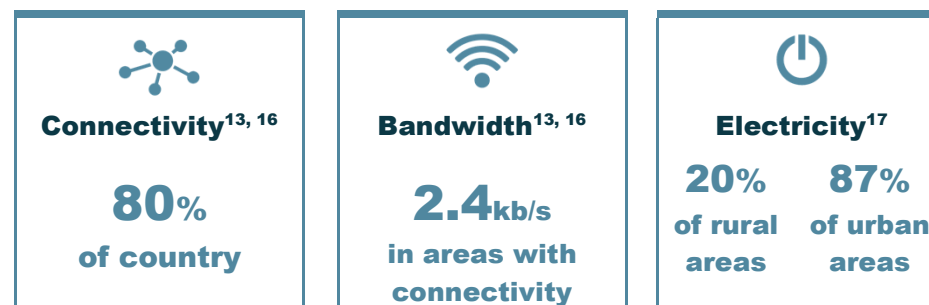
Concerning the integrated disease surveillance response system, the MOH collaborates with international partners to improve compliance with the International Health Regulations and work toward the Global Health Security Agenda goals, including enhanced case and community-based disease surveillance.[15] Data analysis activities are minimal at the peripheral levels and progressively more robust at the prefectural and central levels. Given the importance of the surveillance response system, the MOH is conducting additional training on DHIS2 to improve surveillance data quality and use.

NATIONAL LEVEL

SUBNATIONAL LEVEL (Prefecture & Regional level)

HEALTH FACILITY LEVEL

COMMUNITY LEVEL

DHIS2
IDSR
IHRIS
LMIS

● Manual or paper-based   ● Digital

DHIS 2   IDSR   IHRIS   LMIS

CommCare

Connections between ● tools and ● servers

○ with **interoperability**

DHIS2 is the only HMIS platform used by the MOH nationally. In pilot activities, the CommCare application has proven interoperable with DHIS2. Other tools such as RapidPro have been interoperable with DHIS2, but are no longer used in Guinea.

Digitally enabling infrastructure

Enabling infrastructure for ICT is under development in Guinea. Rural areas lack access to stable sources of electricity, but health structures can access power through utilities, solar panels, and generators. A 4,500km fiber optic backbone now under construction will cover all regions' capital cities and prefectures.[18] Mobile network coverage is high, reaching 89.7% of all districts, but 4G services are only available in regional capitol cities.[19] The MOH called for strengthening enabling infrastructure and its connections between the Central Pharmacy of Guinea, the national HIV/AIDS program, and the regional health offices.[14]

Connectivity[13, 16]

80%
of country

Bandwidth[13, 16]

2.4kb/s
in areas with connectivity

Electricity[17]

20%
of rural areas

87%
of urban areas

Digital health tools in use and functionality

All districts received laptops in 2016 with post-Ebola response funds, however they are increasingly outdated and unreliable.

CRS has implemented two projects that demonstrate the functionality of Dimagi's CommCare application in the Guinean context. In one pilot project to increase the coverage and quality of services for children under five, the CommCare application was adapted for use on tablets in the Kindia, Farranah, and Nzerekore regions. In another instance, CommCare was used to distribute medication in 20 districts to support seasonal malaria prevention efforts.

RTI International's StopPalu+ project used the RapidPro application to remind pregnant women of their antenatal care appointments at the health facility level in the Boké, Conakry, and Kindia regions. Pregnant women with a mobile phone who attended one appointment were enrolled in a quasi-experimental evaluation; those in the pilot group received an SMS reminder of their upcoming appointments.[15] Though RapidPro is no longer in use, this pilot project demonstrated the feasibility of using SMS platforms to communicate directly with program beneficiaries in Guinea.

USE CASE(S)	CommCare
Providing malaria community case management	■
Tracking malaria proactive and reactive case detection	■
Tracking malaria screening with referral	■
Transmitting messages to community on malaria	▪
Training health workers	■
Tracking routine LLIN distribution during ANC or EPI visits	▪

■ = Current use   ▪ = Possible, but not currently in use   ☐ = Does not meet use case

CASE MANAGEMENT FUNCTIONALITIES	CommCare
Aggregate case reporting and analytics Tool collects aggregated case data and has data analytic functions in tool or online	■
Individual case entry and analytics (*important in low-burden or elimination settings*) Tool collects individual case data and has data analytic functions in tool or online	■
Case geolocation (important in low-burden or elimination settings) Tool allows collection or use of geospatial data for individual cases	■
Interoperability with HMIS Tool sends information to the official national health information system	■
Offline capability Tool functions, at least partially, offline	■

MANAGEMENT & SUPERVISION FUNCTIONALITIES	CommCare
CHW identification Tool uniquely identifies CHW	■
CHW catchment location Tool identifies CHW associated position in org unit hierarchy/link to health facility/system	■
CHW performance analytics Tool has analytic functions (data validation, graphs, charts) that support data quality, quality of care, or other performance issues	■
Communication Tool allows two-way communication between peer groups, associated health facilities, or supervisors	■

■ = Current functionality   ■ = Possible, but functionality not currently in use   □ = Does not have functionality

Appendices

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Abbreviations

ASC	*agent de santé communautaire* [community health worker]
CHW(s)	community health worker(s)
COVAX	COVID-19 Vaccines Global Access initiative
CRS	Catholic Relief Services
DHIS2	District Health Information System 2
DNSCMT	*Direction Nationale de la Santé Communautaire et de la Médecine Traditionnelle* [National Directorate of Community Health and Traditional Medicine]
eLMIS	electronic logistics management information system
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit* [German Agency for International Cooperation]
ICT	information and communication technologies
HMIS	health management information system
iHRIS	integrated human resources information system
MOH	Ministry of Health
NMCP	National Malaria Control Program
NSPMC	National Strategic Plan for Malaria Control 2020-2023
PMI	U.S. President's Malaria Initiative
RECO(s)	*relais communautaires*
USAID	United States Agency for International Development
WHO	World Health Organization

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Facinet Yattara	National Directorate of Community Health

Community digital health tools

Name of Tool	Type of Digital Health Intervention	Implementer (Funder)	Scale	Malaria Use Case
CommCare	**2.1** Client identification and registration **2.2** Client health records **2.5** Health care provider communication **2.6** Referral coordination **2.8** Health care provider training **3.1** Human resource management **4.1** Data collection, management, and use **4.2** Data coding **4.3** Location mapping **4.4** Data exchange and interoperability	CRS Global Fund	Kindia region	Malaria case management Malaria screening with referral Intermittent preventive treatment in pregnancy (IPTp) Malaria active or reactive case detection (visiting communities to find additional cases) Training of health workers
eSIGL (eLMIS)	**2.1** Client identification and registration **2.2** Client health records **2.3** Health care provider decision support **2.10** Laboratory and diagnostics imaging management **3.1** Human resource management **3.2** Supply chain management **3.3** Public health event notification **3.4** Civil registration and vital statistics (CRVS) **3.5** Health financing **3.6** Equipment and asset management **3.7** Facility management **4.1** Data collection, management, and use **4.2** Data coding **4.3** Location mapping **4.4** Data exchange and interoperability	Logistics Management Unit Global Fund CRS Chemonics	National	Malaria case management Routine long-lasting insecticidal net (LLIN) distribution during antenatal care (ANC) or Expanded Programme on Immunization (EPI) visits IPTp
RapidPro	**1.1** Targeted client communication	RTI (USAID)	Kindia, Conakry, Boké	IPTp

Name of Tool	Type of Digital Health Intervention	Implementer (Funder)	Scale	Malaria Use Case
DHIS2	**1.1** Targeted client communication **1.2** Untargeted client communication **1.3** Client to client communication **1.4** Personal health tracking **1.5** Citizen based reporting **1.6** On demand information services to clients **1.7** Client financial transactions **2.1** Client identification and registration **2.2** Client health records **2.3** Health care provider decision support **2.4** Telemedicine **2.5** Health care provider communication **2.6** Referral coordination **2.7** Scheduling and activity planning for health care providers **2.8** Health care provider training **2.9** Prescription and medication management **2.10** Laboratory and diagnostics imaging management **3.1** Human resource management **3.2** Supply chain management **3.3** Public health event notification **3.4** Civil registration and vital statistics (CRVS) **3.5** Health financing **3.6** Equipment and asset management **3.7** Facility management **4.1** Data collection, management, and use **4.2** Data coding **4.3** Location mapping **4.4** Data exchange and interoperability	Ministère de la Santé, Bureau de Stratégie et de Développement, Système National Information Sanitaire (Jhpiego, Banque Mondiale, Fonds Mondiale, USAID, CRS, RTI)	National	Malaria case management Malaria screening with referral Routine LLIN distribution during antenatal care or EPI visits IPTp Malaria active or reactive case detection (visiting communities to find additional cases) Communication/messaging to community on malaria Training of health workers

*Data that come from the survey have not been independently validated aside from tools featured within the profile.

†See Classification of digital health interventions v1.0, World Health Organization, 2018.

Next-generation digital health tool functionalities for malaria case management

CASE MANAGEMENT FUNCTIONALITIES	CommCare
Notifications Tool sends and receives notifications	■
Stock reporting & analytics Tool collects stock data and has analytic functions to support stock and logistics data analysis and decision-making	■
Interoperability with other national health systems Tool sends information to other national systems (iHRIS, LMIS, etc.)	■
Referral coordination Tool allows CHW to notify local health facility of referrals and track them	■
Scheduling & work planning Tool allows CHW to plan and schedule key activities in the community	■

MANAGEMENT & SUPERVISION FUNCTIONALITIES	CommCare
Decision support Tool provides algorithms or checklists to guide CHW service provision	■
Training materials & resources Tool provides access to training materials, policies, or other useful reference documents	■
CHW geolocation Tool allows collection or use of CHW geolocation data for monitoring and planning distribution	■
Supervision Tool can be used by supervisors to assess CHW skills and capacity	■

■ = Current functionality   ■ = Possible, but functionality currently not in use   ☐ = Does not have functionality

Malaria Program Map