CHISU Annual Report

October 2022–September 2023

The Country Health Information Systems and Data Use (CHISU) program is USAID's flagship data and information system project to strengthen host country capacity and leadership to manage and use high-quality health information systems to improve evidence-based decision making.

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Abbreviations

AI	Artificial Intelligence
CHISU	Country Health Information Systems and Data Use
CDC	Centres for Disease Control and Prevention
CDI	Castellum Digital Indonesia
COVID-19	Coronavirus Disease
D2AC	Data to Action Continuum
DEI	Diversity, Equity, and Inclusion
DH&I	Digital Health and Interoperability
DHIS2	District Health Information Software version 2
DHIMS2	District Health Information Management System 2 (Ghana's National Health Management Information System)
DMI	Digital Maturity Index
DQA	Data Quality Assessment
DQR	Data Quality Review
DRC	Democratic Republic of the Congo
DS	Directorate of Statistics
DTO	Digital Transformation Office
EMR	Electronic Medical Record
ENDOS-BF	Burkina Faso's National Health Management Information System
ESC	Eastern and Southern Caribbean
ESAVI	Adverse Health Effect Reporting Information System
FY	Fiscal Year
GHS	Ghana Health Service
GHSA	Global Health Security Agenda
HDC	Health Data Collaborative
HIS	Health Information System
HMIS	Health Management Information System
HPHC	High Performing Health Care
ICT	Information Communication Technology
IPH	Institute of Public Health

IPTp/IPTp 3	Intermittent Preventive Treatment of Malaria for Pregnant Women / 3 doses
IT	Information Technology
M&E	Monitoring and Evaluation
MIP	Malaria In Pregnancy
MIS	Management Information System
MNH	Maternal and Newborn Health
MOH	Ministry of Health
mRDQA	Malaria Routine Data Quality Assessment
MSPP/UEP	Ministry of Public Health and Population/Unit of Evaluation and Programming
NMCP	National Malaria Control Program
OpenHIM	Open Health Information Mediator
OVC	Orphans and Vulnerable Children
PAHO	Pan American Health Organization
PMI	U.S. President's Malaria Initiative
Pusdatin	*Pusat Data dan Teknologi Informasi* (Indonesia's Center for Data and Information Technology)
RHIS	Routine Health Information System
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
SISNU	Haiti's National Health Management Information System
SME	Surveillance Monitoring and Evaluation
SNOMED CT	Systematized Nomenclature of Medicine Clinical Terms
SO	Strategic Objective
SOCI	Stages of Continuous Improvement
SOP	Standard Operating Procedure
SORMAS	Surveillance Outbreak Response Management & Analysis System
TB	Tuberculosis
TWG	Technical Working Group
USAID	United States Agency for International Development
WHO	World Health Organization
XB	Cross-Bureau

CHISU HIGHLIGHTS | Oct 2022 Sept 2023

HOW CHISU HAS GROWN
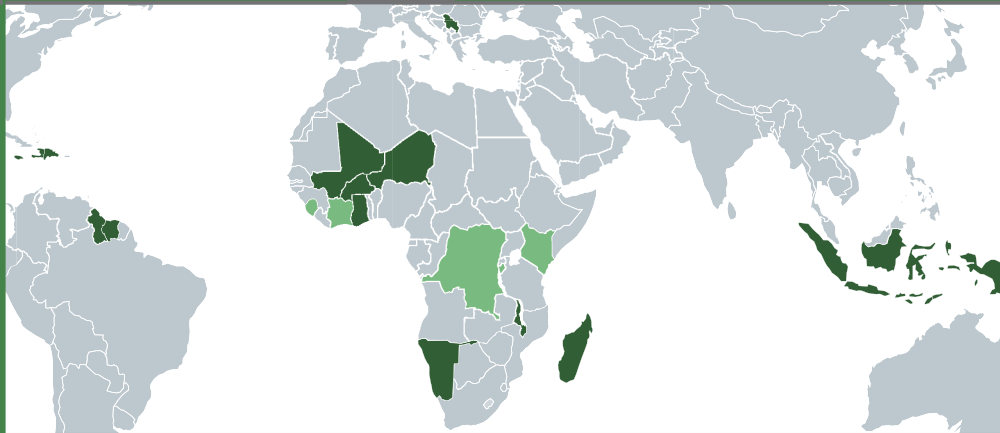
= established before Oct 2022   = newly engaged

The **Country Health Information Systems and Data Use (CHISU)** program's growth over the past year has been remarkable, having **expanded from nine countries and regions at the beginning of the year to 17 at the end of the year.** CHISU was engaged in 10 global technical activities at the beginning of the year, and 26 at the end of the year.

This growth shows that there is a greater appreciation for focusing on leadership and governance in health information system (HIS) strengthening, that equipment and infrastructure are essential for a functioning HIS, and that data demand drives system development and deployment. Collaboration is an integral part of the CHISU approach.

While there has been significant progress in different settings, further investment and continued technical assistance will be needed to sustain impact. As CHISU supports countries on their journey to digital transformation, the continuous learning gleaned from our implementation progress will help countries achieve the promise of healthier and more effective health systems in the future.

17
countries
& regions
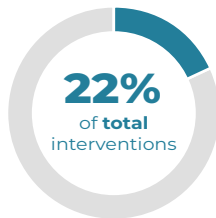
26
global technical
activities

212
knowledge-sharing
products & events

BURKINA FASO · BURUNDI · CÔTE D'IVOIRE · DRC · EASTERN & SOUTHERN CARIBBEAN · GHANA · HAITI · INDONESIA · KENYA · LATIN AMERICA & THE CARIBBEAN
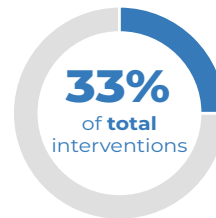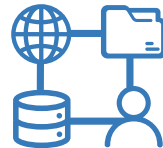MADAGASCAR · MALAWI · MALI · NAMIBIA · NIGER · SERBIA · SIERRA LEONE

STRATEGIC OBJECTIVES

SO1
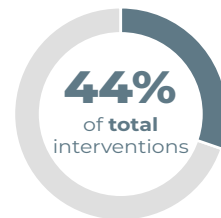Strengthened governance and enabling environment

22%
of **total**
interventions

SO2
Increased availability and interoperability of quality health data and information systems

33%
of **total**
interventions

SO3
Increased demand and use of health data and information to address health priorities, gaps, and challenges

44%
of **total**
interventions

SO4
Strengthened organizational development of local nongovernmental partners for sustained data use

1%
of **total**
interventions
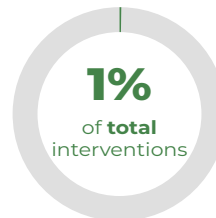
GENDER INTEGRATION

Not only is the number of gender considerations increasing, but we have also observed an increase in the share of those considerations we are tracking as belonging to our data quality and use work. This shows CHISU's emphasis on gender integration into HIS work as an important mechanism for improved data use for better decision making.

66
total considerations

105
total considerations

SO1
SO2
SO3
SO4

FY 21
39%
18%
38%
5%

FY 23
28%
17%
53%
2%
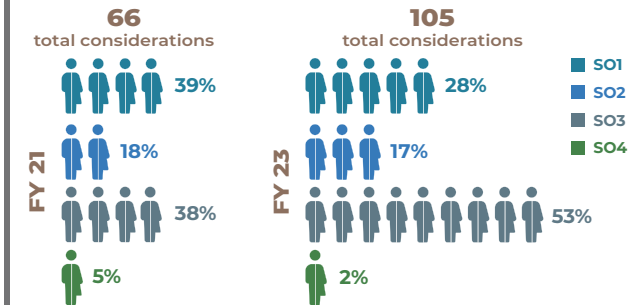
DATA SECURITY

To ensure that data security and privacy are further strengthened and advocated for in all other countries, CHISU has begun the development of a data security and privacy assessment tool. As the results are analyzed, they will be used to provide relevant and country-focused interventions on data security and privacy.

27%
of CHISU-supported
countries include data
security in CHISU activities

1

Introduction

The Country Health Information Systems and Data Use (CHISU) program strengthens country capacity and leadership to manage and use health information systems (HIS) and data to make evidence-based decisions. The CHISU consortium is led by JSI, with partners RTI International, Vital Strategies, Macro-Eyes, Jembi Health Systems, and Global Evaluation and Monitoring Network for Health. With its wealth of perspectives and expertise, CHISU helps countries overcome the complex challenges to HIS progression. The United States Agency for International Development (USAID) designed CHISU to take an integrated approach to health systems strengthening and to work across all health areas.

CHISU envisions country health systems in which stakeholders at every level, including health workers, can access high-quality data generated from multiple, interoperated data sources. Stakeholders can use those data to guide policy and improve resource allocation, service delivery, and system performance. To realize this vision, we work to achieve four critical strategic objectives (SOs):

- Strengthened governance and enabling environment of host country HIS

- Increased availability and interoperability of quality health data and information systems

- Increased demand and use of health data and information to address health priorities, gaps, and challenges

- Strengthened organizational development of local nongovernmental partners for sustained health data use

This report covers CHISU's work during the third year of implementation, October 1, 2022 through September 30, 2023. Activities implemented in this fiscal year (FY) are listed in Appendix 1. They include 35 country-level activities in 15 countries; six regional-level activities; 26 global technical activities; six cross-cutting global program activities supported with cross-bureau (XB) funding; and two U.S. President's Malaria Initiative (PMI)-funded operational activities.

Photo credits: *Top left:* CHISU Ghana, *Top right:* CHISU, *Middle right*: CHISU, *Bottom right:* CHISU Indonesia, *Bottom left*: CHISU, *Middle left:* CHISU Niger

Summary of results

Strategic Objective 1: HIS Governance

CHISU worked to strengthen HIS governance and enabling environments at the national and global levels. Figure 1 summarizes all CHISU interventions under SO1 in FY 23. At the global level, CHISU continued to serve in **HIS leadership roles** at the Global Health Initiatives' constituency of the Health Data Collaborative (HDC) working group, and the Gender/Diversity, Equity, and Inclusion (DEI) and Country Engagement working groups under the Digital Health and Interoperability (DH&I) working group. As a result of those roles, CHISU contributed to the Global Digital Health Forum in December 2022 in Washington, DC; the World Health Organization (WHO) Global Initiative on Digital Health which was launched at the G20 meeting in India in August 2023; the Community Health Worker Symposium in March 2023 in Liberia; the Seventh Global Symposium on Health Systems Research (HSR) in Colombia in November 2022; and the WHO routine health information system (RHIS) and SCORE for Health Data advocacy meeting in April 2023 in Greece. CHISU also continued to engage flagship working groups by contributing to the Africa Centres for Disease Control and Prevention's (CDC) African
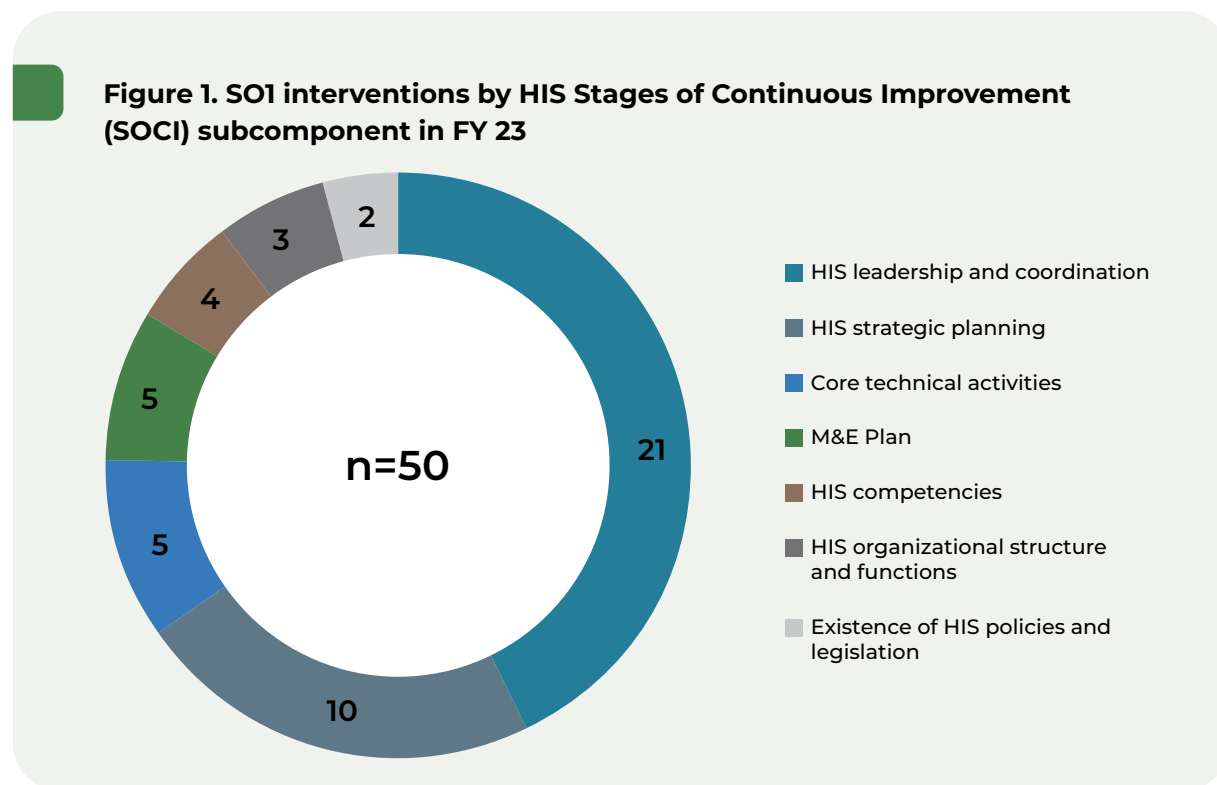
Women in Digital Health (AWiDH) and Digital Innovation Sandbox flagship initiatives' action plans. In addition, CHISU is serving as the Coordinator of the Roll Back Malaria (RBM) Surveillance, Monitoring, and Evaluation Working Group (SMEWG).

CHISU supports various webinars for the working group and its subcommittees, and also produces and disseminates newsletters and updates. CHISU will facilitate the semiannual convening of the working group at the American Society of Tropical

Figure 1. SO1 interventions by HIS Stages of Continuous Improvement (SOCI) subcomponent in FY 23

n=50

- 21 — HIS leadership and coordination
- 10 — HIS strategic planning
- 5 — Core technical activities
- 5 — M&E Plan
- 4 — HIS competencies
- 3 — HIS organizational structure and functions
- 2 — Existence of HIS policies and legislation

Photo: CHISU Ghana

Medicine & Hygiene conference in October 2023 and co-chair election in December 2023. Additionally, CHISU served as a leader in HIS strategy implementation and framework development. The program helped implement the WHO global RHIS strategy by working with WHO South-East Asia (SEARO) to provide technical assistance to support Timor Leste's development of its HIS strategic plan. CHISU also conducted a literature review for existing measurement frameworks relating HIS strengthening to primary health care and developed an initial draft of a theoretical framework. Finally, CHISU has now been included under USAID Global Goods activities on the Digital Public Goods Alliance Roadmap.

In several countries, CHISU supported assessments to understand the status of the HIS or the capacity of HIS stakeholders. This included conducting HIS Stages of Continuous Improvement (SOCI) assessments, which build in-country capacity to identify gaps and strengths of the national HIS and which help HIS stakeholders apply these insights to national strategic planning. The HIS SOCI results provide an important baseline measure of the status of the national HIS for host countries and for project implementation. HIS SOCI assessment results for **Malawi** were used to support the Central Monitoring and Evaluation Division (CMED) to refine and finalize the country's 2023–2030 HIS strategy. These results also

informed the identification of gaps and potential interventions for inclusion in the Global Fund New Funding Model Round III grant. In **Indonesia**, CHISU collaborated with the country's Ministry of Health (MOH) to complete an HIS SOCI-informed Digital Maturity Assessment, referred to as the Digital Maturity Index (DMI). In addition, CHISU held a workshop to revise DMI tools and methodology based on the 2022 implementation. To support the next round of assessments, CHISU facilitated the establishment of a DMI core team to support the implementation of the next DMI. In **Serbia**, CHISU helped elaborate a similar HIS SOCI mentorship plan. In **Madagascar**, CHISU concluded both an HIS SOCI assessment report and a data management standards report. These results informed the country's HIS strategic planning process. In **Niger**, CHISU supported the Directorate of Statistics (DS) to develop a new HIS strategic plan using the HIS SOCI results. In addition, CHISU supported the DS to disseminate the HIS Strategic Plan and develop and implement a data quality assurance plan. In the Democratic Republic of the Congo (**DRC**), CHISU used the monitoring and evaluation capacity assessment toolkit (MECAT) to conduct a mapping exercise to understand monitoring and evaluation capacity, resources, and structures at the national level and in five CHISU-supported provinces.

CHISU completed a human resource capacity needs assessment in **Ghana** to help plan the transition of hosting and maintaining the country's Surveillance Outbreak Response and Analysis System (SORMAS) from a third-party infor-

mation technology (IT) company to the Ghana Health Service (GHS). CHISU then supported GHS to develop a SORMAS transition and milestone plan with the participation of other stakeholders. In the **Eastern and Southern Caribbean (ESC) region**, CHISU used a detailed assessment tool to evaluate supply chain and inventory management operations at a national warehouse (Box 1). CHISU then developed new standard operating procedures (SOPs) and provided training to staff on warehousing guidelines and best practices.

In several countries, CHISU supported the work of HIS coordination bodies which serve as key convening mechanisms, facilitate more effective use of resources, and reduce fragmentation in the HIS ecosystem. CHISU continued to support the meeting of the Thematic Commission 5, which in charge of disease surveillance for the **Burkina Faso** One Health approach. The One Health Executive Secretariat organized joint investigation missions (involving all One Health ministries and key directorates at the MOH) focused on rabies in Sabou District in November and on fish mortality in the Mouhoun River in February. CHISU also hosted consultative meetings with COVID-19 stakeholders and actively participated in COVID-19 immunization task force meetings to understand the country's needs and provide support for improving immunization coverage through data management. In **Serbia**, a new eHealth steering committee was established with three technical working groups (TWGs). CHISU supported two of the three TWGs, and supported the defining of architecture and standards in

Box 1. Governance focus in the Eastern and Southern Caribbean (ESC) region

In Saint Vincent and the Grenadines, CHISU provided technical support to assess the current warehouse information systems and devised new approaches to improve inventory control and governance across the supply chain. With the objective of dramatically improving avail ability of health commodities at the service delivery point, CHISU conducted a three-day workshop with senior decision makers and functional leaders to present findings from the assessment, review and prioritize opportunities, and define new health information system requirements for selecting a new HIS software solution. Following the workshop, CHISU devel oped a comprehensive Supply Chain Management Action Plan and Roadmap which recom mended integrating a warehouse management information system at central medical storage facilities and adopting an electronic logistics management information system (eLMIS) for enhanced tracking and reporting capabilities.

collaboration with one of those working groups to produce the data model as well as structural and functional models for the future electronic health record. In **DRC**, CHISU supported the meetings of the Malaria Task Force at the national level and in seven provinces—and also supported the Malaria Scientific Days at the national level. CHISU helped to organize and facilitate meetings of the COVID-19 data quality surveillance subgroup and to organize the data quality competitions at the

regional level. In **Guyana (ESC)**, CHISU is supporting the revitalization of a multistakeholder TWG to accelerate HIS evolution. This includes the review of the TWG terms of reference (TOR) and a rapid assessment of current systems to make recommendations for consolidation.

CHISU also supported data standardization through guidelines, policies, and regulations. In **Kenya**, CHISU is providing technical support to

the National Malaria Control Program (NMCP) to update key malaria policy and strategy documents. In **Malawi**, CHISU supported the development of the NMCP Malaria Strategy for 2023–2030 and ensured that the strategy emphasizes data use to strengthen surveillance, monitoring, and evaluation at decentralized levels. In **Côte d'Ivoire**, CHISU contributed to the elaboration of a draft roadmap for integration of COVID-19 data into the RHIS, which was discussed with and validated by other partners in several working sessions.

Strategic Objective 2: Systems and Software

This year saw CHISU's Strategic Objective 2 activities grow, and included rolling out the One Health system; conducting information communication technology (ICT) assessments to better tailor relevant interventions to meet countries' needs; supporting appropriate ICT procurement; conducting training to sustain capacity; strengthening and scaling interoperability to ensure availability of data and use of standards-based data sharing approaches; enhancing and supporting COVID-19 systems to ensure certification and optimization; and finally, strengthening efforts to ensure data safety and privacy. Figure 2 summarizes all CHISU interventions under SO2 in FY 23.

In **Burkina Faso**, CHISU supported implementation, scale up, and support for the One Health systems approach by enabling interoperability between the One Health information system and

the mHealth community app. CHISU configured a joint investigation form for One Health-related public health events for better data collection. CHISU provides internet connectivity to ensure system availability and accessibility and provides maintenance to optimize performance of MS-Surveillance, the MOH One Health District Health Information System version 2 (DHIS2). In **Mali**, CHISU provided financial and technical support to the DHIS2 technical team and HIS partners to address issues related to the functionality and use of DHIS2, as well as

technical problems of DHIS2 users. CHISU collaborated with the MOH to establish an interoperability mechanism between DHIS2 and the YNIETTE application used to collect and share COVID-19 testing data for travelers. This allowed COVID-19 testing data to be collected in DHIS2 via YNIETTE on a daily basis. In **Haiti**, CHISU is supporting the development of a case management information system for orphans and vulnerable children (OVC).

Figure 2. SO2 interventions by SOCI component in FY 23

n=75

- Operations and maintenance
- Other: System maintenance and upgrades
- Interoperability (data exchange)
- Core technical activities
- HIS core services
- Standards and guidelines
- Communication network
- HIS workforce capacity and development
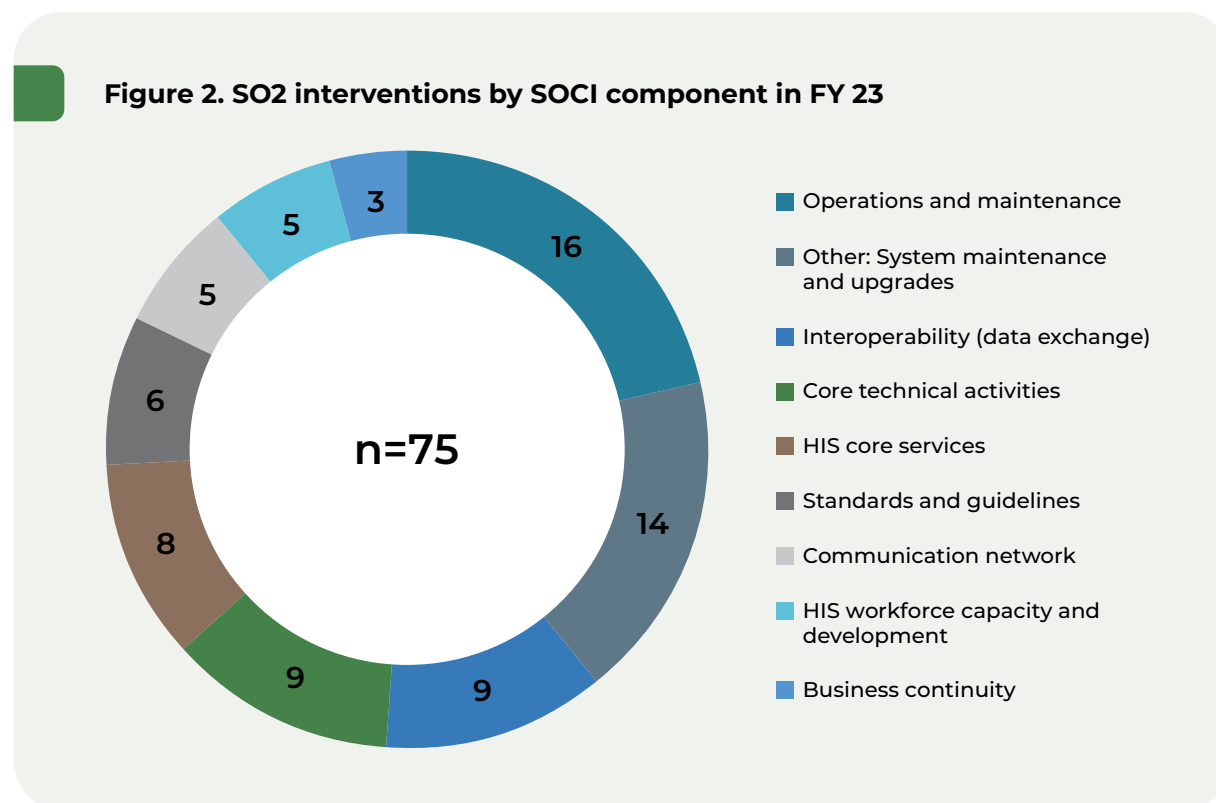- Business continuity

Photo: CHISU Ghana

CHISU supported systems and software assessments in several countries. CHISU conducted assessment activities in **Burkina Faso** to validate COVID-19 immunization data management processes; conducted both device and infrastructure assessments in **Ghana** to ascertain the availability of devices and readiness of the server infrastructure; and supported an ICT assessment in **Niger** for hardware and solar installation in their facilities.
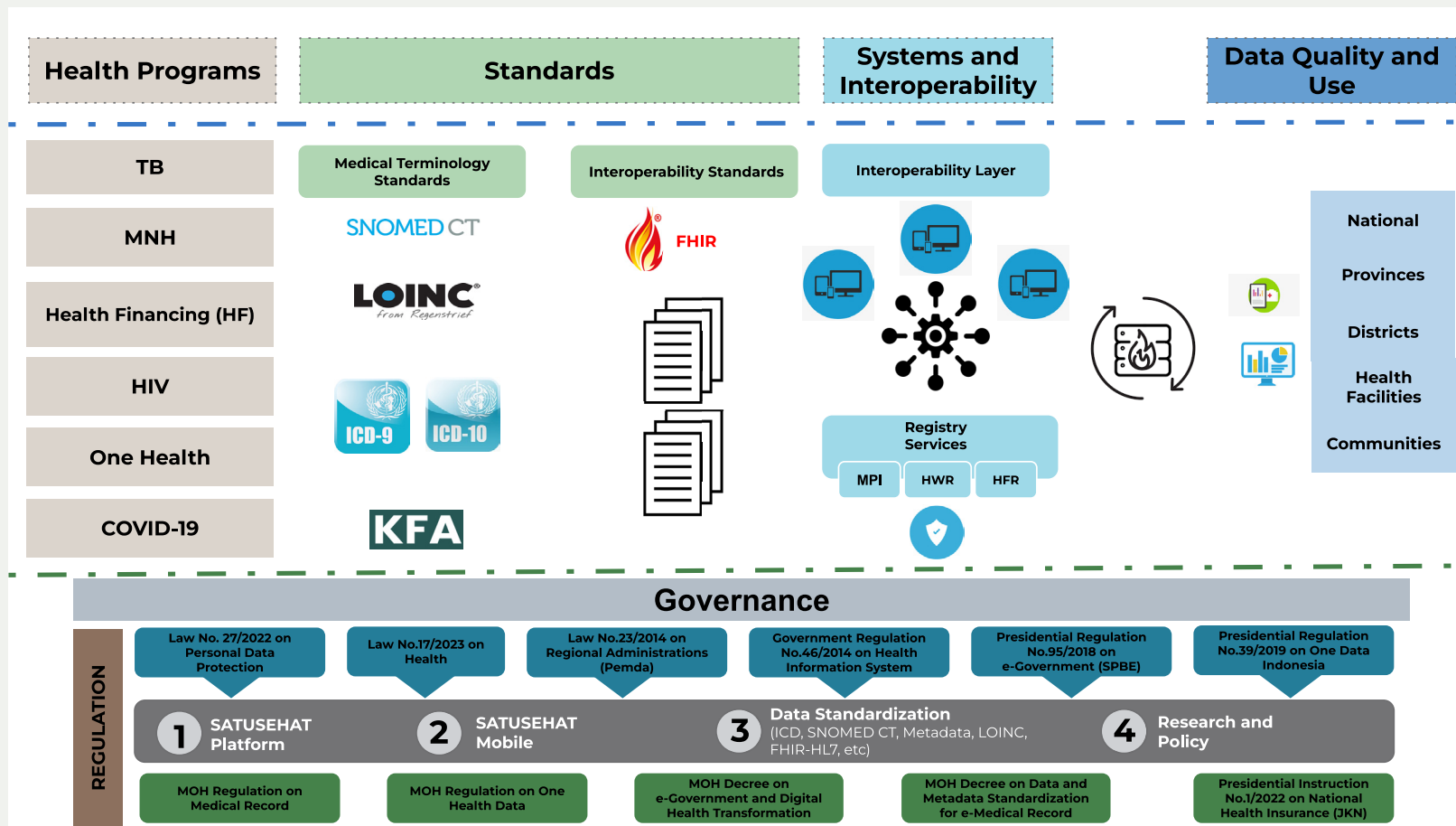
To build, strengthen, and sustain the systems and software capacity of country staff, CHISU conducted and supported training on different systems at different levels of each country's health system—ranging from user-based training to systems administration training. In **Burkina Faso**, CHISU led the developer training session focused on the One Health information system for 34 government staff and another developer training for DHIS2 tracker for three government staff. In **Ghana**, CHISU collaborated with OpenLabs and GHS to deliver training in cybersecurity and systems administration for servers. In **Indonesia**, CHISU and the Center for Data and Information Technology (Pusdatin) held a workshop to train the country's MOH and health professional bodies

on the use of Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT). CHISU also conducted a data security awareness and capacity-building seminar with the Digital Transformation Office (DTO), Pusdatin, and staff from various health programs. In **Kenya**, CHISU is supporting the country's MOH to deploy the electronic community health information system (eCHIS) through training for national master trainers and system end-users, reaching 3,473 community health assistants and promoters in five selected counties in FY 23. In **Ghana**, CHISU worked with GHS to train community-level health workers to capture maternal and child health and family planning service data using the District Health Information Management System 2 (DHIMS2) e-Tracker application.

CHISU continued to advocate for an approach to interoperability based on internationally recognized standards (i.e., Fast Healthcare Interoperability Resources, or FHIR). **Indonesia** is most notable for its activity in this area, with its work on both SATUSEHAT and Open Health Information Mediator (OpenHIM, which is based on the OpenHIE platform) (Figure 3). CHISU has supported this interoperability work by developing the guidelines, playbooks, sandboxes, master facility list, shared health record, and master patient index (MPI), and by establishing registries and performing metadata mapping. In **Burkina Faso**, Zato is the interoperability solution implemented to support transfer of data between the three ministries involved in the One Health system as well as in transmission of other health data—such as community data

Figure 3. Interoperability focus in Indonesia across multiple health areas

Health Programs	Standards	Systems and Interoperability	Data Quality and Use

Health Programs: TB, MNH, Health Financing (HF), HIV, One Health, COVID-19

Standards:
- Medical Terminology Standards: SNOMED CT, LOINC from Regenstrief, ICD-9, ICD-10, KFA
- Interoperability Standards: FHIR

Systems and Interoperability:
- Interoperability Layer
- Registry Services: MPI, HWR, HFR

Data Quality and Use: National, Provinces, Districts, Health Facilities, Communities

Governance

REGULATION

Law No. 27/2022 on Personal Data Protection	Law No.17/2023 on Health	Law No.23/2014 on Regional Administrations (Pemda)	Government Regulation No.46/2014 on Health Information System	Presidential Regulation No.95/2018 on e-Government (SPBE)	Presidential Regulation No.39/2019 on One Data Indonesia

1. SATUSEHAT Platform
2. SATUSEHAT Mobile
3. Data Standardization (ICD, SNOMED CT, Metadata, LOINC, FHIR-HL7, etc)
4. Research and Policy

MOH Regulation on Medical Record	MOH Regulation on One Health Data	MOH Decree on e-Government and Digital Health Transformation	MOH Decree on Data and Metadata Standardization for e-Medical Record	Presidential Instruction No.1/2022 on National Health Insurance (JKN)

into ENDOS-BF, the national health management information system (HMIS). In **Niger**, CHISU developed interoperability guidelines and SOPs to support the process of making MOH applications and DHIS2 interoperable. In **Ghana**, interoperability between SORMAS and DHIMS2 is underway,

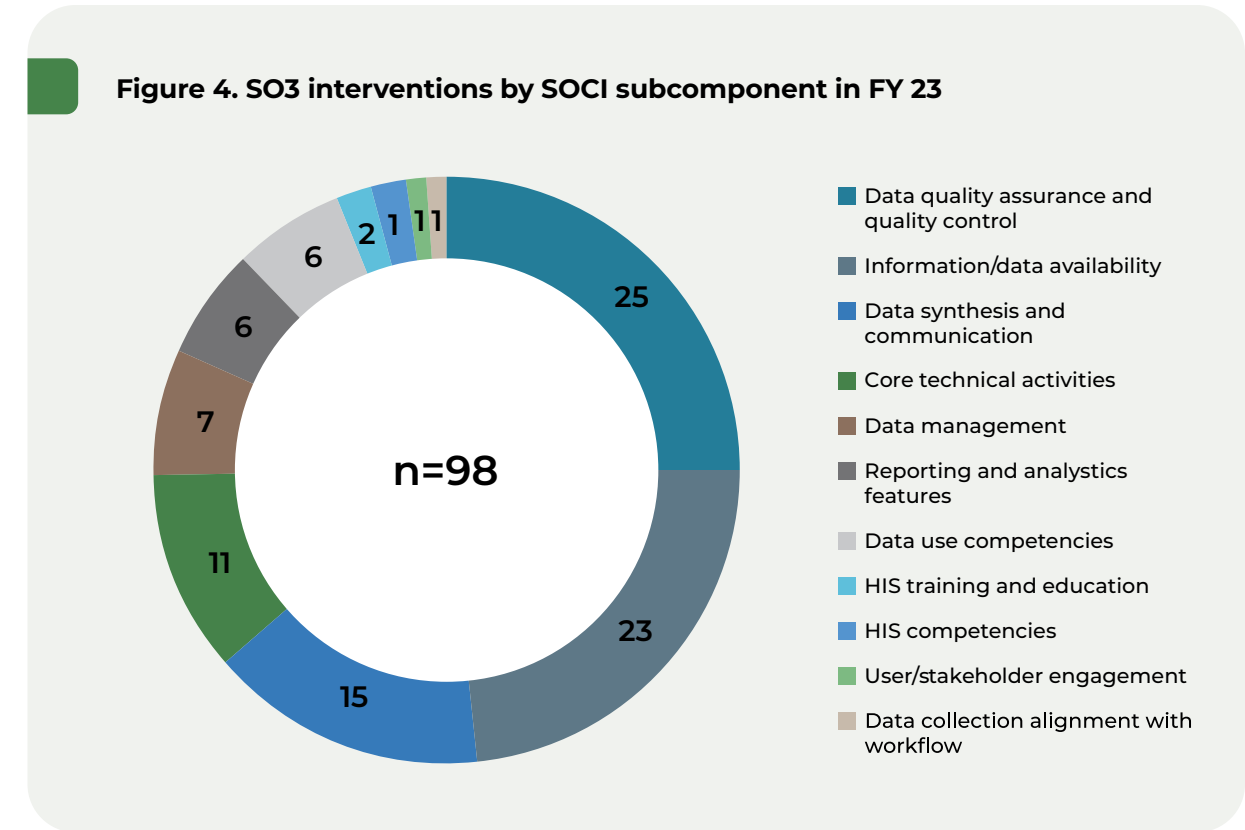as well as between the malaria applications and DHIMS2.

CHISU supports the development, installation, and use of a global automated malaria bulletin app that will help replace manual processes and

ensure more flexibility, autonomy, and ease of use as a global good. CHISU in **Malawi** is collaborating with NMCP to pilot a first version of the app, expected to be released in November 2023. In **Suriname**, CHISU supported the development of an Adverse Health Effect Reporting Information

System (also known as ESAVI) within DHIS2. ESAVI was built on the functionality of DHIS2 instead of reinventing a separate database to record adverse effects following immunization. With the implementation of the ESAVI module, CHISU supported the upgrade of the country's DHIS2 from version 2.35 to version 2.38.

Strategic Objective 3: Data Quality and Use

CHISU has continued to strengthen data use in countries by developing methods to assess data use needs. Figure 4 summarizes all CHISU interventions under SO3 in FY 23. In **Malawi** and **Indonesia**, CHISU conducted data use assessments and identified a model for a data use capacity-strengthening program at the national and subnational levels. In **Indonesia**, CHISU finalized a desk review of data and information products for maternal and newborn health (MNH), tuberculosis (TB), and health financing. CHISU hosted a workshop to review findings of the data use needs assessment and to validate the design of a data use capacity-strengthening curriculum. CHISU developed dashboards for routine immunization (e.g., polio drop and pneumococcal conjugate vaccine) and TB monitoring that allowed for disaggregation at the health facility or Puskesmas (community health center) level. CHISU hosted initial meetings to support the development of the artificial intelligence (AI) and machine learning use cases with Pusdatin and DTO. CHISU also developed data use training materials targeting the national-level audience. These training materials focused on boost-

Figure 4. SO3 interventions by SOCI subcomponent in FY 23

n=98

Legend:
- Data quality assurance and quality control
- Information/data availability
- Data synthesis and communication
- Core technical activities
- Data management
- Reporting and analytics features
- Data use competencies
- HIS training and education
- HIS competencies
- User/stakeholder engagement
- Data collection alignment with workflow

ing, bolstering, and enhancing knowledge on data demand and information use, ensuring that data analytics are understandable and used nationally. In **Malawi**, CHISU supported the NMCP to improve the quality and use of malaria data, targeting eight high-burden malaria districts. During integrated supportive supervision and district reviews, the district teams reviewed their program data to identify non-performing areas and facilities for interventions. Three antenatal care facilities were identified for social and behavior change communication (SBCC) intervention based on low coverage of the

recommended three doses of intermittent preventive treatment (IPTp 3). This led to an improvement in utilization of IPTp 3 services from 56 percent in 2021 to 60 percent in 2023. CHISU also supported DHIS2 training for 257 MOH staff at the facility level to enable them to make use of the system's data analysis functionality. CHISU provided similar support to improve malaria data quality with the NMCP in DRC (Box 2) and with the MOH in **Burkina Faso**. In **Mali**, CHISU support for an interoperability mechanism between DHIS2 and the YNIETTE application allowed COVID-19 testing data to be

Box 2: Improving the malaria data quality score in the Democratic Republic of the Congo (DRC)

In early 2023, CHISU began to support the DRC's National Malaria Control Program (NMCP) and nine provinces supported by the U.S. President's Malaria Initiative (PMI) with their malaria data quality efforts. Additionally, CHISU provides support to the Ministry of Health (MOH) staff for improving data analysis; holding regular meetings; conducting malaria routine data quality audits (mRDQA) and super vision in health facilities; conduct ing malaria data validation and review meetings with health zone teams; and facilitating technical working groups and malaria task force meetings. All of these activ ities contribute to improving the quality of data reported in DHIS2 and NMCP's key indicators. Each of the nine PMI-supported provinces each saw an improvement in their data quality score between 2018 and 2023.

Data quality score performance in PMI-Supported provinces

Legend
- Very low quality
- Low quality
- Medium quality
- Good quality
- High quality
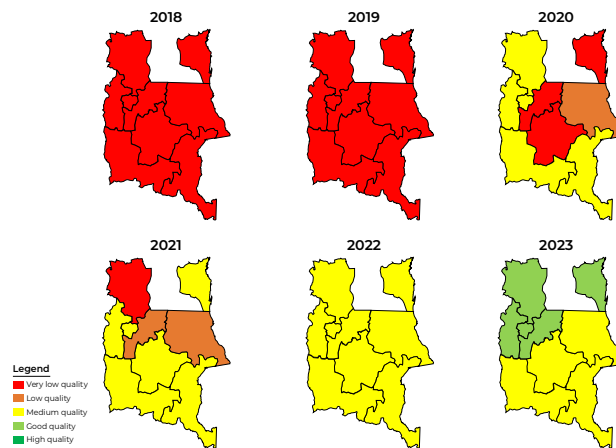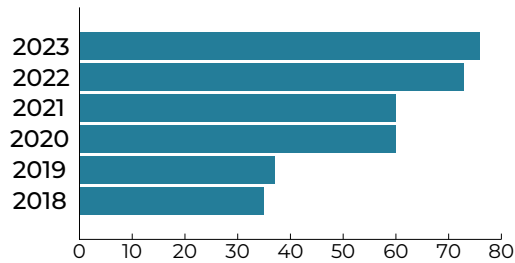
collected and analyzed directly in DHIS2. This, along with other interventions, improved the quality of COVID-19 data in DHIS2 and also facilitated collection of all historical data of confirmed cases from traveler tests.

CHISU supported COVID-19 surveillance and data use in the **ESC** region. In Suriname and Antigua and Barbuda, CHISU supported the MOH to focus on validation and quality assurance of COVID-19 vacci-nation and syndromic surveillance data. To improve

data quality, CHISU provided training to frontline health workers engaged in data collection.

CHISU also supported activities that highlighted the strategic use of data. In **Serbia**, CHISU supported improvements to the process for visualizing public health data at the Institute of Public Health (IPH) Batut. In **Kenya**, CHISU supported the Division of National Malaria Program and modelers from the Swiss Tropical and Public Health (TPH) Institute to convene two workshops that explored the use of mathematical modeling for subnational tailoring of malaria interventions. The workshops' objective were to introduce mod-eling concepts, refine data and model assump-tions, and make recommendations on the mix of interventions to be proposed in Kenya's Global Fund Cycle 7 Grant application and in the coun-try's 2024 Malaria Strategic Plan. CHISU support-ed the successful submission of the application and will support the development of the plan in FY 24.

In addition, CHISU carried out two multisite re-search studies to assess COVID-19 vaccine uptake and rollout. In **Malawi**, CHISU collected secondary data to build epidemiologic and economic mod-els for analyzing cost effectiveness of COVID-19 vaccination strategies. The study will also be conducted in **Madagascar** in early FY 24. Also, preliminary data collection is underway to assess factors linked to successful COVID-19 vaccine roll-out strategies in **DRC**. Data collection will also be carried out in **Tanzania** and **Mozambique**.

Strategic Objective 4: Local Organization Capacity Enhancement

In **ESC**, CHISU continued to build sustainable models for HIS technical support by participating in planning meetings with the University of the West Indies, St. Augustine to discuss establishing an HIS Technical Support Facility in the Caribbean region. The meetings provided stakeholders—including USAID/Latin America and the Caribbean (LAC) and the Pan American Health Organization (PAHO)—an opportunity to discuss how to coordinate efforts moving forward.

In **Indonesia**, CHISU released a competitive request for applications valued at $150,000 for local organizations. The successful applicant was Castellum Digital Indonesia (CDI) (Box 3). CHISU conducted an organizational capacity assessment (OCA) with CDI to identify and prioritize capacity enhancement activities. As a result of that assessment, in September, CHISU initiated training and mentoring activities on monitoring, evaluation, and learning. Another important component of this support was to help CDI position themselves to receive grants directly from USAID. By initiating that process, CDI successfully fulfilled the administrative and management requirements to register as an entity on the U.S. Government's System for Award Management (SAM.gov).

Cross-Cutting Area: Gender

In FY 23, CHISU continued to integrate gender considerations across the four strategic objec-

Box 3: Strengthening local partner organizational capacity in Indonesia

To successfully implement Indonesia's digital health strategy, it is essential for the country's MOH to have access to local partners to provide technical assistance to subnational governments. CHISU selected Castellum Digital Indonesia (CDI) to be the local organization to partner with at the subnational level to provide technical assistance to DKI Jakarta and the District Health Offices of Makassar City and Maros Regency.

CHISU supports CDI's technical activities and organizational development goals through this partnership. One way that CHISU has done so is by supporting CDI in conducting an organizational capacity self-assessment in 2023. The self-assessment resulted in CDI identifying priority areas for developing organizational capacity—and CHISU worked together with CDI to create an action plan that consisted of a capacity-strengthening plan and a training plan based on those priority areas.
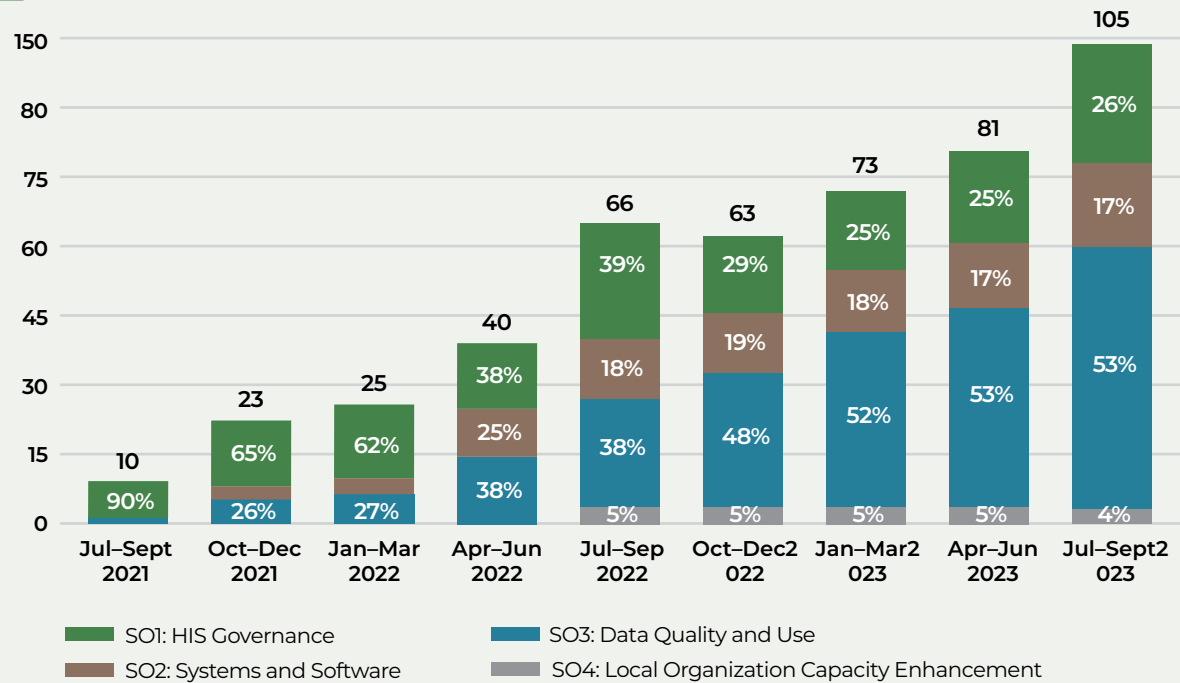
By the end of FY 23, CHISU carried out two of four capacity-strengthening workshops specified in the action plan, providing CDI with skills to develop more effective monitoring and evaluation tools and to develop project budgets and manage them in accordance with USAID standards and policies.

tive areas based on activity work plans. Notably, for the first time in FY 23, CHISU began gender integration work under Strategic Objective 4. The number of gender considerations reported across activities increased from last year, with 66 gender considerations reported in FY 22 Q4 and 105 reported in FY 23 Q4 (Figure 5). CHISU is also developing a gender tiers maturity model to track

Figure 5. Gender considerations reported, by strategic objective

Figure 5. Gender considerations reported, by strategic objective

	Jul–Sept 2021	Oct–Dec 2021	Jan–Mar 2022	Apr–Jun 2022	Jul–Sep 2022	Oct–Dec2 022	Jan–Mar2 023	Apr–Jun 2023	Jul–Sept2 023
Total	10	23	25	40	66	63	73	81	105
SO1: HIS Governance	90%	65%	62%	38%	39%	29%	25%	25%	26%
SO2: Systems and Software				25%	18%	19%	18%	17%	17%
SO3: Data Quality and Use		26%	27%	38%	38%	48%	52%	53%	53%
SO4: Local Organization Capacity Enhancement					5%	5%	5%	5%	4%

Legend:
- SO1: HIS Governance
- SO2: Systems and Software
- SO3: Data Quality and Use
- SO4: Local Organization Capacity Enhancement

and measure potential progression in gender and HIS outcomes based on the gender considerations being implemented in each country. CHISU continues to identify innovative ways to integrate gender and to set an example for global programs.

Advocacy for inclusion and participation

CHISU has helped several countries advocate for women's inclusion and prioritization in their HIS strengthening efforts. In **Burkina Faso**, for example, CHISU ensured women were considered in the design and broadcast of radio messages and TV spots notifying the public about unusual health events in the CHISU-targeted regions. When finalizing the radio and TV messages as part of a One Health-focused activity, CHISU advocated for women to be involved in hosting the programs and—to enable wide exposure to the messages—for broadcasting times to take into account women's availability (e.g., in the evening, when the whole family gathers).

In **Côte d'Ivoire**, CHISU is supporting the National Malaria Program, National Institute of Public Health, and the MOH to organize and co-facilitate a malaria surveillance, monitoring, and evaluation (SME) course. In the SME course TOR that outlined criteria for selecting participants, CHISU included a recommendation for women and men to be selected. Following internal discussions about the gender digital divide, CHISU noted that in **Ghana**, there is generally low representation of women working in the IT field. CHISU is actively encouraging the National Malaria Elimination Program (NMEP) and the Centre for Health Information Management to invite female participants to interoperability training and workshops. CHISU also advocated for the inclusion of both men and women in the Anglophone Regional Workshop on Surveillance, Monitoring, and Evaluation of Malaria Control Programs. Ultimately, CHISU supported the participation of two women and two men in the training.

As part of these efforts to ensure women's meaningful participation in HIS strengthening activities, CHISU also supported several countries to track women's participation in their programming. In **Madagascar**, CHISU documented participation of women during the HIS SOCI assessment. And in **Mali** and **Malawi**, CHISU documented the ratio of male and female participants to track and advocate for increased female participation in HIS technical working groups and meetings related to data quality and use.

In terms of prioritizing women within program activities, CHISU supported **Kenya's** NMCP to enhance the uptake of malaria in pregnancy (MIP) prevention services by prioritizing interventions targeting pregnant teens. This was informed by 2022 findings from an assessment that focused on access to malaria prevention and treatment services among vulnerable populations. This assessment identified gaps in antenatal care (ANC) attendance and MIP services among first-time pregnant teens. The proposed interventions were budgeted under the Global Fund module on "removing human rights and gender-related barriers."

Data disaggregation

CHISU also helped ensure that data was sensitive to and disaggregated by gender in several countries. In **Burkina Faso**, as part of an activity to develop training modules on the deployment of the ENDOS-BF system, CHISU included data analyses of gender-sensitive indicators to emphasize the importance of these analyses and increase demand for gender data. In the **ESC region**, CHISU highlights gender data in monthly COVID-19 newsletters that are distributed to government officials. The reports highlight applicable gender-specific findings, including trends in the data. In Antigua and Barbuda, CHISU ensured that sex-disaggregation was considered during the scoping of requirements for a DHIS2-based vaccination system that the program is developing in collaboration with PAHO.

CHISU is also planning a training in **Ghana** on data validation, verification, and analysis that will emphasize the importance of considering gender in malaria data analysis and interpretation. In **Haiti**, CHISU successfully advocated for sex-disaggregated indicators to be included in a draft list of national health essential indicators. CHISU developed a data validation tool with support for validating sex-disaggregated data for the national health information system (SISNU) with the Ministry of Public Health and Population (MSPP) Unit of Evaluation and Programming (UEP). CHISU supported the MSPP to design a prototype of a national data web portal as part of the Carte Sanitaire update process that includes sex-disaggregated data and to add sex-disaggregated data to the published Annual Statistical Report 2022.

In **Indonesia**, CHISU ensures that supportive supervision includes reviewing whether sex-disaggregated data are collected along with promoting use of that disaggregated data (e.g., walking through concrete examples and basic analyses with community health workers to identify gender gaps). CHISU also examined and documented the availability of sex and age disaggregation in national tools in **Madagascar** during HIS SOCI data collection.

Training and organizational capacity strengthening

CHISU also worked to build countries' capacity to integrate gender into their HIS strengthening activities. In **Côte d'Ivoire**, CHISU developed a gender module for the malaria SME course that

Photo: CHISU

focused on gender in the monitoring and evaluation of malaria control programs. In an e-Tracker training conducted in August 2023 in **Ghana**, CHISU designed training modules to promote gender sensitivity among health care workers. This included understanding and addressing the unique health care needs of men and women, emphasizing the importance of respecting patient preferences for health care providers, and recognizing potential gender-based barriers to utilizing the DHIMS2 e-Tracker application for service provision. CHISU offered recommendations to the Head of the ICT department to address gender inequities in the Ghana Health Service workforce by adopting gender-responsive hiring practices. The department is currently working on an updated job description and strategy for recruiting ICT staff.

In **Indonesia**, CHISU integrated gender into organizational capacity-strengthening activities to help a local partner understand the importance of gender in HIS strengthening and how to support sustainable gender-transformative change at the organizational level. In January, CHISU conducted a gender sensitization workshop with government stakeholders to discuss the importance of gender and health in the national HIS strategy, as well as policies related to health informatics, data analysis, and software development.

In **Serbia**, CHISU supported the recruitment of a new employee at the IPH Batut who has been trained on the importance of integrating gender data into their analytical work and data visualiza-

Photo: CHISU

tions. Additionally, CHISU is supporting the creation of architecture and standards for the Service for Public Health and is discussing with stakeholders how to ensure that gender considerations are incorporated.

Thought leadership

CHISU's core-funded activities have also been incorporating gender considerations and providing thought leadership around the intersection of gender and HIS. CHISU presented a poster on "Integrating gender in health information system strengthening: experiences and lessons from Serbia, Niger and Indonesia" at the Health Sys-

tems Research conference in Bogota, Colombia in November 2022. For International Women's Day in March 2023, CHISU published a blog post on how gender integration contributes to more equitable HIS, as well as short videos from CHISU team members highlighting the importance of integrating gender into program activities, strategic planning, and HIS learnings. CHISU also held a gender webinar on integrating gender into HIS strengthening. CHISU Resident Advisors and government counterparts from Burkina Faso, Ghana, and Indonesia shared their experiences.

Photo: CHISU

CHISU has continued to serve as co-lead of the Digital Health and Interoperability Gender/DEI small working group. CHISU convened meetings with WHO to identify potential avenues for updating foundational documents (such as the eHealth Strategy Toolkit and Digital Adaptation Kits) to include gender considerations, and prepared joint abstracts across the group for submission to the 2023 Global Digital Health Forum. CHISU also recommended that digital integrated supportive supervision platforms in Ghana and Malawi include visualizations of sex-disaggregated data from the facility level to the national level. Finally, CHISU

contributed to the Africa CDC's African Women in Digital Health flagship initiative action plan.

Cross-Cutting Area: Data Security

Across CHISU, there is a deliberate focus on data security and privacy—and there is an urgent need for this endeavor, given the expansion of digital health information systems.

In **Ghana**, CHISU collaborated with OpenLabs to complete a three-week cybersecurity training with five GHS ICT unit staff. This training supported the

development of cybersecurity manuals and a cybersecurity awareness and data protection training manual for GHS staff. This effort also led to the development of cybersecurity e-learning modules for GHS staff, which will further extend the cybersecurity training in a self-paced environment.

In **Indonesia**, CHISU collaborated with DTO and Pusdatin to conduct a data security awareness and capacity-strengthening seminar to raise awareness of data security for health information and to identify partners that will be working on data security management. The seminar reached more than 1,300 participants, with an additional 40 joining online. To further boost data security on SATUSEHAT, CHISU provided technical oversight to the SATUSEHAT internal and external audits for ISO 27001 certification stage 1 auditing policy and procedures. This paves the way for the stage 2 audit, which is a technical audit. CHISU also participated in a USAID Mission-organized Cyber Security Academy where CHISU's approach and interventions to ensure data security and privacy—along with strategies to integrate data security into interoperability efforts—were presented.

In **Burkina Faso**, CHISU supported training for systems administrators of the One Health information system on best practices to support the creation of users and roles within the system. As usernames and passwords are created and allocated, consistent standards for authentication and authorization enhance data security and privacy for the system.

To ensure that data security and privacy are further strengthened and advocated for in all other countries, CHISU has begun to develop a data security and privacy assessment tool. As the results for each country's systems are analyzed, they will be used to provide relevant and country-focused interventions on data security and privacy. CHISU hopes to ensure that, at a minimum, basic standards on data security and privacy are in place in all of the systems that CHISU supports in each country.

HIS Learning

CHISU's learning approach includes activities for reflection and for directed investigations. CHISU holds regular, country-level Pause and Reflect meetings that provide opportunities for country and regional teams to review their implementation progress and plan for strategic adaptations as needed in the future. In FY 23, eight CHISU country and regional teams—in **Burkina Faso**, **ESC**, **Ghana**, **Haiti**, **Indonesia**, **Malawi**, **Mali**, and **Serbia**—held at least one Pause and Reflect meeting. Three countries—Ghana, Haiti, and Indonesia—held at least two. CHISU used online collaborative platforms like Miro to document discussion on activity progress and achievements.

Some CHISU teams held a Pause and Reflect meeting in tandem with strategic planning and work plan development meetings that were attended by external stakeholders from national governments, USAID Missions, and HIS partners. In **Indonesia**, CHISU held quarterly Pause and Reflect meetings to provide a periodic touchpoint

to discuss both operational and strategic priorities. For example, the team used these sessions to have a common understanding of activity and deliverable timelines and to set a shared vision for the upcoming year.

The **Burkina Faso** team identified documentation of improved competencies among their HIS stakeholders as an important priority moving forward. In **Ghana**, CHISU used the Pause and Reflect sessions to discuss and document the HIS ecosystem and strategize how CHISU could better contribute to overall HIS strengthening in the country. CHISU then developed and submitted a briefing document to USAID/Ghana for consideration.

From July 13–21, CHISU convened 90 representatives from country and regional programs, consortium partners, and USAID/Washington in Arlington, VA for the program's Mid-Project Meeting. Participants attended plenary and breakout sessions to discuss results achieved to date; identify common challenges and potential solutions across CHISU countries and regions; and reinforce CHISU's vision for the remainder of the program. Important messages shared at the meeting included recognizing that successful collaboration is essential to CHISU's technical approach; use of the HIS SOCI tool has been critical for understanding the state of countries' health information systems; and a need for continued HIS support will likely extend beyond the current program timeline. Through participant submissions of "lightbulb moments"—insights experienced by a participant during the Mid-Project Meeting,

key priorities for the future were identified. They included prioritizing data security interventions and documenting examples of data use.

In addition to learning by reflection, CHISU pursues learning through directed investigations of learning questions captured in the program's Activity Monitoring, Evaluation, and Learning Plan (AMELP), and through implementation of standalone learning activities that are formalized in activity work plans. In FY 23, CHISU addressed four learning questions and implemented three standalone learning activities. CHISU uses a variety of methods in this learning approach, including but not limited to analysis and synthesis of routine activity reports; performance indicator data and technical products; key informant interviews (KIIs) and focus group discussions with CHISU staff and external stakeholders; and formal quantitative analyses. Each learning question and learning activity is briefly summarized below.

1. **What is CHISU learning about HIS evolution from the application of SOCI?** From the HIS SOCI applications in Burkina Faso, Madagascar, Malawi, Niger, and Serbia, CHISU is learning that a lack of national strategic documents (e.g., HIS policies and SOPs) continues to be a challenge for countries. There is inadequate workforce capacity, and gaps in basic ICT infrastructure are common. Very few countries have plans for continuity of business services (e.g., internet and servers), and standards and interoperability gaps contribute to persistent data quality issues.

2. **What are the causal pathways between interoperability, data quality, data use, and health system outcomes, and what practices and conditions influence the pathways?** A key finding from a multicountry COVID-19 learning activity was that the urgent need for and use of data in the emergency response drove discussions about system design, interoperability, and data quality (not the other way around). Data use in routine responses seems to follow discussions on system design, interoperability, and data quality.

Photo: CHISU

3. **What approaches in macro-level governance can influence programming, funding, implementation, and accountability of national digital health investments?** CHISU led a study examining how USAID's COVID-19-funded digital health investments advanced the development of digital health architecture and affected the COVID-19 response in Burkina Faso, Indonesia, Mali, and Suriname. Productive stakeholder coordination was identified as a key enabling factor for consolidation and standardization to reinforce integration of data flows and interoperability of systems. A key recommendation from the study was to pair investments in systems with investments in governance. This would ensure coordination between different groups that manage and support various components and would reinforce standards and architecture. An additional recommendation was for donors to invest in stakeholder coordination that would support long-term digital transformation.

4. **What strategies are effective in improving gender inclusivity in HIS processes?** A key learning during the year is that progression in the ways that CHISU teams integrate gender in HIS strengthening is possible but requires support from CHISU's gender focal points. As a result, CHISU started work to define tiers that reflect a continuum from gender-sensitive activities to gender-transformative interventions. For example, the tiers guide CHISU teams to move from tracking the sex of training and workshop participants to integrating gender into the analysis and interpretation of health data to identify disparities that should be addressed.

Further, CHISU implemented a portfolio of COVID-19 activities that focused on learning. CHISU initiated a COVID-19 vaccine effectiveness study using mathematical modeling to analyze the epidemiological impact and cost-effectiveness of COVID-19 vaccination strategies in **Malawi** and **Madagascar**. In **Burkina Faso**, **Indonesia**, **Mali**, and **Suriname**, CHISU examined the contri-

butions of USAID's COVID-19 digital investments on their overall digital health ecosystems through key informant interviews and focus group discussions with HIS stakeholders. The study team produced two manuscripts that were submitted for peer review and are planned for publication in 2024. In **Tanzania**, **Mozambique**, and **DRC**, CHISU initiated a study to identify the main factors in policy and coordination; microplanning for service delivery; supply chain; communication and demand generation; and data management and use that contributed to the successful rollout of COVID-19 vaccination in those countries.

Prior to the end of the project year, CHISU initiated a formal process for proposing revisions to the original learning questions. Working groups of CHISU and USAID staff will review groups of learning questions related to each strategic objective and cross-cutting objective and will recommend changes as necessary. These will be finalized in early FY 24.

Health System Strengthening

CHISU continued its focus on and commitment to the actualization of USAID's Vision for Health System Strengthening 2030.

CHISU contributes to **equity** in the health system by supporting countries like **Timor Leste**, **Malawi**, and **Niger** to develop HIS strategic plans. Global engagements like the Global Digital Health Forum and initiatives like African Women in Digital

Health underscore efforts for global and regional equity in digital health. Initiatives like the One Health system strengthening in **Burkina Faso** demonstrate a commitment to comprehensively address health by considering human, animal, and environmental health. Targeting high-burden districts for malaria data improvement in **Malawi** and **Ghana** and studying COVID-19 vaccine uptake highlight a commitment to addressing health disparities and ensuring equitable access to health care. Initiatives in **Burkina Faso**, such as those that involve women in the design and broadcast of health-related radio and TV messages, demonstrate efforts to consider and address gender-specific needs.

CHISU also contributes to improved **quality** in health systems. Assessments like HIS SOCI and the Digital Maturity Index demonstrate a commitment to evaluate and enhance health information systems. Involvement in workshops, literature reviews, and framework development reflects dedication to improving the quality of measurement frameworks and assessment processes. Assessments and resolving technical issues related to the functionality and use of DHIS2 in **Mali** focus on ensuring the reliability and quality of health information systems. Data use assessments, malaria data quality improvements, and ensuring COVID-19 data quality through interoperability mechanisms underscore the commitment to data quality enhancement. Gender data integration and organizational capacity assessments in Indonesia further showcase a systematic

approach to improving health information system quality, which in turn will contribute to improved health services and outcomes.

CHISU **optimizes resources** by supporting countries with capacity needs assessments (e.g., **Madagascar**), warehouse evaluations (e.g., **Guyana**), and SOP development. Consultative meetings and coordination bodies (e.g., **Serbia**) contribute to effective resource use and reduced fragmentation in the health information system ecosystem. Assessments in **Ghana** ensure the availability of devices and readiness of server infrastructure and help optimize hardware and server resources. Training initiatives, use of dashboards, collaboration with local organizations, and directed investigations contribute to optimized human and logistical resources. Our learning approach through Pause and Reflect meetings and directed investigations focuses on key questions that guide strategic decision making and contribute to resource optimization.

Collaborations with diverse stakeholders (e.g., WHO, HDC DH&I Working Group, and RBM SMEWG); involvement in strategic planning with multiple entities; and engagement with various sectors in **Burkina Faso**, **Ghana**, **Niger**, and **Indonesia** highlight a whole-of-society approach to HIS strengthening. Collaboration with government staff; health professional bodies; and organizations in **Indonesia**, **Suriname (ESC)**, and **Antigua** and **Barbuda (ESC)** ensures a comprehensive approach to data use and quality assurance.

Planning meetings with the University of the West Indies, St. Augustine for an HIS Technical Support Facility in the Caribbean reflect engagement with academic institutions and stakeholders, and further emphasizes a **whole-of-society approach**. Inclusion in USAID Global Goods activities and collaboration with third-party IT companies, stakeholders, and research institutions underscore CHISU's engagement with the private sector. Partnerships with CDI in **Indonesia** and OpenLabs in **Ghana** demonstrate private sector engagement in strengthening HIS. Initiatives like cybersecurity training in **Ghana** showcase public-private partnerships that address data security challenges.

CHISU's engagement with USAID's **localization** agenda is evident in our SO4 interventions. Beyond these interventions, CHISU continues to explore ways to champion this agenda, taking into account the USAID mission's prioritization of HIS governance, systems and interoperability strengthening, and data analysis and use.

CHISU's activities reflect a holistic and multifaceted approach to health system strengthening. It encompasses equity, quality, resource optimization, whole-of-society approaches, private sector engagement, and localization. The program supports effective and sustainable solutions that are tailored to the specific needs of countries, address

disparities, promote inclusivity, and contribute to the overall improvement of health systems globally.

Conclusion

Photo: CHISU

Over the past year, CHISU continued to build on the three themes described in the semiannual report: engagement, growth, and learning. At the national, regional, and international levels, CHISU engaged in many meaningful collaborations. At the national and subnational levels, CHISU is engaging with 30 coordinating and technical bodies in 11 countries to enhance their HIS; the program is also engaging with 18 regional and international bodies to strengthen international standards for HIS governance and data use. Of note, CHISU's role as coordinator for the RBM SMEWG, continued participation in the HDC DH&I working groups, and work with the Africa CDC's flagship initiatives are ensuring that country-level HIS strengthening efforts that consider gender feed into international deliberation on HIS standards.

CHISU's growth over the past year has been remarkable, having expanded from nine countries and regions at the beginning of the year to 16 at the end of the year. CHISU engaged in 10 core-funded activities at the beginning of the year, and 26 at the end of the year. This growth allows CHISU to reflect, learn, and implement interventions which best enable HIS progression in different settings.

Drawing on these reflections, learning, and implementation experiences, CHISU is reflecting on the following themes as the project moves forward:

- **Use of the HIS SOCI tool (developed with USAID investment) has been indispensable.** in helping us to evaluate the state of countries' health information systems and to understand areas that need improvement. These assessments have informed countries' efforts to achieve lasting results in a short amount of time and have paved the way for their digital transformation journey.

- There is a **greater appreciation for the role HIS leadership and governance play in HIS strengthening**. There was a call for action, prompted by previous USAID HIS investments, to focus on HIS leadership and governance. USAID Missions and country governments from all 18 CHISU-supported countries and regions understood the role of HIS leadership and governance—and they answered that call by engaging CHISU to provide support for HIS leadership and governance.

- **HIS strategic plans are a key output** of leadership and governance interventions. Even though such plans exist in many of the 22 countries and regions CHISU supports, their implementation requires oversight and adaptive management processes that change within the context of each country. Another key output is enterprise architecture, which is the blueprint for the HIS—but it's not commonly available in countries and, where it exists, there are limited governance structures to support it.

- **ICT equipment and infrastructure are essential** for a functioning HIS. There seems to be little disagreement about this, but no one seems to be in charge of ensuring their existence. While not originally part of CHISU's technical approach, ICT procurement has required dedicated resources from CHISU across many countries. Thus, despite ideas to the contrary, ICT is not a given; it needs to be a deliberate intervention.

- **CHISU is a trusted partner** in-country and globally. Collaboration is an integral part of the CHISU approach, whether through participating in technical working groups or engaging with stakeholders at all levels and sectors of the health system. Results show the positive impact and relevance of CHISU's approach.

- **Data demand is driving system development and deployment.** Where there are gaps in governance, fragmented systems exist.

There is a demonstrated need to continue HIS support beyond the current project timeline. CHISU has shown that implementation within countries requires substantial time, coordination, and support. While there has been significant progress in different settings, further investment and continued technical assistance will be needed to sustain impact.

CHISU's work extends far beyond the numbers and figures presented in this report. CHISU is making health care more accessible, efficient, and equitable for individuals and communities, one health system at a time. As CHISU supports countries on their journey to digital transformation, the continuous learning gleaned from our implementation progress will help countries achieve the promise of healthier and more effective health systems in the future.

Annexes

Annex 1. Activities Report

This report covers CHISU's work during the third year of implementation, October 1, 2022 through September 30, 2023. Activities implemented in this fiscal year (FY) include 35 country-level activities in 15 countries; six regional-level activities; 26 global technical activities; six cross-cutting global program activities supported with cross-bureau (XB) funding; and two U.S. President's Malaria Initiative (PMI)-funded operational activities. Activities that are italicized are closed as of the end of the reporting period.

CHISU activities for period ending September 30, 2023

Code	Activity Name	Start Date	End Date	Status
Country Activities				
BF-001	One Health information system support in Burkina Faso	10/01/2020	09/30/2024	Open
BF-002	Support to PMI Activities in Burkina Faso	10/01/2022	09/30/2023	Open
BF-003	Strengthening availability and use of COVID-19 data in Burkina Faso	10/01/2021	12/31/2023	Open
BF-004	Strengthening use of ENDOS-BF in Burkina Faso	10/01/2021	09/30/2024	Open
BF-005	*COVID-19 Data System Design Analysis and immunization tool revision in Burkina Faso*	*04/01/2022*	*6/30/2023*	*Closed*
COVID-002	COVID-19 Vaccine Data Availability in Burkina Faso	04/01/2022	11/08/2023	Open
BI-001	Strengthening Malaria Data Systems and Use in Burundi	08/18/2023	09/30/2023	Open
CD-001	Support to PMI Activities in DRC	02/01/2023	12/31/2023	Open
CI-001	Côte d'Ivoire Scoping Exercise; Support to COVID-19 data management and use in Cote d'Ivoire	10/01/2022	01/31/2024	Open
CI-002	Strengthening malaria data quality and use in Côte d'Ivoire	4/01/2023	03/31/2024	Open
CI-003	Support Côte d'Ivoire's One Health information system	08/01/2023	07/31/2024	Open
GH-001	*Ghana Scoping*	*10/04/2021*	*11/30/2021*	*Closed*
GH-002	Strengthening malaria data quality and use in Ghana	01/01/2022	06/30/2024	Open
GH-003	COVID-19 surveillance system alignment	09/01/2022	12/08/2023	Open
GH-004	Ghana COVID e-Tracker and DHIMS2 Support - P2	01/01/2023	12/15/2023	Open
GH-005	COVID-19 Surveillance System Alignment - P2	01/01/2023	12/15/2023	Open
COVID-003	*Ghana COVID Scoping Exercise*	*06/01/2022*	*07/31/2022*	*Closed*
COVID-009	Support to eTracker in Ghana	10/01/2022	12/15/2023	Open
HT-001	*Haiti Scoping*	*10/15/2021*	*01/31/2022*	*Closed*
HT-002	HIS support to COVID-19 in Haiti	01/01/2022	11/30/2023	Open
HT-003	Support to SISNU in Haiti	01/01/2022	06/30/2024	Open

Code	Activity Name	Start Date	End Date	Status
HT-004	HIS Support to TB/HIV in Haiti	01/01/2022	12/31/2023	Open
ID-001	Strengthening HIS progression and digital transformation in Indonesia	10/01/2021	12/31/2023	Open
COVID-005	COVID support in Indonesia	08/01/2022	11/30/2023	Open
KE-001	*Support to malaria sub-national tailoring exercise in Kenya*	*01/01/2023*	*08/31/2023*	*Closed*
KE-002	Co-Creation and Operations Start up SOW; Strengthening Malaria Data Systems and Use in Kenya	03/01/2023	07/31/2024	Open
OHS-101	eCHIS in Kenya Phase I	05/01/2023	06/30/2024	Open
PRH-101	eCHIS in Kenya Phase 2	05/01/2023	06/30/2024	Open
MG-001	*Three Health Information System Assessments in Madagascar*	*08/01/2022*	*05/31/2023*	*Closed*
MG-002	Strengthening the HIS in Madagascar	06/01/2023	09/30/2024	Open
ML-001	*Mali Scoping*	*09/16/2021*	*11/30/2021*	*Closed*
ML-002	*Strengthening COVID-19 data quality and use in Mali*	*01/01/2022*	*08/25/2023*	*Closed*
ML-003	Strengthening malaria data quality and use in Mali	06/01/2023	05/31/2024	Open
MW-001	*Malawi Scoping*	*11/01/2021*	*04/30/2022*	*Closed*
MW-002	Strengthening malaria data systems and use in Malawi	03/01/2022	02/28/2024	Open
COVID-008	Scoping Exercise in Namibia; COVID-19 data management support in Namibia	07/25/2022	07/31/2024	Open
NR-001	*Niger Scoping*	*04/01/2021*	*05/31/2021*	*Closed*
NR-002	Strengthening the HIS in Niger	09/02/2021	12/31/2023	Open
NR-003	Strengthening malaria data quality and use in Niger	04/01/2023	03/31/2024	Open
SB-001	*Serbia Scoping*	*11/01/2020*	*05/31/2021*	*Closed*
SB-002	Strengthening HIS Governance and Data Use in Serbia	04/01/2021	03/31/2024	Open
SL-001	Strengthening Malaria Data Systems and Use in Sierra Leone	07/01/2023	06/30/2024	Open
Regional Activities				
ESC-001	*COVID-19 support in Eastern and Southern Caribbean Countries*	*04/01/2022*	*08/23/2023*	*Closed*
ESC-002	COVID-19 support in Eastern and Southern Caribbean Countries	04/01/2022	12/09/2023	Open
ESC-003	COVID-19 vaccine supply chain support in Eastern and Southern Caribbean Countries	07/08/2022	01/08/2024	Open
COVID-001	*COVID-19 support in Eastern and Southern Caribbean Region*	*04/01/2022*	*09/08/2023*	*Closed*
COVID-004	COVID-19 supply chain support in ESC	06/09/2022	07/31/2024	Open
LAC-001	*HIS Support to LAC Countries*	*10/11/2022*	*08/31/2023*	*Closed*
MENA-001	*Support to GHSA information systems in MENA*	*05/10/2021*	*06/30/2022*	*Closed*

Code	Activity Name	Start Date	End Date	Status
Global Technical Activities				
COVID-006	COVID-19 Vaccine Cost Effectiveness Study	04/01/2023	03/31/2024	Open
COVID-007	COVID-19 digital health learning activity	10/01/2022	12/18/2023	Open
COVID-010	COVID-19 operations research vaccine rollout	01/01/2023	03/18/2024	Open
MCH-001	MNCAH Facility Data Use Guidelines	02/14/2022	09/30/2024	Open
OHS-001	Digitize and deploy HPHC Tool	02/23/2021	06/30/2024	Open
OHS-002	Digital supportive supervision	10/01/2021	03/31/2024	Open
OHS-003	GHSA surveillance, data analysis, and Use	10/01/2021	12/31/2023	Open
OHS-004	Country HPHC Implementation	07/01/2022	03/31/2024	Open
OHS-005	Catalytic implementation of the WHO global RHIS strategy	07/01/2022	06/30/2024	Open
OHS-006	Support to Africa CDC Emerging Flagship Initiatives	07/01/2023	06/30/2024	Open
OHS-007	PHC Primer/Learning Exchange	07/01/2023	06/30/2024	Open
PMI-001	Assessing community based information system guidance in PMI priority countries	10/01/2021	12/31/2023	Open
PMI-004	Develop analytical framework for countries to continuously monitor intervention coverage and effectiveness	07/01/2023	06/30/2024	Open
PMI-005	Strengthen sub-national using malaria risk stratification and incidence mapping in PMI focus countries	07/01/2023	06/30/2024	Open
PMI-006	Support the standardized use of the DHIS2 Malaria Module	07/01/2023	06/30/2024	Open
PMI-007	Update and rationalize the content of the RHIS Profiles	07/01/2023	06/30/2024	Open
PMI-008	Automation of Malaria Bulletins	07/01/2023	06/30/2024	Open
PMI-009	Support to the RBM SMERG Secretariat	07/01/2023	06/30/2024	Open
PMI-010	Malaria Global Technical Leadership	07/01/2023	06/30/2024	Open
PMI-011	Integrated Data Repository Matrix Tool for Decision Making	07/01/2023	06/30/2024	Open
XB-008	Global HIS management and leadership	07/01/2021	06/30/2024	Open
XB-009	Digital tool to measure and store country HIS progression	10/01/2021	06/30/2024	Open
XB–010	*Artificial Intelligence and Machine Learning knowledge hub*	*10/01/2021*	*12/31/2022*	*Closed*
XB-012	HIS Technical Capacity Assessment Tool	07/01/2023	06/30/2024	Open
XB-013	Generalize TB D2AC Capacity Assessment Tool	07/01/2023	06/30/2024	Open
XB-014	Country guidelines on establishing data repositories for health programs	07/01/2023	06/30/2024	Open
XB-015	Generalize mRDQA	07/01/2023	06/30/2024	Open

Code	Activity Name	Start Date	End Date	Status
Operations and Global Cross-Cutting Program Activities				
PMI-002	*PMI portfolio startup*	*09/01/2022*	*09/30/2023*	*Closed*
PMI-003	Country portfolio transition	09/01/2022	06/30/2024	Open
XB-001	*Operations Start Up*	*08/01/2020*	*09/30/2021*	*Closed*
XB-002	Country operations support	08/01/2020	06/30/2024	Open
XB-003	Monitoring, evaluation, and learning	08/01/2020	06/30/2024	Open
XB-004	Gender in HIS support	08/01/2020	06/30/2024	Open
XB-005	Knowledge management support	08/01/2020	06/30/2024	Open
XB-006	Communications	08/01/2020	06/30/2024	Open
XB-007	*Technical Start Up and Orientation*	*08/01/2020*	*06/30/2022*	*Closed*
XB-011	Mid-project technical meeting	07/01/2022	06/30/2024	Open

Annex 2. Indicator Achievement

Indicator	Data source(s)	Y3 Achievement	Comment
SO1: Strengthened governance and enabling environment			
1.1: Number of countries and regions engaged by CHISU to improve governance and enabling environment for HIS	Program records	16	CHISU is working on HIS governance in Burkina Faso, Burundi, Côte d'Ivoire, DRC, ESC, Ghana, Haiti, Indonesia, Kenya, Madagascar, Malawi, Mali, Namibia, Niger, Serbia, and Sierra Leone.
1.2: Number of CHISU-supported, standards-based HIS governance processes implemented	Program records	50 BF-3 CI-4 CD-4 ESC-2 GH-2 HT-3 ID-9 KE-2 MG-2 MW-3 ML-4 NR-4 SB-3 Core-5	CHISU supported the HIS SOCI area of *HIS leadership and coordination* through 21 processes. This included support for 30 bodies, including technical working groups (TWGs), coordination groups, and/or eHealth Steering committees in Burkina Faso, Côte d'Ivoire, DRC, Indonesia, Madagascar, Malawi, Mali, Niger, and Serbia. Additionally, CHISU supported: hosting consultative meetings with COVID-19 stakeholders in Burkina Faso, COVID-19 integration in RHIS roadmap in Côte d'Ivoire, malaria scientific days hosting in DRC, conference attendance in DRC, SORMAS transition planning in Ghana, eHealth policy review in Haiti, technical inputs for a Global Fund grant application in Kenya, COVID-19 information system roadmap in Indonesia, and facilitating NMCP leadership on key activities and events in Mali. CHISU supported the HIS SOCI area of *HIS strategic planning* through 10 processes: private sector data availability roadmap development in Côte d'Ivoire, health commodities supply chain strategic plan development in ESC, surveillance system integration strategy planning in ESC, HIS SOCI assessment in Haiti, malaria policy and strategy development in Kenya, HIS SOCI application in Madagascar and Malawi, national assessment to benchmark HIS status in Niger, HIS strategic plan development in Niger, and HIS strategic plan evaluation in Niger. CHISU supported five *core technical activities*: global leadership in HIS evolution, catalytic implementation of the WHO global RHIS strategy, support to Africa CDC Emerging Flagship Initiatives, PHC Primer/Learning Exchange, and support to the RBM SMEWG Secretariat. CHISU supported the HIS SOCI area of *HIS competencies* in SO1 topics through four processes: human resources capacity assessment in Ghana, resource center and community of practice development in Indonesia, HIS SOCI mentorship establishment in Indonesia, and capacity building and digital literacy for digital maturity index and HIS SOCI in Indonesia. CHISU supported the HIS SOCI area of *HIS organizational structure* and functions through three processes: HIS TWG support in Haiti, COVID-19 vaccination system sub-working group support in Indonesia, and SOCI mentorship planning in Serbia. CHISU supported the HIS SOCI area of *Monitoring and Evaluation (M&E) Plan* through five processes: supporting the monitoring committee for HIS strategy in Burkina Faso, supporting malaria M&E activities in DRC, HIS SOCI assessment in Indonesia, M&E of SATUSEHAT in Indonesia, and strategic and action plan monitoring in Serbia. CHISU supported the HIS SOCI area of *Existence of HIS policies and legislation* through two processes: digital health transformation support in Indonesia and technical input for national malaria HIS policies in Malawi.

Indicator	Data source(s)	Y3 Achievement	Comment
1.3: Number and percent of CHISU-supported key governance behaviors that improved	Program records	18 BF-2 ESC-1 HT-1 ID-5 MG-1 ML-3 NR-2 SB-2 Core-1	In Burkina Faso, four multisectoral joint investigations were conducted by the Technical Secretariat for One Health within stipulated time frames. Additionally, the Department of Archives and Documentation has improved accessibility to strategic public health documents through launching a digital archive called Legisanté. In ESC, supply chain strategic roadmap and requirements for the HIS were taken over by the MOH in Saint Vincent and the Grenadines. In Haiti, the Unit of Evaluation and Programming at the MOH incorporated the HIS committee, eHealth policy, and enterprise architecture in their annual work plan. In Indonesia, there is improved collaboration and coordination among HIS stakeholders as a result of the formal decree to establish the HIS TWG; subnational stakeholders are actively implementing the monitoring and evaluation framework for SATUSEHAT; there is improved national capacity to conduct and finance future DMI assessments (Indonesia's version of the HIS SOCI); a core multiparty stakeholder core group was established and is carrying out implementation of the 2023 DMI; and Pusdatin is implementing a strategy to improve digital transformation results measured by DMI for provincial and district health offices and hospitals. In Madagascar, results from the HIS SOCI were incorporated into a newly adopted HIS Strategy. In Mali, the national DQA plan is being implemented by multiple partners and government groups; the national health emergencies group was established and is implementing a roadmap to respond to public health threats; and a Health Emergency Strategic Plan was adopted and is being implemented. In Niger, results from the HIS SOCI were incorporated into a newly adopted HIS Strategy; and the national DQA plan is being implemented. In Serbia, the reconstituted eHealth Steering Committee successfully revised the eHealth Action Plan to respond to new priorities shared by a new Minister of Health, and is actively monitoring its implementation. As a result of the core technical activity PMI-001's list of community-based information system guidance, PMI incorporated it into their technical guidance for countries.
1.4: Number and percent of CHISU-supported countries or regions that advanced in HIS leadership and governance components on the SOCI scale	Formal or informal HIS SOCI assessment, KIIs, program records	0	CHISU completed a baseline HIS SOCI assessment in Madagascar and a Digital Maturity Index in Indonesia. No follow-up HIS SOCI assessments were conducted in FY 23.
SO2: Increased availability and interoperability of quality health data and information systems			
2.1: Number of countries and regions engaged by CHISU to increase availability and interoperability of health data and information systems	Program records	15	CHISU is working on systems and software in Burkina Faso, Burundi, Côte d'Ivoire, DRC, ESC, Ghana, Haiti, Indonesia, Kenya, Madagascar, Malawi, Mali, Namibia, Niger, and Sierra Leone.

Indicator	Data source(s)	Y3 Achievement	Comment
2.2: Number of CHISU-supported systems and software processes developed	Program records	75 BF-15 CI-2 CD-1 ESC-5 GH-9 HT-12 ID-9 KE-1 MG-1 MW-1 ML-8 NR-2 Core-9	CHISU supported 14 processes related to *system maintenance and upgrades*: One Health system maintenance and scale up in Burkina Faso, MS-Surveillance maintenance in Burkina Faso, ENDOS-BF metadata cleanup in Burkina Faso, COVID-19 vaccination data electronic platform customization in Burkina Faso, malaria automated bulletin production in Côte d'Ivoire, DHIS2 configuration and migration in ESC, ESAVI customization in ESC, COVID-19 vaccination tracker configuration in Haiti, electronic health certificate configuration in Haiti, OVC management information system configuration in Haiti, SATUSEHAT mobile migration and enhancement in Indonesia, automated malaria bulletin development in Malawi, automating the malaria bulletin in DHIS2 in Mali, and COVID-19 electronic data management improvements in Mali. CHISU supported nine *core technical* activities: building the web-based digital HIS SOCI tool, maintaining the web-based High Performing Health Care (HPHC) tool, COVID-19 digital health architecture and global goods learning, designing a HIS technical capacity assessment tool, generalizing the TB Data 2 Action Continuum (D2AC) Tool, outlining country guidelines on establishing data repositories for health programs, generalizing the mRDQA Android app and DHIS2 metadata package, building an ad-hoc Jamovi malaria stratification module, and supporting the development of an automation of the malaria bulletin template. CHISU supported the HIS SOCI area of *Hardware* through eight processes: ICT inventory survey and procurement in Burkina Faso, computer hardware and internet access provision in Burkina Faso, ICT equipment audit in Ghana, ICT infrastructure assessment in Ghana, ICT procurement for e-Tracker devices in Ghana, ICT procurement for laptops for SORMAS in Ghana, ICT assessment and procurement in Mali, and ICT assessment and procurement in Niger. CHISU supported the HIS SOCI area of *ICT business infrastructure support* through eight processes: ICT assessment and procurement in Côte d'Ivoire, baseline assessment of HIS in Saint Vincent and the Grenadines (ESC) to inform requirements gathering, COVID-19 e-Tracker server support in Ghana, server and IT support for SISNU in Haiti, National Health Data web portal server support in Haiti, SISNU database and server support in Haiti, TB tracker server support in Haiti, and software application inventory in Mali. CHISU supported the HIS SOCI area of *Aggregate data exchange* through seven processes: data integration into ENDOS-BF in Burkina Faso, DHIS2 developer training with One Health administrators in Burkina Faso, interoperability between malaria applications and data repository in Ghana, interoperability between SORMAS and DHIMS2 in Ghana, OVC management information system (MIS) data integration into SISNU in Haiti, ensuring the functionality of SISNU-MESI integration in Haiti, and interoperability of DHIS2 applications in Niger. CHISU supported the HIS SOCI area of *Networks and internet connectivity* through five processes: support for internet connection for multiple levels of the One Health ministries in Burkina Faso; internet service provision for Expanded Program on Immunization (EPI) managers in Burkina Faso; support for internet connection for departmental directorates and units at the MOH in Haiti; support for internet connection for UEP, the TB program, and departmental directorates in Haiti; and support for internet connection for multiple layers of the health system in Mali. CHISU supported the HIS SOCI area of *Data and exchange standards* through four processes: development of interoperability data standardization guidelines, data exchange updates in COVID-19 vaccination systems, and FHIR mediator development in Indonesia; and interoperability maturity assessment in Mali. CHISU supported the HIS SOCI area of *Indicator registry* through three processes: human resources management information system development in ESC, mRDQA DHIS2 application configuration in Kenya, and enabling the migration of the entomology database metadata into DHIS2 in Mali. CHISU supported the HIS SOCI area of *HIS training and education* in SO2 topics through three processes: training on MS-Surveillance at the regional and district levels in Burkina Faso, cybersecurity and data protection training in Ghana, and systems administration training in Ghana.

Indicator	Data source(s)	Y3 Achievement	Comment
			CHISU supported the HIS SOCI area of *Business continuity processes and policies* through three processes: data collection and management system assessment in Burkina Faso, HIS requirements gathering in ESC, and digitization needs assessment in Madagascar.
			CHISU supported the HIS SOCI area of *Data exchange security* through two processes: data privacy policy review in Indonesia and data security training in Indonesia.
			CHISU supported the HIS SOCI area of *HIS competencies* in SO2 topics through two processes: One Health training of trainers in Burkina Faso and HIS tool capacity assessment in DRC.
			CHISU supported the HIS SOCI area of *HIS standard guidelines* through two processes: implementation of Indonesia Health Services SATUSEHAT in Indonesia and the development of standards-based system interoperability guidelines in Mali.
			CHISU supported the HIS SOCI area of *Terminology management* through two processes: implementation of International Classification of Diseases (ICD) 11 in ENDOS-BF in Burkina Faso and work on health data dictionaries such as translation of SNOMED CT for SATUSEHAT in Indonesia.
			CHISU supported the HIS SOCI area of *Enterprise architecture* through two processes: drafting a national health enterprise architecture in Haiti and support for the completion and communication of enterprise architecture in Indonesia (note this support was canceled in consultation with the Digital Transformation Office in FY 23 Q2).
			CHISU supported the HIS SOCI area of *Master facility list* through one process: support for the drafting of a procedure manual for the master facility list platform in Burkina Faso.
2.3: Number of CHISU-supported electronic systems that were scaled or enhanced	Program records	22 BF-3 ESC-2 GH-1 HT-3 ID-10 KE-1 MW-1 Core-1	CHISU scaled 10 systems: ENDOS-BF to the health facility level in the Center East region and One Health for events-based surveillance to the community level in three regions in Burkina Faso; COVID-19 and MCH vaccination e-Trackers in two regions in Ghana; COVID-19 vaccination tracker to health facilities in Haiti; SATUSEHAT to the health facility level in East Java, Central Java, West Java, South Sulawesi, and DKI Jakarta regions in Indonesia; and eCHIS in Kenya. CHISU enhanced 12 systems: configured the joint investigation form in the One Health information system in Burkina Faso; completed the OpenHRMS database to manage health professionals in Saint Lucia (ESC); launched the eSAVI and DHIS2 cloud instances to manage COVID-19 vaccination data in Suriname (ESC); launched the *Passe Sanitaire* for Electronic Health Certificate for COVID-19 vaccine recipients and developed and piloted a new OVC system with migration of legacy data in Haiti; supported migration of the PeduliLindungi app to SATUSEHAT Mobile and added electronic medical record (EMR) data, developed and launched SIPK (health financing information system) to collect, review, and analyze aggregate health financing data, enhanced SITB (TB information system) to enable a new application programming interface (API) service for the TB suspected patients module, configured a new ANC module in the ePuskesmas EMR that covers 29 Puskesmas in DKI Jakarta, and configured a new TB module in the ePuskesmas EMR that covers 39 Puskesmas in Malang district in Indonesia; completed the automated malaria bulletin in the national DHIS2 in Malawi; and launched the digital HIS SOCI platform.

Indicator	Data source(s)	Y3 Achievement	Comment
2.4: Number of CHISU-supported electronic systems with newly enabled interoperability or readiness for interoperability	Program records	32 BF-1 ID-29 ML-1 NR-1	In Burkina Faso, CHISU newly enabled interoperability between ENDOS-BF and the HIV tracker. In Indonesia, CHISU completed the interoperability mediator (OpenHIM) to ensure data exchange between SATUSEHAT and other systems, completed end-to-end testing of SATUSEHAT, and enabled new interoperability with SATUSEHAT for DHIS2 in DKI Jakarta and South Sulawesi and 26 other EMR systems at subnational level that serve hospitals and primary care facilities. In Mali, CHISU completed new interoperability between YNIETTE, an app for travelers, and the national COVID-19 DHIS2. In Niger, CHISU completed new interoperability between MOH systems and DHIS2.
2.5: Number and percent of CHISU-supported countries or regions that advanced in HIS ICT infrastructure and HIS standards and interoperability components on the SOCI scale	Formal or informal HIS SOCI assessment, KIIs, program records	0	CHISU completed a baseline HIS SOCI assessment in Madagascar and a Digital Maturity Index in Indonesia. No follow-up HIS SOCI assessments were conducted in FY 23.
SO3: Increased demand and use of health data and information to address health priorities, gaps, and challenges			
3.1: Number of countries and regions engaged by CHISU to increase demand and use of health data and information to address health priorities, gaps, and challenges	Program records	15	CHISU is working on data use in Burkina Faso, Burundi, Côte d'Ivoire, DRC, ESC, Ghana, Haiti, Indonesia, Kenya, Madagascar, Malawi, Mali, Namibia, Serbia, and Sierra Leone.
3.2: Number of countries and regions engaged by CHISU to increase quality of HIS data	Program records	15	CHISU is working on data quality in Burkina Faso, Burundi, Côte d'Ivoire, DRC, ESC, Ghana, Haiti, Indonesia, Kenya, Madagascar, Mali, Malawi, Namibia, Niger, and Sierra Leone.

Indicator	Data source(s)	Y3 Achievement	Comment
3.3: Number of CHISU-supported data use processes implemented	Program records	64 BF-9 CI-1 CD-3 ESC-4 GH-5 HT-7 ID-5 KE-6 MG-2 MW-4 ML-6 SB-3 Core-9	CHISU supported the HIS SOCI area of *Information/data availability* through 23 processes: training to expand access to event-based surveillance (EBS) in the One Health information system in Burkina Faso, capacity building for supportive supervision for COVID-19 vaccination campaigns in Burkina Faso, elaboration of the roadmap for a nutrition dashboard in Burkina Faso, deployment of ENDOS-BF at the health facility level in Burkina Faso, development of a public dashboard of COVID-19 data in Burkina Faso, development of an automated malaria bulletin in DHIS2 in Côte d'Ivoire, production of national and provincial malaria bulletins in DRC, production of communications materials on the regional COVID-19 response in ESC, production of COVID-19 monthly newsletters in ESC, COVID-19 e-Tracker training implementation plan in Ghana, DHIMS2 e-Tracker training for COVID-19 and maternal and child health services in Ghana, SORMAS training in Ghana, maintenance of SISNU in Haiti, OVC MIS roll out and historical data importation in Haiti, integration of TB data into the Carte Sanitaire in Haiti, implementation of the updated *Carte Sanitaire* in Haiti, development and enhancement of dashboards in Indonesia, eCHIS training in Kenya, HPHC tool assessment in Madagascar, technical assistance for delivery and distribution of facility registers in Malawi, production of regional and national yearbook for local HIS and the hospital information system in Mali, retrospective data entry into the COVID-19 data management system in Mali, and capacity building for data analysis and use in Mali. CHISU supported the HIS SOCI area of *Data synthesis and communication* through 15 processes: support for performance review sessions for malaria indicators in Burkina Faso, training on use of ENDOS-BF for decisionmaking in Burkina Faso, COVID-19 data extractions and review in Burkina Faso, assisting with COVID-19 analysis and communication materials in ESC, organizing a regional learning event in ESC, supporting analysis of malaria data in Ghana, supporting data analysis and information products that cover COVID-19 data in Haiti, developing and disseminating the annual statistical yearbook and quarterly bulletin in Haiti, developing COVID-19 vaccination data use tools and information products in Indonesia, supporting subnational tailoring of malaria interventions in Kenya, supporting epidemiologic surveillance triangulation and analytics in Kenya, production of an automated malaria bulletin in DHIS2 in Malawi, supporting data review meetings in Malawi, supporting facility-level dashboards in Malawi, and assisting IPH Batut with data analysis and visualization in Serbia. CHISU supported nine *core technical* activities: digital supportive supervision; expanding the use of the HPHC tool in Ethiopia, Ghana, Kenya, Mozambique, and the Philippines; development of Global Health Security Agenda (GHSA) data use case studies; analysis of COVID-19 vaccination strategy cost-effectiveness; studying success factors in COVID-19 vaccination roll out; development of an analytical framework for intervention coverage and effectiveness data; revisions to the DHIS2 malaria modules and training materials; review and update of the RHIS country profiles; and development of an integrated data repository matrix tool for decision making. CHISU supported the HIS SOCI area of *Reporting and analytics features* through six processes: enhancement of COVID-19 vaccination data analytics platforms in Indonesia, provision of data analytics from the FHIR database in Indonesia, presentation of proposals for advanced analytics on COVID-19 in Mali, use of AI for allocation of COVID-19 vaccines in Mali, organize NMCP indicators performance review in Mali, and presentation of an AI prototype for bed occupancy in Serbia. CHISU supported the HIS SOCI area of *Data use competencies* through six processes: provision of technical assistance for supportive supervision in DRC, strengthening data review meetings in DRC, updating a data analysis and use training curriculum in Kenya, increasing the use of routine data in Kenya, supporting an eCHIS training of community health assistants at the county level in Kenya, and monitoring the use of dashboards and scorecard mobile applications at the facility level in Madagascar.

Indicator	Data source(s)	Y3 Achievement	Comment
			CHISU supported the HIS SOCI area of *HIS training and education* in SO3 topics through two processes: engagement with a local university to provide advanced analytics to the Ghana Health Service in Ghana, and training on the use of the OVC MIS in Haiti.
			CHISU supported the HIS SOCI area of *Data collection alignment with workflow* through one process: performing a digitization assessment for immunization in Serbia.
			CHISU supported the HIS SOCI area of *HIS competencies* in SO3 topics through one process: training on data analysis using the One Health platform in Burkina Faso.
			CHISU supported the HIS SOCI area of *User/stakeholder engagement* through one process: training stakeholders on data use in Indonesia.
3.4: Number of CHISU-supported data quality processes implemented	Program records	34 BF-7 CI-1 CD-2 ESC-5 GH-3 HT-2 ID-2 MW-3 ML-5 NR-2 Core-2	CHISU supported the HIS SOCI area of *Data quality assurance and quality* control through 25 processes: supportive supervision of provincial health agents to assess and build capacity in carrying out One Health activities in Burkina Faso, design of data quality improvement roadmaps for malaria data in Burkina Faso, support to malaria data quality assessment (mDQA) sessions at the regional level in Burkina Faso, joint supervision for malaria data collection and analysis in Burkina Faso, data validation workshops in Burkina Faso, retrospective COVID-19 vaccination data entry and data quality checks in Burkina Faso, harmonization of the population denominator used for vaccine data management in Côte d'Ivoire, mRDQAs in provinces in DRC, support supportive supervision for provincial malaria activities in DRC, assessing and improving COVID-19 vaccination data quality in ESC, supporting data verification reviews and monitoring action plans in Ghana, supporting a data quality assessment and assurance plan for SORMAS in Ghana, developing and implementing data validation and verification processes for the COVID-19 vaccination tracker in Haiti, supporting a TB data quality workshop in Haiti, conducting national and regional trainings for data managers in Indonesia, documentation of integrated supportive supervision and mentoring action plans and data quality review (DQR) in DHIS2 in Malawi, support the MOH to use the DQR tool in Malawi, identify data quality issues in Malawi, develop and implement a data quality assurance plan in Mali, support the use of a DQR module to assess the quality of HMIS data and develop action plans in Mali, organize data use competitions in Mali, train regional staff on the mRDQA tool in Mali, support training on the quality of routine malaria data in DHIS2 in Mali, install a DQR module in DHIS2 in Niger, and develop a data quality assurance plan in Niger. In the HIS SOCI area of *Data management*, CHISU supported seven processes: supervision at the central, regional, district, and health facility levels in Burkina Faso, COVID-19 vaccination data quality review in ESC, training to support data quality at clinics and sentinel sites in ESC, support for COVID-19 vaccine logistics information management system enhancements in ESC, warehouse management system assessment in ESC, development of SOPs for SORMAS in Ghana, and support for provincial-level SOPs in Indonesia. CHISU supported two *core technical* activities: community-based information system guideline application, and conducting a landscape assessment on where the 2019 WHO Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) Use of Facility Data Guidelines have been applied and are in use and making necessary updates.

Indicator	Data source(s)	Y3 Achievement	Comment
3.5: Number and percent of CHISU-supported key data use behaviors that improved	Program records	11 BF-3 CD-1 GH-2 HT-1 MW-1 ML-1 SB-2	In Burkina Faso, the One Health Technical Secretariat conducted multisectoral joint investigations as a result of event notifications from the One Health events-based surveillance; as a result of one of those investigations, risk mitigation actions were taken to respond to two rabies deaths by conducting a rabies vaccination campaign for pets; and subnational training and local joint investigations are being conducted independently by provincial and regional One Health trainers. In DRC, malaria data review meetings are being integrated with MCH using SOP guidelines for data analysis at all levels of the health system. In Ghana, health facilities are entering data in and using information directly in the COVID-19 and malaria e-Trackers. For malaria, this is after attending the data analysis, visualization, interpretation and use training. In Haiti, the annual statistical report was produced and disseminated by the Unit for Evaluation and Programming. In Malawi, the NMCP is using malaria data visualizations directly in the national DHIS2 to create presentations, to monitor programs, and to create targets. In Mali, the COVID-19 surveillance data in DHIS2 are being used to populate the daily situation report. In Serbia, the annual statistical yearbook is now released in a machine-readable format, thereby advancing the use of data and IPH Batut is being more responsive to data use requests from a variety of stakeholders using more varied analysis.
3.6: Number and percent of CHISU-supported key data quality behaviors that improved	Program records	9 BF-1 CD-1 GH-2 HT-1 MW-2 ML-1 NR-1	In Burkina Faso, ENDOS-BF data quality has improved in two CHISU-supported regions as a result of decentralized data entry, use of the WHO DQR app, and data quality assessments. In DRC, the MOH is using a novel index to score data quality during quarterly data analysis meetings to identify and address issues. In Ghana, SORMAS data quality has improved through the use of a DQA checklist and scaling up availability of devices and district-level malaria data validation and verification activities are now routinized and being conducted independently. In Haiti, data quality and verification procedures were adopted and incorporated into the Unit of Evaluation and Programming SISNU procedures manual. In Malawi, the NMCP is addressing data quality issues directly within DHIS2, rather than exporting and resolving issues outside of the system. Districts are conducting supportive supervision visits and improving data quality and coverage. In Mali, best practices in COVID-19 surveillance data quality were celebrated leading to improved motivation and shared good practices. In Niger, data quality in four CHISU-supported regions in the national DHIS2 increased from below 45 percent timely submission of reports to above 60 percent. All are now exceeding the national target of 60 percent.
3.7: Number and percent of CHISU-supported countries or regions that advance in the data use component on the SOCI scale	Formal or informal HIS SOCI assessment, KIIs, program records	0	CHISU completed a baseline HIS SOCI assessment in Madagascar and a Digital Maturity Index in Indonesia. No follow-up HIS SOCI assessments were conducted in FY23.

Indicator	Data source(s)	Y3 Achievement	Comment
3.8: Number and percent of CHISU- supported countries or regions that advance in the data quality assurance component on the SOCI scale	Formal or informal HIS SOCI assessment, KIIs, program records	0	CHISU completed a baseline HIS SOCI assessment in Madagascar and a Digital Maturity Index in Indonesia. No follow-up HIS SOCI assessments were conducted in FY23.
SO4: Strengthened organizational development of local nongovernmental partners for sustained data use			
4.1: Number of local partners engaged by CHISU to improve practices and capacities that would enable them to receive direct assistance for HIS programming	Program records	2 ESC-1 ID-1	CHISU is working in an intentional and demand-driven performance improvement process with one local partner in Indonesia and is in discussions to finalize agreements with one local partner in ESC.
4.2: Percent of CHISU-assisted organizations with improved performance [CBLD-9]	Program records	0% ID-0/1	After completing an organizational capacity assessment with Castellum Digital Indonesia, training and mentoring was initiated. However, the performance improvement process has not yet been completed to assess improvement.
4.3: Number and percent of CHISU-supported local organizations that meet criteria to receive direct funding for HIS programming	Program records	0	No local partners have been assessed for eligibility using the USAID Non-U.S. Organization Pre-Award Survey (NUPAS).
4.4: Number and percent of CHISU-supported local partners that successfully applied for direct funding for HIS programming	Program records	0	No local partners have been assessed for eligibility using the USAID Non-U.S. Organization Pre-Award Survey (NUPAS).

Indicator	Data source(s)	Y3 Achievement	Comment
Cross-cutting			
5.1: Number of people trained in skills and concepts that address HIS governance and enabling environment, HIS interoperability, data quality, demand, and use	Program records	8,866	This includes 1,941 in Burkina Faso, 1,074 in Ghana, 247 in Haiti, 1,281 in Indonesia, 3,473 in Kenya, 84 in Madagascar, 202 in Mali, 362 in Malawi, 115 in Niger, and 87 in Serbia. Of the participants who reported their sex, 54 percent (4,747) were males and 46 percent (4,069) were females. The largest stakeholder group was from MOHs (75 percent, 6650), 17 percent (1,530) were from other government ministries, 5 percent (448) were from the private sector, and 2 percent were from other stakeholder types. Nearly 40 percent of those trained came from the community level (3,473), a third came from the subnational level (2,826), 15 percent came from the health facility level (1,333), and 13 percent (1,123) came from the national level.
5.2: Number of newly adopted global goods that are used by stakeholders in CHISU-supported countries or regions	Program records	3	CHISU supported direct use of the HIS SOCI toolkit in Indonesia and Madagascar, the OpenHIM mediator in Indonesia, and the interoperability maturity toolkit in Mali.
5.3: Number of global goods that are adjusted or augmented based on stakeholder feedback in CHISU-supported countries or regions	Program records	2	CHISU supported the use of numerous global goods including HIS SOCI toolkit, DHIS2, SORMAS, RapidPro, and OpenHIM mediator. In FY 23, this use resulted in augmentation to two global goods. The HIS SOCI toolkit was launched on a digital platform. The OpenHIM mediator was augmented through the addition of a validation layer to ensure that the data shared meets the validation threshold, and CHISU supported application of optimization strategies to increase performance of the software in sharing large datasets.
Data security and privacy			
6.1: Number and percent of CHISU-supported countries where CHISU activities include data security	Program records	4 (27 percent)	CHISU is working on data security and privacy in Burkina Faso, Ghana, Indonesia, and Madagascar.
6.2: Number of CHISU-supported countries or regions that have financial, technical, and human resources dedicated to data security	Program records	2	Madagascar documented on the HIS SOCI scale: 2 on HIS policies, 1 on policy compliance, and 3 on data security exchange. Indonesia documented on the HIS SOCI scale: 2 on HIS policies and policy compliance, and 2.8 on interoperability (contains data security exchange).

Indicator	Data source(s)	Y3 Achievement	Comment
6.3: Number and percent of CHISU-supported countries or regions with improved data security	Program records	2	In Indonesia, the adoption of ISO certification has seen an increased boost in security implementation in the SATUSEHAT platform, including encryption and masking of data implemented to ensure the privacy of data subjects' personally identifiable information, authentication and authorization of devices accessing the SATUSEHAT infrastructure.
			In Ghana, the cybersecurity training helped system administrators to improve the server and network security on the GHS server infrastructure.
Gender			
7.1: Number and percent of HIS products or events created or conducted with CHISU support which include gender considerations	Program records	107 (51 percent)	Out of the 212 knowledge-sharing products and events (see 8.1 and 8.2 below), 107 (51 percent) considered gender. This includes 18 from Burkina Faso, 10 from ESC, six from Ghana, six from Haiti, 25 from Indonesia, three from Kenya, one from Malawi, 24 from Mali, one from Niger, two from Serbia, and 11 from global-level core activities.
Knowledge management			
8.1: Number of knowledge-sharing products to which CHISU contributed	Program records	62	This includes two products from Burkina Faso, seven from DRC, 10 from ESC, nine from Ghana, six from Haiti, six from Indonesia, two from Kenya, four from Malawi, six from Mali, three from Niger, three from Serbia, and four from global-level core activities.
8.2: Number of knowledge-sharing events in which CHISU participated	Program records	150	This includes 28 from Burkina Faso, one from Côte d'Ivoire, three from DRC, eight from Ghana, five from Haiti, 49 from Indonesia, five from Kenya, six from Malawi, 25 from Mali, six from Niger, five from Serbia, and nine from global-level core activities.

Annex 3. Communication Products

Blog posts

- Reflecting on the role of digital health and transformation during this year's UN General Assembly
- Sharing experiences using the High Performing Health Care Tool in Ethiopia, Madagascar, Pakistan, and the Philippines
- Moving from data to action: Improving data quality through subnational-level trainings in Indonesia
- Supporting Serbia's coordination body for health information system strengthening
- Digital Approaches to Supportive Supervision in Ghana to Improve Health Service Delivery
- Assessing human resource capacity for ownership and management of Ghana's disease surveillance and response system
- Using interoperability to improve health services: Improving the exchange of tuberculosis data in Indonesia
- Mali: Exploring the use of artificial intelligence for improved COVID-19 vaccine allocation
- Monitoring trends and refocusing efforts: The role of data in improving maternal and newborn health
- Fostering multi-stakeholder collaboration to strengthen health information systems in Indonesia
- Sharing experiences using the High Performing Health Care Tool in Ethiopia, Madagascar, and the Philippines
- Toward zero: Strengthening health information systems to eliminate malaria in Malawi and Ghana
- Integrating Gender in HIS Strengthening
- Data protection: CHISU supports Ghana Health Service IT staff cybersecurity and systems administration training
- Integrating a gender perspective to foster more equitable health information systems"

- Scaling up district malaria data quality improvement interventions in Malawi
- Can Digital Transformation of Health Keep the Pace of Technological Innovation?
- Mali: Improved COVID-19 surveillance data quality enables better decision-making
- Implementing tools and building capacity around data quality review in Niger
- Improving Haiti's national health data dashboard to support their cholera response
- Collaborating across sectors to prevent rabies in Burkina Faso

Event posts

- Local and Global Health System Performance Monitoring
- Using the HPHC Tool in LMICs
- Webinar - Integrating Gender in Health Information System Strengthening: Experiences from Burkina Faso, Ghana, and Indonesia

Success stories

- CHISU Results in Action: Improving malaria data quality in Burkina Faso using district-level data validation and involving head nurses
- CHISU Results in Action: Creating an online "Legisanté" library to increase accessibility of Burkina Faso's strategic public health documents
- CHISU Results in Action: Improving the malaria data quality score in nine provinces in the Democratic Republic of the Congo from 2018 to 2023
- CHISU Results in Action: Improving health and supply chain systems to increase commodity availability in Saint Vincent and the Grenadines

- CHISU Results in Action: Transitioning to electronic transactional data capture in a complex implementation environment in Ghana's Savannah region
- CHISU Results in Action: Streamlining orphans and vulnerable children (OVC) case management in Haiti
- CHISU Results in Action: Improving data quality and use in eight districts in Malawi contributes to increased uptake of malaria prevention services
- CHISU Results in Action: Promoting good data quality through data competitions in Mali
- CHISU Results in Action: Strengthening organizational development of local partners for a stronger health information system in Indonesia
- CHISU Results in Action: Collectively mobilizing health information system stakeholders for data quality assurance plan development in Niger
- CHISU Results in Action: Automating visualizations of geospatial data for better public health decision making in Serbia
- CHISU Results in Action: Leveraging Software to Improve Data Visualization at the Institute Of Public Health of Serbia "Dr. Milan Jovanovic Batut"
- CHISU Results in Action: Fostering Cross-Country Learning to Strengthen Health Information Systems in Saint Lucia
- CHISU Results in Action: Data Quality Assurance to Improve Decision Making in Mali
- CHISU Results in Action: Developing a New Malaria Strategy to Guide Implementation of Malaria Activities in Malawi From 2023 to 2030
- CHISU Results in Action: Health Information System Assessment Tool Implementation in Two Countries
- CHISU Results in Action: Strengthening Subdistrict Facility Malaria Data Validation and Verification Capacity Improves

Routine Malaria Data Quality in Sunyani West District

- CHISU Results in Action: Building Digital Maturity for Digital Health Transformation in Indonesia
- CHISU Results in Action: Optimizing Health System Resources in Haiti Through the Carte Sanitaire
- CHISU Results in Action: Multisectoral Collaboration for Rabies Prevention: The One Health Approach
- Linking COVID-19 surveillance and vaccination programs with DHIS2 for better patient follow-up
- Results in Action: Implementing Tools and Building Capacity around Data Quality Review in Niger
- Results in Action: Helping Improve COVID-19 Surveillance Coordination in Mali
- Results in Action: Satu Sehat - Indonesia goes Big with Health Information Exchange Platform for the Entire Country
- Results in Action: Haiti Launches Annual Reports on Health System Performance
- Results in Action: Creating a Flexible and Responsive Context Enhances Malaria E-Tracker in Ghana
- Results in Action: Joint Supervision Enables Agile COVID-19 Response in Burkina Faso

Webinars and other recordings

- Webinar: Local and Global Health System Performance Monitoring
- Integrating Gender in HIS Strengthening: Experiences from Burkina Faso, Ghana, and Indonesia
- Mali JT 20H - Award Ceremony: Regional Competition on Data Quality in the Bamako Health District
- Commonalities and Differences in Ethiopia, Madagascar and the Philippines HPHC Tool HS Assessments
- CHISU: Time to deliver zero malaria
- International Women's Day Message: CHISU Chief of Party in Indonesia Leah McManus
- International Women's Day Message: CHISU Resident Advi-

sor in Mali Dr. Madina Kouyate

- International Women's Day Message: CHISU Resident Advisor in Burkina Faso Dr. Rahim Kebe
- International Women's Day Message: CHISU Resident Advisor in Niger Dr. Diby Konan
- International Women's Day Message: CHISU Data Analyst in Ghana Samuel Owusu
- International Women's Day Message: CHISU MEL Officer Lauren Gilliss
- Webinar: Strengthening HIS Governance for Global Health Security – Findings from a Landscape Assessment in MENA
- CHISU Program Director, Steve Ollis, Pop-Up Studio interview at the Global Digital Health Forum 2022

Newsletter

- CHISU Bulletin: Reflecting on our progress at the mid-project mark
- CHISU Bulletin: Toward our mid-project mark
- CHISU Bulletin: Here is to 2023

Resources

- Digital Approaches to Supportive Supervision: Guidance Framework
- Country Briefs
- CHISU Annual Report October 2021–September 2022
- CHISU Semiannual Report - October 2022 to March 2023
- CHISU Highlights from October 2021 - September 2022

Social media

CHISU published 1.3K posts with a combined 6.11 percent average engagement rate on its social media platforms:

- LinkedIn: @CHISU Program
- X (formerly known as Twitter): @CHISUprogram
- Facebook: @CHISUProgram
- Instagram: @chisuprogram
- YouTube: @CHISUProgram

Promotional material

Visual and icon libraries
Conference postcards and other promotional materials
Conference posters and presentations
Webinar banners and other promotional materials
Social media assets to promote conference participation, events, and webinars, explain technical concepts, illustrate programmatic achievements, and mark observance dates
Photo tiles for social media and presentations
Thematic illustrations and other data visualization
Infographics
Event promotional and signage materials
Country and global presentations, reports, briefs, leaflets, newsletters, and other products
Country and global banners, office signage, training and other communication materials

Launched

- New website look and feel cascaded to other CHISU web properties and tools
- Tools indexed web tab
- Web interactive report
- New "Where we work" web page and georeferenced map
- New country web pages with cross-referenced auto-populated content
- Success stories indexed web tab
- 508 compliant color palette and adapted templates

www.chisuprogram.org

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