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COUNTRY HEALTH INFORMATION SYSTEMS AND DATA USE

COUNTRY HEALTH INFORMATION SYSTEMS AND DATA USE

FY 22 Annual Report

October 1, 2021 to September 30, 2022

The Country Health Information Systems and Data Use (CHISU) program is the 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.

Cover photos from left to right:

Partners carried out a gap analysis to help inform Serbia's Digital Transformation Roadmap (Photo: CHISU Serbia)
System users in Mali received tablets to enter data to inform the national COVID-19 response (Photo: CHISU Mali)
Participants in the SOCI workshop in Malawi explored health information system gaps (Photo: CHISU Malawi)

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Acronyms

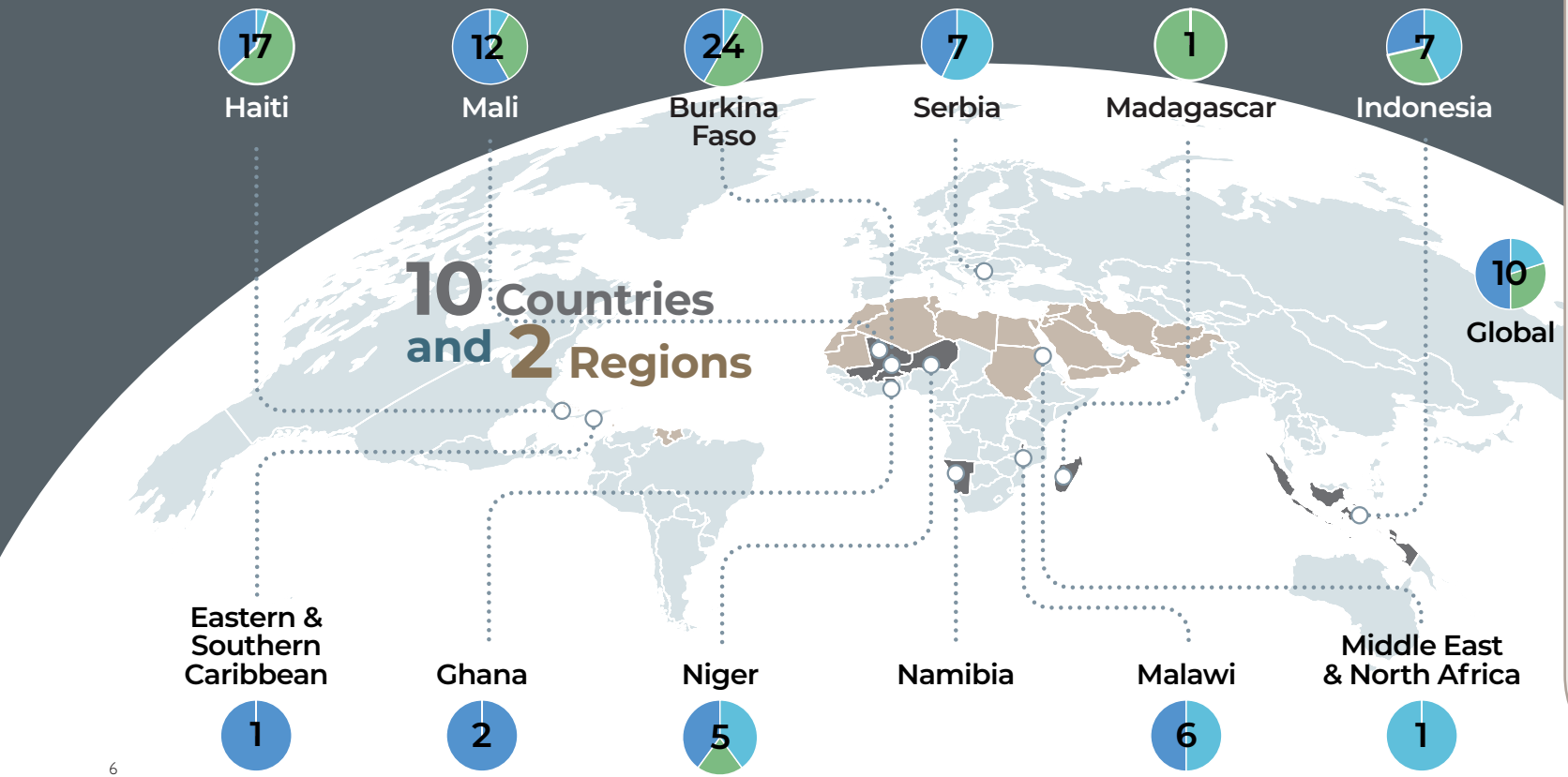
AI	Artificial Intelligence
AFRO	Africa Regional Office
AMELP	Activity Monitoring, Evaluation, and Learning Plan
CBIS	Community-based Information Systems
CHISU	Country Health Information Systems and Data Use
CMED	Central Monitoring and Evaluation Department
COVID-19	Coronavirus Disease
DH&I	Digital Health and Interoperability
DHD	Digital Health Division
DHIS2	District Health Information Software, Version 2
DQA	Data Quality Assessments
DQR	Data Quality Review
DRS	Direction des Régions de la Santé (Regional Health Directorate)
DSIS	Direction des Systèmes d'Information en Santé (HIS Directorate)
DS or DSS	Direction des Statistiques Sectorale (Statistics Directorate)
DTO	Digital Transformation Office
EBS	Events-based Surveillance
EMRO	Eastern Mediterranean Regional Office
ENDOS	Entrepôt de Données Sanitaires (Burkina Faso's national DHIS2 instance)
ESC	Eastern and Southern Caribbean Region
FHIR	Fast Healthcare Interoperability Resources
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
ICD-10 or -11	International Classification of Diseases, 10th or 11th Revision
ICT	Information Communication Technology
IHS	Indonesia Health Service
INSP	Institut National de Santé Publique (National Institute of Public Health)
IPH	Institute of Public Health
JSI	JSI Research & Training Institute
KII	Key Informant Interviews
KM	Knowledge Management
MEL or M&E	Monitoring, Evaluation, and Learning or Monitoring and Evaluation
MENA	Middle East and North Africa
MESI	Monitoring, Evaluation, and Surveillance Interface
MFL	Master Facility List
MIS	Management Information System
ML	Machine Learning
MNH	Maternal and Newborn Health
MOH	Ministry of Health
MSPP	Ministry of Public Health Protection
NMCP	National Malaria Control Programme
OVC	Orphans and Vulnerable Children
PHD	Public Health Directorate
PMI	President's Malaria Initiative
RHIS	Routine Health Information Systems
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
SISNU	Système d'Information Sanitaire Unique (Haiti's national DHIS2 instance)
SITB	Tuberculosis Information System
SMS	Short Message Service
SO	Strategic Objective
SOCI	HIS Stages of Continuous Improvement
SOP	Standard Operating Procedure
TB	Tuberculosis
TOR	Terms of Reference
TWG	Technical Working Group
UEP	Unit of Evaluation and Programming
USAID	United States Agency for International Development
USG	United States Government
WAHO	West African Health Organization
WHO	World Health Organization
XB	Cross Bureau

Overview of CHISU's Achievements

CHISU HIGHLIGHTS | OCT 2021 - SEP 2022

The Country Health Information Systems and Data Use (CHISU) program is a five-year USAID funded cooperative agreement (2020-2025) focused on strengthening health information systems (HIS) to increase the quality, availability, and use of health data to improve the health of communities around the world.

As USAID's flagship HIS and data project, CHISU works around four strategic objectives, with cross-cutting emphasis on gender integration into data transformation efforts. CHISU has a defined, measurable, and repeatable approach, tailored to each country or regional context and strategy, which can demonstrate progression in a country's health information systems and digital journey. Important in this journey is identifying and empowering local institutions. This model allows for rapid response on the ground.



10 Global Technical Activities

- High Performing Health Care (HPHC) Tool
- HPHC Expansion
- Digital Supportive Supervision
- Global Health Security Surveillance
- Community Based Information Systems (CBIS) Guidance
- Digital Stages of Continuous Improvement (SOCI) Assessement Tool
- Artificial Intelligence (AI) and Machine Learning (ML) Knowledge Hub
- Global HIS Management and Leadership
- Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) Facility Data Use Guidelines
- Catalytic Implementation of the WHO Global Routine Health Information Systems (RHIS) Strategy

19 standards-based HIS governance processes implemented to strengthen governance and enabling environments

Burkina Faso

A new HIS Strategic Plan was developed and validated with CHISU support. Results from the SOCI assessment conducted by the program helped inform it, pointing out HIS strengths and weaknesses and charting the way forward.

Serbia

Serbia adopted a new eHealth Strategic Plan in May 2022, creating a digital transformation roadmap for the country. CHISU organized multiple workshops to define the next steps and new government priorities.

34 systems and software processes developed to increase the availability and interoperability of quality health data and information systems

Burkina Faso

CHISU supported interoperability between ENDOS, the national HMIS, and three applications enabling digitization of community health data.

Haiti

CHISU supported enhancements to the national data web portal, Carte Sanitaire, to include COVID-19 tracker vaccination data.

Indonesia

CHISU supported the launch of Satu Sehat, a national health information exchange platform that will make health records available throughout the country.

Madagascar

CHISU is implementing the HPHC tool, to provide decision makers valuable insights on stakeholder perception on performance of the health system.

40 data quality and use processes implemented to increase demand and use of health data and information to address health priorities, gaps, and challenges

Haiti

The national annual statistical reports for 2020 and 2021 were developed, published, and disseminated at a launch event with CHISU support.

Indonesia

Dashboards for routine immunization, including disaggregation to the community health clinic level, were developed based on identified data needs.

Mali

The dashboards of the COVID-19 tracker (surveillance, vaccination) were analyzed and adapted to meet the information needs of decision-makers.

Serbia

A prototype was developed to demonstrate how AI can be leveraged to predict bed occupancy and allocation across health facilities.

Knowledge sharing

- **4,080** professionals trained
- **78** knowledge-sharing events
- **30** knowledge-sharing products

Gender

- **46** products and events with gender considerations
- **70** ongoing gender integration activities
- **27** gender integration activities completed

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 Research & Training Institute, Inc. (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 evolution. 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, and 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 second year of implementation, October 1, 2021 to September 30, 2022. Activities implemented in this fiscal year (FY) are listed in Annex 1. They include six scoping exercises; 16 country-level activities in nine countries; six regional-level activities in two regions; ten global technical activities; six cross-cutting global program activities supported with cross-bureau (XB) funding; and two President's Malaria Initiative (PMI)-funded operational activities.

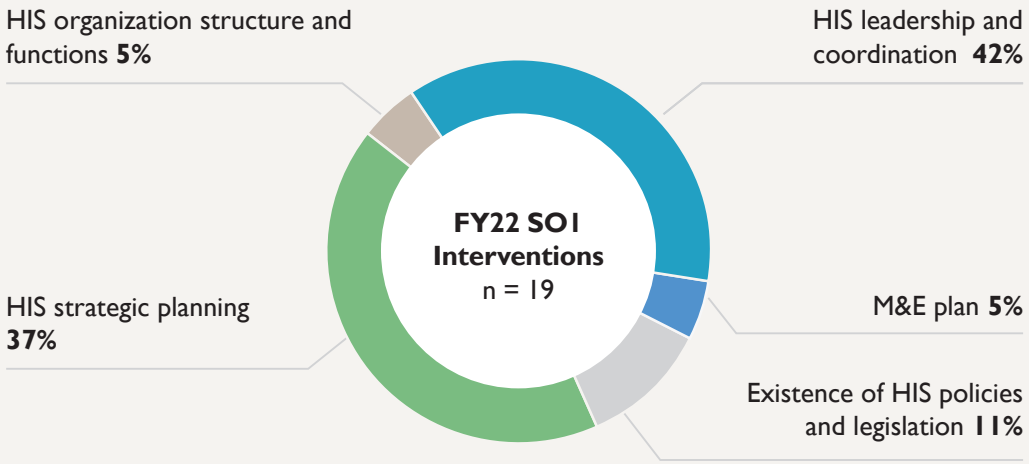
Photo credits: CHISU Burkina Faso, Haiti, Ghana, Indonesia, Serbia, Malawi, Niger, Eastern and Southern Caribbean, Mali

Summary of Results by Strategic Objective

Strategic objective 1. HIS governance

CHISU continued to strengthen governance and HIS enabling environments in Burkina Faso, Haiti, Indonesia, Madagascar, Malawi, Mali, Niger, Serbia, and the Middle East and North Africa (MENA) region. At the global level, CHISU initiated work to catalyze implementation of the **World Health Organization's (WHO) routine health information systems (RHIS) Strategy** and provided **global HIS management and leadership** through contribution to USAID platforms and regional and global bodies and networks, and through leadership in the Health Data Collaborative (HDC) and Digital Health and Interoperability (DH&I) working groups. See Figure 1 for a summary of CHISU interventions in SO1.

FIGURE 1 - SUMMARY OF CHISU INTERVENTIONS IN SO1



By conducting the HIS stages of continuous improvement (SOCI) assessment with national stakeholders, CHISU is building capacity to identify gaps and strengths of the national HIS and is applying these insights to national strategic planning. The SOCI results were an important baseline measure of the status of the national HIS for the country and for project implementation. SOCI assessments started in FY21 and were completed with improvement plans and general reports in FY22 in Burkina Faso and Serbia. In FY22, SOCI assessments were conducted in Malawi and Niger and the results informed the new strategic planning process (Box 1). The SOCI toolkit was adapted for the Indonesian context, creating a macro- and micro-level digital maturity assessment tool that was tested with more than 80 stakeholder representatives. In collaboration with PMI Measure Malaria, coordination of the Madagascar SOCI assessment began, which will support the development of the country's next HIS Strategy 2023-2027.

CHISU supported HIS coordination bodies in several countries, which serve as key convening mechanisms, facilitate more effective use of resources, and reduce fragmentation in the HIS ecosystem. In **Burkina Faso**, CHISU's contributions to revitalizing the One Health technical secretariat and thematic commissions saw the One Health strategic plan validated. CHISU trained administrators on the One Health database and led the development of the joint investigation forms with

BOX 1. SOCI FINDINGS IN NIGER AND MALAWI

The SOCI toolkit measures the stage of maturity across five HIS domains. This informs the development of national strategic plans and targeted improvement plans to progress to stronger HIS.

Niger completed the SOCI assessment in 2022, with component scores ranging from emerging/ad hoc (1) to defined (3).

- HIS leadership and governance scored as defined (3), with higher measures on HIS strategy and organizational structures and functions. Strengthening of policies, legal and regulatory frameworks, and compliance (repeatable, 2) is a strong priority.
- HIS management and workforce development is weak, with a score of 2 (repeatable) for HIS workforce capacity and development and HIS financing, while the subcomponent HIS resource mobilization seems to be non-existent (0).
- Information communication technology (ICT) infrastructure scored poorly as repeatable (2) with highest concerns focused on internet connectivity and business continuity that are still at the emerging stages (1).
- HIS standards and interoperability overall scored 2 (repeatable), with the most urgent need focused on the lowest scores clustering in enterprise architecture, data exchange standards, and individual/ aggregate/ community data exchange (emerging/ad hoc, 1).
- Data quality scored defined (3) and overall data use remains weak (repeatable, 2), though some subcomponents did reach defined (3), including synthesis and communication, reporting and analytics features, and data collection alignment with workflow. Fostering data quality in all aspects, including developing a plan for data quality assurance, will improve data use by increasing trust that will lead to more data demand and use.

Malawi completed the SOCI assessment in 2022, with component scores ranging from repeatable (2) to managed (4).

- Leadership and governance scored 4 (managed) owing to the availability of relevant policies, strategies, and coordination mechanisms. Enforcement and adherence to policies were noted as challenges.
- HIS management and workforce scored 3 (defined) due to past and ongoing recruitment efforts to fill data management vacancies at the facility level. Human resources policies were weaker (repeatable, 2), with improvements needed in staff management and retention.
- HIS ICT infrastructure scored 2 (repeatable) as blueprints and processes are documented and some systems are functional. ICT inventory tracking, connectivity, and user capacity need to be strengthened to support data management.
- HIS standards and interoperability scored 3 (defined) owing to the availability of key interoperability components (i.e., the interoperability layer and master facility list). However, a clear roadmap is missing with enterprise architecture (repeatable, 2) and person data exchange (emerging/ad hoc, 1).
- HIS data quality and use scored 3 (defined) because tools are in place and SOPs implemented. However, these processes are not fully institutionalized and there is a need for comprehensive data quality assurance and data use plans.

BOX 2. IMPROVEMENTS IN HIS GOVERNANCE

- In Burkina Faso, CHISU supported development and finalization of the One Health thematic surveillance commission regulatory texts with clear definition of the responsibilities and composition aligned with international health regulations.[1]
- Also in Burkina Faso, the SOCI-informed HIS strategic plan 2021-2025 was developed and validated with CHISU's support.
- In Serbia, the SOCI-informed eHealth Strategy was finalized and adopted in February 2022 with publication on the MOH and Office for Information Technology and eGovernment websites. The accompanying action plan was adopted in May 2022, creating a road map for the next two years and defining activities to further digitize the health system.

CHISU supported the development of the Digital Health Policy in Malawi by participating in drafting workshops and virtual discussions with partners (Photo: CHISU Malawi)

1 World Health Organization. International Health Regulations, 3rd edition. Available at: https://www.who.int/publications/i/item/9789241580496

several ministries. In **Indonesia**, CHISU developed orientation materials and sensitized stakeholders within the Ministry of Health's (MOH) Center for Data and Information Technology (Pusdatin) on best practices for establishing an HIS technical working group (TWG), preliminarily defining problems to be solved, scope, and potential members of the TWG. In **Mali**, CHISU has been developing terms of reference (TOR) for TWGs focused on data quality and health emergency management. In **Malawi**, CHISU has been coordinating the monitoring and evaluation (M&E) TWGs of both the National Malaria Control Program and the MOH. In **Serbia**, CHISU supported the development of the SOCI-informed eHealth Strategy, adopted in February 2022, and a two-year eHealth Action Plan that defines activities in the process of further digitization of the health system, with responsibilities, timelines, and budgets. CHISU participated in regular coordination meetings for COVID-19 vaccination campaigns and supported COVID-19 data-sharing mechanisms in **Mali**.

To support data standardization through guidelines, policies, and regulations, CHISU in **Haiti** is supporting the Ministry of Public Health Protection (MSPP) in moving the Digital Health Policy Agenda forward. CHISU and USAID/Haiti met with the MSPP Unit of Evaluation and Programming (UEP) to gather feedback on the data security and patient confidentiality elements of the initial draft of the eHealth Policy. CHISU also supported development of the Digital Health Policy in **Malawi** by participating in three drafting workshops and two virtual discussions with WHO and other partners. CHISU **Indonesia** made significant progress on mapping and

BOX 3. IMPROVEMENTS IN SYSTEMS AND SOFTWARE

System enhancements. CHISU improved MS-Surveillance COVID-19 vaccination and testing capacity in Burkina Faso by introducing appointment scheduling software. CHISU developed a prototype of the electronic *passe sanitaire* in Haiti for COVID-19 vaccine recipients. CHISU also enhanced the national data web portal in Haiti called *Carte Sanitaire* to include COVID-19 Tracker data. CHISU supported the national launch of the Satu Sehat data integration platform by demonstrating interoperability of software applications covering more than 3,500 health facilities in East Java. CHISU finalized a Malagasy version of the HPHC questionnaire in Madagascar to accommodate a wider variety of respondents, especially from rural areas. CHISU strengthened the COVID-19 surveillance system in Mali by configuring a link to the vaccination system, enabling client follow up throughout notification, treatment, and vaccination.

Scale-up of systems. CHISU expanded use of Burkina Faso's ENDOS to health facility-level by training nearly 400 staff across 254 health facilities in seven health districts to collect and enter data directly into ENDOS, where previously district-level staff entered facility reports. CHISU also expanded use of Burkina Faso's One Health Event-Based Surveillance (EBS) to community level by training 1,530 community agents in four provinces to report on the occurrence of notifiable diseases and other events of public health importance.

Interoperability. CHISU improved interoperability in Burkina Faso by linking three new data systems to the ENDOS system. Community data collected using CommCare are sent to the UNICEF RapidPro tool via SMS and then integrated into ENDOS using the CHISU-supported interoperability layer. Data from mHealth, a mobile app for community health data, and NetSIG2, for public health supply chain and logistics management, were also linked to ENDOS.

standardizing maternal and newborn health (MNH), tuberculosis (TB), and health financing data, working with stakeholders to identify the data sets, standardize the data, and develop the implementation guides for the Fast Healthcare Interoperability Resources (FHIR) interoperability standard to integrate data into the Satu Sehat platform. The guides are expected to be launched in October 2022. The MOH also released the first guidance on electronic medical records, for which CHISU provided technical inputs.

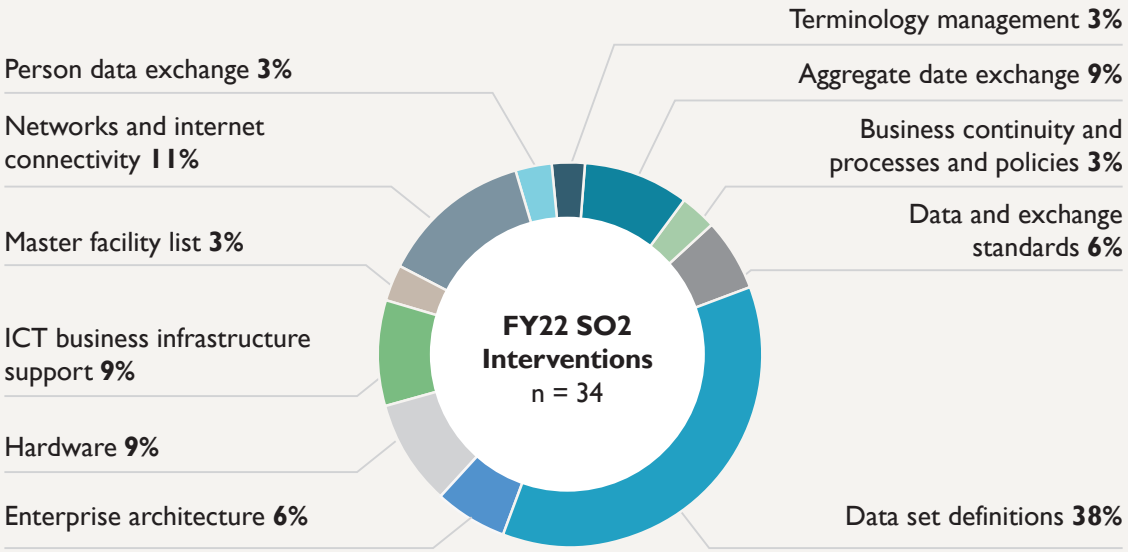
Strategic objective 2. Systems and software

CHISU works with stakeholders in Burkina Faso, Haiti, Indonesia, Madagascar, Mali, and Niger to develop or enhance HIS to function at scale and respond to user needs, making high-quality data available to decision-makers. At the global level, CHISU also enhanced the electronic **high performing health care (HPHC) tool** with a Spanish language option, filter functionality, and subnational visualization. CHISU is developing a web-based **HIS SOCI tool** with dashboard visualization and consensus and gender scores. CHISU continued to develop an **artificial intelligence (AI)/machine learning (ML) knowledge hub** that includes an ML-powered newsfeed. See Figure 2 for a summary of CHISU interventions in SO2.

CHISU provides technical and financial support for system enhancements, optimization, and maintenance. In **Burkina Faso**, this included training administrators of the One Health system and developing joint investigation forms with contributions from several ministries. CHISU worked with the Directorate of HIS to clean the metadata in ENDOS (the national routine information system). CHISU reviewed and simplified COVID-19 forms in MS-Surveillance (MOH's One Health surveillance database). CHISU supported the installation of an application, BF-SANTE, which allows Burkinabe to make an appointment for COVID-19 PCR tests and download results and vaccination cards, which has resulted in a reduction of the turnaround time for results from 72 to 24 hours. In **Haiti**, CHISU provided troubleshooting for the COVID-19 Vaccination tracker

CHISU ensured the connection of 2,803 tablets for data entry in Burkina Faso, registering more than 473,000 people vaccinated against COVID-19 into the country's MS-Surveillance platform (Photo: CHISU Burkina Faso)

FIGURE 2 - SUMMARY OF CHISU INTERVENTIONS IN SO2



including manually rebuilding analytics tables to resolve missing values and resetting data types, and conducted requirements gathering for the initial design of an orphan and vulnerable children (OVC) management information system to centralize and standardize data collection and management. In **Madagascar**, CHISU supported HPHC tool adaptations and translation into Malagasy. In **Mali**, CHISU identified strengths, areas for improvement, and opportunities to support the national COVID-19 data management system in District Health Information Software version 2 (DHIS2).

To ensure reliable access to national systems, CHISU supports critical HIS ICT infrastructure. In **Burkina Faso**, CHISU provided internet connectivity for data entry in the One Health system at community level and for COVID-19 campaigns and procured ICT equipment to support data management. In **Haiti**, CHISU provided server and IT support for COVID-19 and TB trackers, *Système d'Information Sanitaire Unique* (SISNU), the national health management information system (HMIS), as well as internet connectivity for users accessing the trackers. In **Mali**, CHISU provided internet connectivity for central, regional, and health facility levels and conducted an ICT infrastructure assessment of all levels in four regions. In **Niger**, CHISU conducted an ICT infrastructure assessment of two regions and eight central-level directorates, clearly highlighting key gaps which can be addressed through different funding entities.

CHISU supports and reinforces HIS standards and core services, data exchange, and interoperability. In **Burkina Faso**, CHISU supported integration of aggregate data from other applications into ENDOS

via the interoperability layer, as well as the interoperability between One Health and related COVID-19 applications. CHISU also participated in discussions on ICD-11 implementation in ENDOS through the Medical Certification of Causes of Death pilot at Ziniare Regional Hospital. CHISU led the workshop to develop application and administrator user guides for three COVID-19-related systems (MS-Surveillance, COVID INFO, and BF-SANTE). In **Indonesia**, CHISU is supporting interoperability for MNH, TB, and health financing systems in Satu Sehat to demonstrate how it can function as a data integration platform. CHISU also initiated discussions on the review of the existing enterprise architecture. In **Haiti**, CHISU provides support to integrate SISNU monitoring, evaluation, and surveillance interface (MESI) aggregate data with COVID-19 Tracker data in the national data web portal. CHISU also drafted a national health enterprise architecture and configured a prototype of the COVID-19 electronic health certificate, *passe sanitaire*, for vaccine recipients in Haiti. In **Mali**, CHISU initiated an interoperability maturity assessment.

Strategic objective 3. Data quality and use

CHISU continued work to increase demand and use of health data and information to address health priorities, gaps, and challenges in Burkina Faso, Ghana, Haiti, Indonesia, Malawi, Mali, Niger, Serbia, and the Eastern and Southern Caribbean Region (ESC) countries. CHISU is expanding the use of the **HPHC tool** with engagements with stakeholders in Ethiopia and Nigeria

BOX 4. IMPROVEMENTS IN DATA QUALITY AND USE

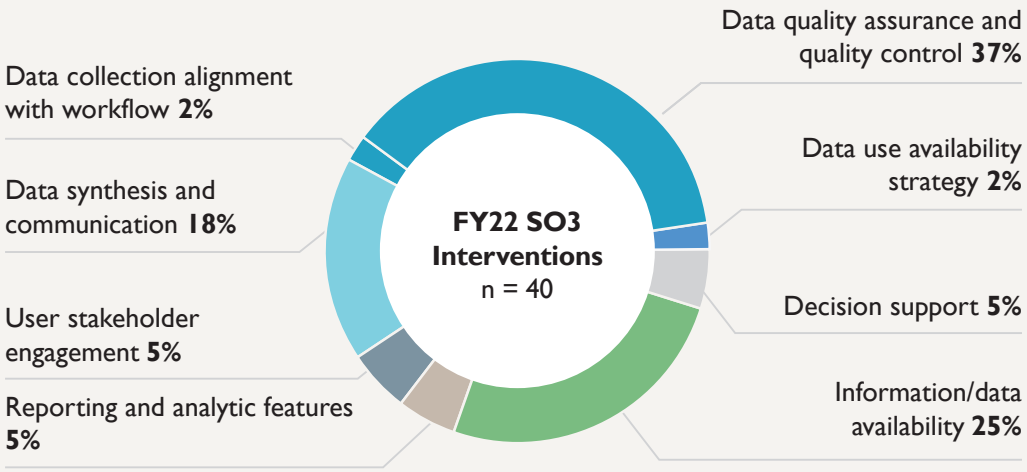
Data use

- The One Health technical secretariat in Burkina Faso conducted a joint investigation of unexplained poultry mortality in two districts and reported on the One Health platform following the CHISU-developed TOR.
- Central and regional staff from the Ministries of Health, Animal Resources, and the Environment in Burkina Faso shared achievements and experiences in capacity building, data collection and processing, and data analysis and use on the One Health surveillance platform, with CHISU support.
- The national annual statistical reports for 2020 and 2021 in Haiti were developed, published, and disseminated at a launch event with CHISU support.
- Indonesia identified current and new data needs and developed dashboards for routine immunization, including disaggregation to the Puskesmas level.
- National decision makers in Mali use the CHISU-supported COVID-19 SitRep dashboard in the national DHIS2 with the help of a data analysis guide for COVID-19 decision support tools.
- CHISU developed a prototype to demonstrate how AI can be used to predict bed occupancy and allocation across health facilities in Serbia.

Data quality

- District managers in Burkina Faso are using the WHO DQR module in ENDOS to identify and correct missing, atypical, and inconsistent data with the help of a CHISU-supported user guide, training, and data review workshops.
- Health facility staff are entering monthly data in ENDOS in Burkina Faso as a result of CHISU's support for training and deployment, resulting in an increase of timeliness of reporting from 82 percent in August 2021 to 99 percent in February 2022.
- Four regions of Mali are using the WHO DQR module in the national DHIS2 to review the quality of COVID-19 data, resulting in an increase of completeness from <10 percent in May to over 90 percent at the end of September.

FIGURE 3 - SUMMARY OF CHISU INTERVENTIONS IN SO3



for future tool use. CHISU conducted a review of **digital supportive supervision** frameworks, tools, and programs, and initiated development of the data quality annex of the revised WHO **Reproductive maternal, newborn, child and adolescent health (RMNCAH) Use of Facility Data Guidelines**. CHISU also initiated an activity focused on **community based information systems (CBIS) guidance in PMI countries** – classifying the components of 20 documents, as follows: information systems development; governance; data analysis; data use/quality; standards and interoperability; sharing and using; and data security, privacy, and confidentiality. See Figure 3 for a summary of CHISU interventions in SO3.

CHISU supported data use training, data review meetings, and data use needs assessments in many countries. CHISU trained regional health directors in **Burkina Faso** on the use of data in ENDOS and organized a national workshop to review data and share experiences on One Health surveillance implemented in the two intervention regions (Center West and Boucle du Mouhoun). CHISU led a training on malaria data analysis, interpretation, visualization, and use in the six districts of **Ghana** earmarked for malaria pre-elimination. In **Malawi**, CHISU supported the Central Monitoring and Evaluation Division (CMED) and the National Malaria Control Program (NMCP) in implementing integrated program data reviews in five zones (Central West, Central East, North, Southeast, and Southwest). After completing a data use needs assessment in **Indonesia**, CHISU identified a model for a data use capacity strengthening program at national and subnational levels. CHISU also conducted key informant interviews and hosted a data use capacity strengthening curriculum validation workshop to review findings of the needs assessment and validate the design of the curriculum. In **Serbia**, after drafting the data use needs assessment report, CHISU held a workshop to collect feedback from stakeholders on identified gaps in data use.

CHISU conducted data quality review (DQR) meetings in **Burkina Faso**, **Haiti**, **Mali**, and **Niger**, using the WHO DQR app in DHIS2 in all countries except Haiti, and conducted data quality assessments (DQA) in **Ghana** and **Malawi**. In **Mali**, CHISU supported the development of a DQA plan with special focus on COVID-19. CHISU supported data analysis for improved data quality in **Mali** and **Niger**. In **Niger**, CHISU analyzed data for Zinder and Maradi Regions, focusing on the data quality dimensions of completeness (of reports and data points) and timeliness. By sharing the findings from this analysis with stakeholders, CHISU saw improvement in data quality, and Directorate of Statistics staff are using it for other regional health directorates.

CHISU conducted data quality improvement training in **Ghana** for 96 people in the Greater Accra Region. District staff developed data quality improvement actions plans during the training with implementation starting shortly after. In **Malawi**, CHISU, NMCP, CMED,

and Digital Health Division (DHD) implemented malaria-specific facility-level data quality verification, staff mentorship, and data modification in the DHIS2. The intervention trained 72 district-level participants and covered 263 facilities in eight targeted districts. CHISU also supported integration of digital health records in **Indonesia** for example hospital information systems TB drug prescribing and dispensing reporting data. CHISU implemented supportive supervision activities in **Burkina Faso** and **Malawi** to improve the quality of data, its entry into electronic platforms, analysis, and preparation of reports. In **Mali**, CHISU developed a COVID-19 data analysis guide that helps key decision makers use customized decision support tools (dashboards). In **Indonesia**, CHISU supported the Satu Data Satu Dashboard; national- and puskesmas-level monitoring dashboards; Child Immunization Month; and polio drop and PCV immunization. In **Serbia**, CHISU developed a prototype to demonstrate how AI can be leveraged to predict bed occupancy and allocation needs across health facilities, which was well received by the government. CHISU was asked to subsequently focus on a different use case (waiting list optimization for scheduled imaging diagnostics services, specifically CT and MRI), which is considered higher priority to demonstrate the implementation of the national AI strategy and the effect of AI in data use for decision making by the government, and will be addressed in the next year.

In Indonesia, CHISU supported the development of the Satu Sehat platform, as well as national- and puskesmas-level monitoring dashboards (Photo: CHISU Indonesia)

Health Systems Strengthening

Mali's Minister of Health and Social Development, Mme Diéminatou Sangaré, at a high-level workshop organized with technical and financial support from CHISU (Photo: CHISU Mali)

CHISU continues to expand USAID's investment in integrated HIS and to contribute to USAID's Vision for Health Systems Strengthening and Vision for Action in Digital Health. Our theory of how our interventions and results contribute to health systems strengthening still holds. We theorize that if high-quality data are used to make policy and health system optimization decisions, health disparities will be reduced because there will be a greater understanding of geographic and demographic distribution of gaps in health services, commodities, and workforce. If these data are disaggregated and produce meaningful, population-sensitive data, care will be as effective, safe, and people-centered as possible, and the health system's responsiveness and resources will be optimized.

CHISU developed a country-focused process for documenting how interventions result in demonstrable improvements, which contribute to HIS evolution. CHISU is using causal link monitoring[2] to map the expected causal pathway from interventions to HIS evolution. This approach will enable CHISU to test implementation assumptions, anticipate results, and document unintended outcomes or emerging factors. It also provides the foundation for showing how CHISU contributes to health systems outcomes. We drafted seven country causal frameworks and by the end of the year, incorporated two of them into pause and reflect sessions with CHISU teams. In **Burkina Faso**, use of the causal framework reinforced the connection between work plan implementation, SOCI, and HIS evolution. In **Indonesia**, the pause and reflect exercise improved team insights on the current work plan, provided a framework to test the assumptions in the theory of change, and guided development of a sustainability plan and the following year's work plan. Challenges were extracted onto an adaptive management plan for targeted action.

Gender

CHISU continued to integrate gender into activities, strategic planning, and HIS learnings. At the global level, CHISU co-leads the Digital Health and Interoperability Gender/Diversity, Equity and Inclusion small working group, positioning CHISU to invite and orient new members, guide activity development, and share CHISU's approach to integrating gender in all activities.

FY22 has seen an increase in the proportion of activities that include gender considerations, translation of the Gender in HIS Considerations guide into French to enable Francophone teams to participate in planning,

2 More information on causal link monitoring can be found in the Guide to Complexity-Aware Monitoring Approaches for MOMENTUM Projects

BOX 5. BREASTFEEDING BREAKS

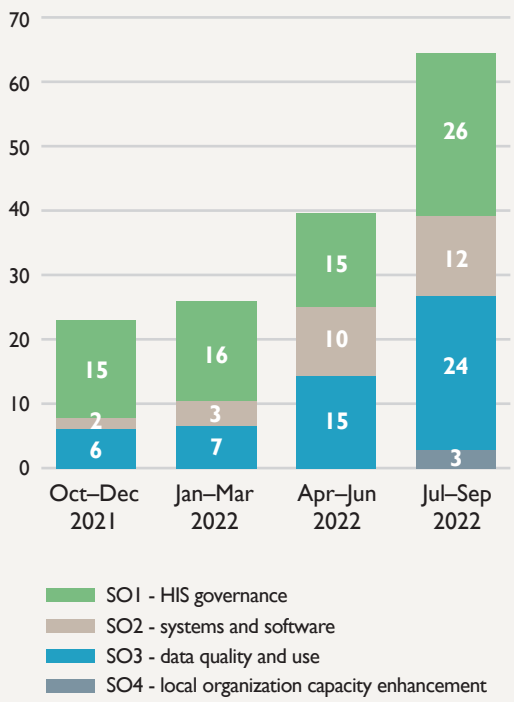
CHISU started implementing breastfeeding breaks during training in Burkina Faso. The initiative, part of a CHISU pledge to integrate gender in health information systems strengthening, aims to ensure that lactating women can be in contact with their babies while advancing their professional knowledge.

Breastfeeding breaks:

- Allow for equitable participation in training.
- Help promote exclusive breastfeeding.
- Improve the health of mothers and their babies.

During a recent workshop on EBS for community agents from the Ministries of Health, Environment and Animal Resources, a break was organized for the participants who were lactating. The pause lasted for about 30 minutes and breastfeeding women were allowed to leave 30 minutes before other participants so that the babies were not disturbed by the event's noise. During the mothers' absence, trainers used the break time to revisit modules and discuss material already covered.

FIGURE 4 - GENDER CONSIDERATIONS TRACKED BY QUARTER



tracking, and reporting process for gender activities, and the addition of a SOCI Gender Composite score in the digital tool. CHISU spurred thought leadership and dissemination of gender learnings to a global audience through A Global Call to Action for Gender-Inclusive Data Collection and Use. CHISU also launched a social media campaign to break the gender bias in digital health for International Women's Day that included two tweets with 1,011 impressions, two posts on LinkedIn with 2,726 impressions, and two posts on Facebook.

All new team members receive gender orientation, setting the stage for gender awareness and gender integration. CHISU teams provide quarterly updates on progress, successes, and challenges for selected gender considerations based on country work plans, as well as gender considerations for all trainings, events, and products. Figure 4 shows the increase in gender considerations being tracked by quarter. For more information on specific country highlights for gender, see XB-004.

Learning

Learning synthesis. To generate learning insights, CHISU synthesized emerging trends from activity report narratives and other routinely reported data in the project MIS. Patterns and outliers were identified in the reported key intervention frequency, duration, and sequencing as related to the HIS SOCI framework subcomponents. Success factors, challenges, and examples were identified to support learning. At this stage of implementation, data are not yet available on the effectiveness of certain strategies or approaches in advancing the HIS SOCI framework. Therefore, this process helped identify some emerging trends.

- **SO1.** Sequencing SO1 interventions generally begins with SOCI subcomponent HIS leadership and coordination through support for coordinating

bodies and/or TWGs (the longest enduring across all interventions in all SOs). Based on activity report narratives, stakeholder engagement and buy-in seem to be key determining factors for success and rationale for ongoing implementation. In multiple countries, HIS strategic planning often follows leadership and coordination support.

- **SO2.** Sequencing SO2 interventions generally begins with enhancement and optimization of systems and software. These activities are the longest enduring of interventions in SO2. Despite CHISU support, internet connectivity is an enduring challenge that is compounded by security concerns in some contexts.

CHISU spent its first year in Niger laying the foundation for improving health data quality and use through the application of the SOCI tool (Photo: CHISU Niger)

- **SO3.** There is no predetermined order emerging with CHISU's work in SO3, as the support in this area is often integrated within wider country efforts which in many cases began before CHISU started. Compared with other SOs, interventions under SO3 appear shorter in duration. Across all SOs, DQA and quality control interventions are by far the most frequently reported. Interventions related to the information/data availability SOCI subcomponent are the longest enduring.
- **Cross-cutting.** Emerging patterns in the sequencing of interventions across SOs show that most activities begin with interventions under SO1, while interventions under SO2 and SO3 are often implemented simultaneously. Multiple activities describe persistent challenges related to internet connectivity (addressed in SO2), but these issues are largely unmentioned in discussion of HIS leadership and governance (addressed in SO1). Multiple activities described challenges in promoting behavior change or new tool uptake. Other reported challenges focus on limited human resources and technical implementation, such as inadequate server capacity. Lastly, meaningful stakeholder engagement on HIS takes time and is key to ownership and sustainability.

Learning questions. Learning questions are prioritized in an operational plan each year. The following five were selected for this year.

- **What is CHISU learning about HIS evolution from the application of SOCI?** CHISU is not yet learning about HIS evolution from SOCI since there were no repeated assessments during this

year. But with four HIS SOCI assessments complete, CHISU is learning that small group work as part of the desk review is preferred in most settings. The length of the SOCI processes vary and this does not seem to be a determining success factor. Most SOCI assessments have involved a wide variety of stakeholders but are dominated by men, with the notable exception of Serbia which had a 1:1 ratio. CHISU is closely examining the specific government departments or units who attend and will continue to advocate for those responsible for ICT to participate.

- **What are the causal pathways between interoperability, data quality, data use, and health system outcomes, and what practices and conditions influence the pathways?** CHISU developed causal frameworks for seven countries this year and is using them to frame the pause and reflect sessions we are holding with the teams. We expect to continue gathering input for this question in FY23.
- **What approaches in macro-level governance can influence programming, funding, implementation, and accountability of national digital health investments?** Information to inform this question will come from work with USAID's COVID-19 collaborative learning agenda (CLA) activities in FY23.
- **What are current promising practices with measuring data demand and use?** Which of the metrics are appropriate for our work and intended results? CHISU has applied the revised definition for data demand in the digital age from Y1 to our ongoing work. We are exploring the feasibility of using the SOCI assessment tool to provide qualitative data that measure and demonstrate change over time for data demand.
- **What strategies are effective in improving gender inclusivity in HIS processes?** CHISU has made strides in both depth and breadth of gender integration through increased advocacy for equitable participation, adjusting training to meet the needs of women, and writing gender integration expectations into job descriptions. Preliminary learnings reveal that multiple converging strategies have improved gender results. These strategies fall into these often-overlapping themes: 1) a systematic approach; 2) gender training; 3) leadership; and 4) repetition. Gender was discussed and highlighted as a priority from the beginning of the project, with repeated emphasis from leadership. Gender was systematically integrated into CHISU through the MIS, project indicators, and gender training in all staff orientation, allowing CHISU staff to increase understanding and develop their own gender lens. CHISU has seen progress over the past year with countries moving from more basic tasks of documenting gender parity to taking action and advocacy when inequities are noticed, and even initiating deeper examinations of gender's role in their work. This progress corresponds with the Interagency Gender Working Group's Gender Equality Continuum Tool. Some incoming staff members may have fallen into the category of "gender blind" as they did not perceive gender to be important in HIS strengthening but now are becoming more gender aware to see how gender may have a role in HIS, digitization, and use of data. Repetition and support from leadership, gender discussions, and critical thinking have continued to move CHISU work into accommodating and transformative phases of gender equality.

Conclusion

CHISU's second year was characterized by highly collaborative relationships within countries and across global bodies, which was essential for implementing the many interventions and the improvements that were documented. This year was also characterized by project growth, including in the number of countries and regions, disease areas, and experts supporting countries. This means that CHISU is engaged in multiple contexts with HIS at different levels of maturity supporting different population levels. For example, CHISU is supporting the Government of St. Kitts and Nevis, which has a population of 50,000, and Indonesia, which has 273 million people.

The Minister of Health of Guyana, Dr. Frank Anthony, met with Alana Shury from USAID/East and Southern Caribbean and CHISU Deputy Director Stephanie Watson-Grant to discuss planned support to the country (Photo: CHISU ESC)

CHISU continues to provide global leadership for gender integration in HIS and has had the opportunity to implement the SOCI in more countries. This allows us more opportunities to learn from different applications in different contexts. Finally, with the many different activities in different contexts, CHISU has demonstrated the value of foundational investments (e.g., long-term intensive engagement in Burkina Faso) while being highly responsive to country government and USAID's immediate needs (e.g. in Mali, Indonesia, Haiti, and ESC).

As we approach the mid-project mark, we will continue to focus on responding to USAID's and country governments' HIS needs, while learning from these interventions and adapting our implementation for greater impact. Finally, with CHISU's support in many different contexts, we will confirm the ability of our technical approach to strengthen HIS, and adjust it as necessary.

Annexes

ANNEX 1. ACTIVITY REPORTS

Overview

This report covers CHISU's work from October 1, 2021 to September 30, 2022. Activities implemented in FY22 are listed in the table below, including six scoping exercises, 16 activities in nine countries, six activities in two regions, ten global technical activities, six cross-cutting global program activities supported with XB funding, and two PMI-funded operational activities.

BF-001 - One Health Information System Strengthening in Burkina Faso

The work plan for CHISU's second year of implementation in Burkina Faso was approved on December 13. Burkina Faso experienced significant political instability during the year, which resulted in, among other things, turnover and movement of key stakeholders and reduced regularity of One Health strategic meetings. In June, these meetings temporarily resumed, allowing One Health surveillance activities to relaunch, but the meetings were suspended again due to changes in MOH's organization chart. Fortunately, leadership at the One Health Technical Secretariat (ST-One Health) remained the same, although a lack of adequate staff there caused governance and leadership gaps.

Code	Activity Name	Start Date	End Date	Status
Country activities				
BF-001	One Health Information System Strengthening in Burkina Faso	10/01/2020	09/30/2022	Open
BF-003	Strengthening availability and use of COVID-19 data in Burkina Faso	10/01/2021	09/30/2022	Open
BF-004	Strengthening use of ENDOS in Burkina Faso	10/01/2021	09/30/2022	Open
BF-005	COVID-19 Data System Design Analysis and immunization tool revision in Burkina Faso	04/01/2022	9/30/2022	Open
COVID-002	COVID-19 Vaccine Data Availability in Burkina Faso	04/01/2022	12/31/2022	Open
GH-001	Ghana Scoping	10/01/2021	11/30/2021	Closed
GH-002	Strengthening malaria data quality and use in Ghana	01/01/2022	06/30/2023	Open
GH-003	COVID-19 surveillance system alignment	09/01/2022	05/31/2023	Open
COVID-003	Ghana COVID Scoping Exercise	06/01/2022	07/31/2022	Closed
HT-001	Haiti Scoping	10/15/2021	01/31/2022	Closed
HT-002	HIS support to COVID-19 in Haiti	01/01/2022	09/30/2023	Open
HT-003	Support to SISNU in Haiti	01/01/2022	03/31/2023	Open
HT-004	HIS Support to TB/HIV in Haiti	01/01/2022	09/30/2022	Open
ID-001	Indonesia scoping and co-creation; Strengthening HIS progression and digital transformation in Indonesia	10/01/2021	12/31/2022	Open
MG-001	Three Health Information System Assessments in Madagascar	08/01/2022	02/28/2023	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	2/25/2023	Open
MW-001	Malawi Scoping	11/01/2021	03/31/2022	Closed
MW-002	Strengthening malaria data systems and use in Malawi	03/01/2022	02/28/2023	Open
COVID-008	Scoping Exercise in Namibia	08/01/2022	11/30/2022	Open
NR-002	Strengthening the HIS in Niger	07/01/2021	9/30/2022	Open
SB-002	Strengthening HIS Governance and Data Use in Serbia	04/01/2021	03/31/2022	Open

Code	Activity Name	Start Date	End Date	Status
Regional activities				
ESC-001	COVID-19 support in Eastern and Southern Caribbean Countries	02/01/2021	01/31/2023	Open
ESC-002	COVID-19 support in Eastern and Southern Caribbean Countries	04/01/2022	03/31/2023	Open
ESC-003	COVID-19 vaccine supply chain support in Eastern and Southern Caribbean Countries	07/08/2022	06/30/2023	Open
COVID-001	COVID-19 support in Eastern and Southern Caribbean Region	04/01/2022	12/31/2022	Open
COVID-004	COVID-19 supply chain support in ESC	Pending approval	Pending approval	Not started
MENA-001	Support to Global Health Security Agenda (GHSA) information systems in MENA	05/10/2021	06/30/2022	Closed
Global technical activities				
MCH-001	RMNCAH Facility Data Use Guidelines	02/14/2022	04/30/2023	Open
OHS-001	Digitize, Deploy, and Maintain the HPHC Tool	02/23/2021	06/30/2023	Open
OHS-002	Digital Supportive Supervision	10/01/2021	06/30/2023	Open
OHS-003	GHSA Surveillance Data Analysis and Use	10/01/2021	06/30/2023	Open
OHS-004	Country HPHC Implementation	07/01/2022	06/30/2023	Open
OHS-005	Catalytic implementation of the WHO global RHIS strategy	07/01/2022	06/30/2023	Open
PMI-001	Assessing Community Based Information System guidance in PMI priority countries	10/01/2021	04/30/2023	Open
XB-008	Global HIS Management and Leadership	07/01/2021	06/30/2023	Open
XB-009	Digital tool to measure and store country HIS progression	10/01/2021	06/30/2023	Open
XB-010	Artificial Intelligence and Machine Learning knowledge hub	10/01/2021	12/31/2022	Closed
Operations and global cross-cutting program activities				
PMI-002	PMI portfolio startup	09/01/2022	03/31/2023	Open
PMI-003	Country portfolio transition	09/01/2022	03/31/2023	Open
XB-002	Country Operations Support	08/01/2020	06/30/2023	Open
XB-003	Monitoring, Evaluation, and Learning	08/01/2020	06/30/2023	Open
XB-004	Gender in HIS Support	08/01/2020	06/30/2023	Open
XB-005	Knowledge Management Support	08/01/2020	06/30/2023	Open
XB-006	Communications	08/01/2020	06/30/2023	Open
XB-011	Mid-project technical meeting	07/01/2022	06/30/2023	Open

Sub-Activity 1: Strengthened governance and enabling environment of HIS in Burkina Faso

CHISU continued to engage with different government departments and divisions managing the One Health thematic commissions, including the ST-One Health to implement the approved work plan. CHISU participated in the validation meeting for the One Health Strategic Plan, organized by the ST-One Health and attended by all One Health stakeholders. When One Health surveillance activities relaunched, CHISU was able to train One Health database administrators and led the workshop for the development of joint investigation forms, which included several ministries.

The MOH relaunched the e-Health committee created in February 2020 to coordinate the implementation of collection, analysis, and decision-making applications. CHISU participates in this committee's quarterly meetings, focusing on support for interoperability.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

During the first half of the year, activities focused on continuing the training on the One Health information system for health facilities actors in two districts of the Mouhoun Region. CHISU also continued training staff from the Ministries of Health, Animal Resources, and the Environment on events-based surveillance. CHISU provided devices and internet connectivity to facilitate One Health surveillance data collection in those two districts.

Deliverables	Deadline	Status
BF-001		
1.1.1 2x2 response plan workshops	FY22 Q4	Completed
1.1.1 Annual One Health Council meeting	FY22 Q4	Completed
1.1.2 Investigation form	FY22 Q2	Completed
1.1.3 Four investigation reports	FY22 Q4	Completed
2.1.2 Report on One Health information system deployment in focus regions	FY22 Q2	Completed
2.1.3 ICT supplies inventory list and distribution report	FY22 Q1	Delayed completion
2.1.4 Internet supplies list and distribution report (Boucle de Mouhoun and Center West Regions)	FY22 Q4	Completed
2.1.5 Internet supplies list and distribution report (Center South and Plateau Central Regions)	FY22 Q4	Completed
2.1.6 Report on joint EBS and One Health information system supervision missions	FY22 Q4	Delayed completion
2.1.7 Training curricula on use of the One Health information system	FY22 Q1	Completed
2.1.8 Training report on One Health surveillance for central level	FY22 Q1	Completed
2.1.9 Report on support for participation at West African DHIS2 Academy	FY22 Q3	Completed
2.2.1 Training report on interoperability layer	FY22 Q4	Completed
3.1.1 Review of One Health surveillance data in CHISU regions	FY22 Q4	Canceled
3.1.2 Training report on One Health EBS in focus regions	FY22 Q4	Delayed completion
3.1.3 Experience sharing workshop and One Health surveillance data review	FY22 Q4	Completed
3.2.1 Training report on One Health information system for central level staff	FY22 Q1	Completed

CHISU provided technical support to the *direction des systèmes d'information en santé* (HIS Directorate—DSIS) for the digitization of community health worker data within mHealth, a data management system capturing community consultations, awareness-raising activities, and disease surveillance. mHealth uses the CommCare application for data collection, transmits data via SMS to RapidPro, and then transfers data to MS-Surveillance for analysis and visualization via the Zato application.

CHISU facilitated the integration of this platform with other applications using the interoperability layer developed by MEASURE Evaluation and supported by CHISU. The process is underway and will aim to integrate all community data and other applications of the HIS (e.g., MS-Surveillance, ENDOS, RapidPro). CHISU also continued technical support for interoperability between MS-Surveillance and other databases.

Sub-Activity 3: Improved data analysis and use

CHISU conducted One Health information system and EBS training for three ministries in Center West Region (Sabou District) and Boucle du Mouhoun Region (Dédougou District). Following the training, CHISU conducted supervision in Sabou District from July 18-21, covering all 24 health centers and four veterinary and three forestry posts. This follow-up assessed tool availability, agents' understanding and capacity to collect data on events of public health concern, and data completeness and accuracy on paper forms as well as in the One Health information system.

In addition to supervision, CHISU organized a national workshop to review data and share experiences on One Health surveillance in the two intervention regions. This workshop made it possible to show the achievements in building capacity of decentralized structures, and collecting, processing, analyzing, and using data. The workshop also made it possible for actors in the two regions and at central level to collect suggestions for improving data management and use for decision-making.

CHISU drafted the TOR and supported development of a joint investigation form with the ST-One Health. ST-One Health subsequently conducted two joint investigations following reports of poultry death, involving actors from all three ministries involved in the One Health approach. In Sector five of Dedougou, 150 dead poultry were found. Twenty-two samples suspected of being infected with highly pathogenic avian influenza were collected. In the village of Banouba in Tcheriba Commune, about 30 poultry died and samples were sent to the National Livestock Laboratory. Post-training supervision

was conducted to benefit the service point agents and community actors trained in One Health surveillance in the province of Bale. This supervision visit made it possible to detect and correct data entry errors.

Challenges and solutions:

- Burkina Faso continues to experience security challenges that hinder implementation of surveillance activities. This was especially the case in Boucle du Mouhoun, where some districts have become inaccessible. This situation can hamper the implementation of supervision and investigation. If the security challenges continue, CHISU will discuss changes to the work plan with USAID/Burkina Faso.
- As a security measure, the CHISU regional adviser based in Boucle de Mouhoun was recalled to Ouagadougou on June 3 pending more adequate measures for her security. However, the follow-up of project activities continues through local actors (region, district, delivery points).
- Data completeness in CHISU-supported regions continues to be a challenge. For example, the Ministry of Animal Resources is using a Kobo Toolbox application nationwide for data collection, which consequently reduces the use of the One Health information system. The main solution will be to integrate the KoboToolbox with the One Health information system through interoperability. The general directorate of veterinary services (Direction Générale des Services Vétérinaires) and technical directors agreed to implement this interoperability, which will make data entered once available in the two systems.

Plans for next quarter:

- Continue support to the central level of ST-One Health and the three ministries.
- Continue One Health activities in CHISU regions and an additional USAID intervention region (Centre-East).
- Follow-up/monitoring and review of One Health data.
- Encourage and support joint investigations.

BF-003 - Strengthening availability and use of COVID-19 data in Burkina Faso

During this period, the government prioritized the COVID-19 vaccination campaigns to distribute the vaccines available in the country. The MOH One Health information system surveillance database, (MS-Surveillance), was developed with support from USAID under MEASURE Evaluation, and serves as a COVID-19 data management tool that allows tracking of cases and contacts, laboratory data, and vaccination data. Due to delays in entering data for COVID-19 cases and vaccination and other issues, there have been ongoing data quality issues in the MS-Surveillance system. CHISU supported the MOH to update these data through retrospective entries in the database to ensure the completeness of the vaccination data, and is supporting administration of the COVID-19 database. However, despite the retrospective entry activities, data entry lags continued to create backlogs. The main reasons for the backlog are absence of resources (personnel and devices) and internet connectivity during vaccination activities.

Sub-Activity 1: Strengthened governance and enabling environment of HIS in Burkina Faso

CHISU is part of the MOH-organized task force that supports the Directorate of Prevention through Vaccination (DPV) for COVID-19 vaccination activities. CHISU took part in various consultations between USAID's implementing partners, including weekly COVID-19 coordination meetings and data validation exercises. CHISU participated in the official launch of the first campaign in December, held consultation meetings with the technical departments of the MOH including DPV, DSIS, and the Operations Center for Health Emergencies, and contributed to the implementation of technical activities. CHISU financed data management for the vaccination campaign organized by the US Embassy in Burkina Faso and coordinated with other USAID partners and actors from the Ouagadougou Regional Health Directorate.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU supported the COVID-19 vaccination campaign in four regions by providing internet connection for approximately 300 data entry tablets; supervising agents for data recording, entry, and analysis; and produced immunization cards. The campaign enabled the MOH to achieve a coverage rate of 11 percent of the target population in December, surpassing its target of ten percent.

CHISU procured software for the MOH that allows Burkinabe to make an appointment for PCR tests and download results and vaccination cards. Additionally,

CHISU supported the DSIS during a computer incident in May 2022 when server access was cut off. When information services for COVID-19 data were unavailable, CHISU set up a temporary office at Ouagadougou Airport so that 264 travelers could take PCR tests and printed 324 test results.

CHISU supported DSIS to complete maintenance on MS-Surveillance to increase server capacities from 16GB to 32GB and increase the number of cores from eight to 16. Additionally, a workshop was held to customize COVID-19 immunization indicators into the MS-Surveillance system. CHISU optimized interoperability between MS-Surveillance and related COVID-19 applications for case notification, testing, and vaccination. This system interoperability reduced test result turnaround time from 48 to 24 hours.

To facilitate the use of the systems for COVID-19 data, CHISU supported the DPV to integrate quality control rules for data entry and indicator updates and to develop user guides with the participation of all the MOH directorates involved in COVID-19 management. These guides are intended for MOH agents and Burkinabe who use the system for COVID-19 tests.

Sub-Activity 3: Improved data analysis and use

CHISU provided technical and financial support for validation and retrospective COVID-19 data entry during immunization campaigns in the Central West Region (Léo, Koudougou, Tenado, and Sabou Districts). This retrospective data entry activity makes it possible to improve data completeness. CHISU also conducted supervision visits in Center (Ouagadougou), Boucle du Mouhoun, and Center West Regions.

CHISU also trained community actors from the three ministries (environment, health, animal resources) of Sapouy in the province of Ziro. Thirty percent of the 351 trainees were women. For the training of service point actors in the same province, only one of the 55 participants was female. Given the low representation of women at this training, leaders were asked to encourage more women to participate in future trainings.

Deliverables	Deadline	Status
BF-003		
1.1.2 Incident management SOPs and operationalization report	FY22 Q3	Delayed start
2.1.1 Report on help desk to support platform users	FY22 Q3	Completed
2.1.2 Report on software to schedule COVID-19 tests and manage PCR electronic payment	FY22 Q3	Completed
2.1.3 Technical guide	FY22 Q2	Completed
2.1.4 Report on technical support of maintenance of the One Health information system	FY22 Q4	Completed
2.1.5 Workshop report on retrospective COVID data entry	FY22 Q3	Delayed completion
2.1.6 Trip or activity report on support to the COVID-19 vaccination campaign	FY22 Q4	Delayed completion
3.1.1 Report on supportive supervision	FY22 Q4	Completed

CHISU supervised the district management teams of Ziniaré, Zorgho, and Boussé as they implemented the MOH-led COVID-19 vaccination campaign in the Central Plateau Region in August and September.

Challenges and solutions:

- COVID-19 vaccination data completeness remains low in the One Health information system. CHISU is revisiting its approach and will seek a more effective solution.

Plans for next quarter:

- Continue support to the MOH for the organization of immunization campaigns, which includes supervision, internet connection, and data analysis.

BF-004 - Strengthening use of ENDOS in Burkina Faso

The MOH is committed to using the national HMIS (ENDOS-BF),[3] which uses DHIS2 for routine data management. CHISU supported the MOH in the deployment of ENDOS-BF at health facility level, the implementation of the WHO DQR toolkit, and interoperability with other systems.

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU supported the finalization of the SOCI assessment process with the development of the improvement plan. CHISU also supported the Directorate of Surveillance and Statistics (DSS) in the development of the HIS strategic plan by validating it and providing

3 ENDOS is the Entrepôt National des Données de la Santé (National Health Data Warehouse). Its initial goal was to be a data warehouse but it functions as the routine health information system.

the recommendations from the SOCI assessment for consideration. Further, CHISU had discussions with the DSS to ensure that its activities are taken into account in the DSS 2022 Annual Action Plan, and participated in the validation of the ENDOS-BF annual data. CHISU also made technical contributions to the revision of the HIS user training manual.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU provided technical support for administration of ENDOS-BF and defining the roadmap for master facility list (MFL) implementation. For the interoperability with the health facility registry, which will house the MFL, CHISU will build on previous work with MOH on the interoperability layer between ENDOS-BF.

During the second quarter, CHISU facilitated a cleaning workshop focused on ENDOS-BF indicators, organizational units, and data elements. During the workshop, 1,450 indicators were reviewed, leading to deletion of 605 (61 were duplicates); modification of 100 (56 had invalid formulas that were corrected); grouping of 116 that did not have a group; and reduction of the overall number of indicators groups from 67 to 23. Updates of organizational units included the creation, grouping, and assignment of forms for 62 units (34 did not have a group set). Ninety-five data elements were identified as being without a dataset and 187 without a group.

CHISU finalized implementation of ENDOS-BF in all health care facilities in the seven districts of Centre-West Region, bringing the number using ENDOS with CHISU support to 254. Training sessions took place between February 7 and March 18 in eight five-day sessions in the different districts. The training reached 277 participants from the Directorate for Regional Health (DRS) team; district management teams (health information and epidemiological surveillance center managers, Expanded Program on Immunization and pharmacy managers); community electronic register coaching team members; and head nurses from the 193 health facilities. DSS and CHISU staff conducted the training. DSS tablets were used to facilitate the training sessions, and community electronic register and COVID-19 tablets were used for data entry in the field. Training topics covered included peer validation of data, demonstration of data entry, verification of the concordance of the data, and overall assessment of the data quality.

Furthermore, CHISU promoted integration of data from other systems in ENDOS-BF. For example, CHISU supported the interoperability of ENDOS and community data collected using CommCare, which is then sent to ENDOS by SMS via RapidPro. The integration of other systems is in progress.

CHISU participated in the implementation of interoperability between the TB tracker and ENDOS-BF with the technical support of Health Information System Program West Africa. CHISU, in collaboration with WHO and Cooper/Smith, technically supported DSIS in finalizing the interoperability architecture. DSIS has shared the TOR with WHO and activities should re-launch in the coming months.

CHISU is collaborating with other partners in the implementation of the MFL. The results of an evaluation of the existing online hosting platforms were presented to the stakeholders and will serve as a basis for the committee to choose the one to host the MFL. CHISU also participated in discussions on ICD-11 implementation through the medical certification of causes of death pilot at Ziniare Regional Hospital. The next step is the provision of the electronic platform by WHO to the MOH. The HIS Architecture document was delayed, as it depends on the WHO, DSS, and DSIS agendas. CHISU will begin work on the report and document when these agendas are finalized.

Sub-Activity 3: Improved data analysis and use

CHISU provided technical support for the development and training of regional actors on the African Leaders Malaria Alliance scorecard[4] that focuses on maternal, reproductive, and newborn health. At the end of the training, 47 indicators were selected and are being used (20 national priority indicators, 14 maternal health indicators, five infant and child health indicators, one new-born health indicator, three nutrition indicators, four system indicators of health). The training and use of the scorecard will extend next to district-level staff. National actors have been committed to strengthening data quality, and 69 of 70 districts benefited from DQR trainings. The three main modules were taught to improve capacity of actors at different levels to analyze health facility data. As part of the DQR deployment, CHISU supported the MOH to develop and validate the user guide in ENDOS-BF. The guide was disseminated

4 More information on the scorecard available here: https://alma2030.org/scorecard-tools/scorecard-explanation/

in the training session in 70 districts. Gender considerations incorporated into the training were number of deaths due to severe malaria among pregnant women; number of women enrolled in antenatal care; and number of new family planning users.

During the fourth quarter, a data review workshop was held for the two focus regions. The DQR allowed for the correction of 12 percent of missing values, seven percent of atypical values, and 26 percent of inconsistencies. The correction of the other outliers will continue in the field. A supervision visit was conducted in the health facilities of the Centre-West region that had the most problems with data quality. The regional health directors were trained on the use of data in ENDOS-BF, reinforcing their knowledge, especially in data analysis to follow up the completeness of districts and health facilities reports.

Deliverables	Deadline	Status
BF-004		
1.1.1 Report on Master Facility List	FY22 Q4	Completed
2.1.1 Report on technical support to ICD-11 implementation in ENDOS	FY22 Q3	Completed
2.1.2 Report on cleaning of ENDOS	FY22 Q3	Completed
2.1.3 Report on ENDOS deployment at facility level in CHISU-supported regions	FY22 Q4	Completed
2.2.1 Report on support to DSS to promote integration of data from other systems in ENDOS	FY22 Q4	Completed
2.2.2 HIS architecture document	FY22 Q3	Canceled
3.1.1 DQR report	FY22 Q4	Completed
3.1.2 Report on supervision visits for DQR	FY22 Q4	Completed
3.1.3 DQR report	FY22 Q3	Completed
3.2.1 Trip or activity report on analysis and use of ENDOS data	FY22 Q3	Completed

Challenges and solutions:

- The effective acceptance and use of the DQR tool by all the actors has been a challenge. One solution is the post-training follow-up with close supervision.
- Given the security situation, the Seba health district staff were unable to attend the DQR training in Koudougou. We suggested training the data manager on Zoom, but the internet connection relay antennas had been destroyed.

Plans for next quarter:

- Support MOH to implement the health facility registry, which houses the MFL, through update workshops and technical support
- Support the DSS to develop SOPs for the strategic plan follow-up
- Support the development of an electronic records management procedure manual

BF-005 - COVID-19 Data system design analysis and immunization tool revision in Burkina Faso

CHISU's BF-005 work plan was approved in June. The job description for the consultant in charge of evaluating the immunization data management system has been validated by the MOH directorates (DPV and DSIS) and USAID/Burkina Faso and the recruitment process is underway.

Deliverables	Deadline	Status
BF-005		
2.1.1 Protocol validation report	FY22 Q3	Delayed start
2.1.2 COVID-19 Immunization Data Management System Assessment Report	FY22 Q4	Delayed start
2.1.3 Final COVID-19 Immunization Data Management System Assessment Report	FY22 Q4	Delayed start
2.1.4 Workshop report of the review and validation of COVID-19 tools	FY22 Q3	Delayed start
2.1.5 Report on the workshop for the tool integration in the COVID-19 platform	FY22 Q4	Delayed start

Challenges and solutions:

- Work under BF-005 began later than anticipated due to the work plan approval date.
- Low availability of people involved in vaccination made it difficult to start activities.

Plans for next quarter:

- Develop and validate the protocol
- Carry out the evaluation
- Validate the evaluation report
- Revise tools and make related adjustments in MS-Surveillance

COVID-002 - COVID-19 Vaccine Data Availability in Burkina Faso

The COVID-002 work plan was approved in August and depends on the completion of BF-005. Activities are expected to start in the next quarter.

Deliverables	Deadline	Status
COVID-002		
2.1.1 Supervision reports	FY23 Q1	Delayed start
2.1.2 Equipment handover report	FY22 Q4	Delayed start
3.2.1 Data review report	FY23 Q1	Delayed start
3.3.1 Indicator identification workshop report	FY22 Q4	Delayed start
3.3.2 Covid Dashboard validation report	FY23 Q1	Delayed start

Challenges and solutions: None.

Plans for next quarter:

- Conduct supervision at regional and district levels.
- Acquire computer equipment for the central and district levels.
- Organize a workshop to identify relevant indicators for the dashboard.

GH-001 - Ghana Scoping

The Ghana scoping exercise statement of work was approved by USAID on October 4 and work began October 26. By the end of the scoping exercise, CHISU gathered and reviewed more than 31 documents and resources and interviewed nine key stakeholders. The findings and recommendations for CHISU support were presented to USAID on November 17. On December 1, USAID shared prioritized areas that CHISU should support. CHISU submitted a work plan to USAID on December 10.

Deliverables	Deadline	Status
GH-001		
Key stakeholder list	FY22 Q1	Completed
Stakeholder recommendations and findings	FY22 Q1	Completed
Proposed 18-month work plan	FY22 Q1	Completed

Challenges and solutions:

- The activity had a delayed start because of difficulties identifying a consultant. Once the consultant was identified, an extension request was sent to USAID and the scoping exercise extended to November 30.

Plans for next quarter:

- None, this activity is closed. Activities are now reported under GH-002.

GH-002 - Strengthening malaria data quality and use in Ghana

CHISU's work plan in Ghana was approved on January 25. The resident advisor was recruited and started work on February 14. A data analyst was also recruited and oriented.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU held a meeting to discuss the implementation planning process with NMCP Ghana Health Service (GHS) Policy Planning Monitoring and Evaluation Division (Centre for Health Information Management) and MOH Policy Planning Monitoring and Evaluation Division. Task 2.2.1 to assess the interoperability readiness between malaria data apps and DHIMS2 has been placed on hold. Digital Square and CHISU have agreed that CHISU will assess, re-scope, and continue the similar work that Digital Square has conducted up to this point. A contract to confirm the revised scope will be finalized in FY23 Q1, at which point work will commence.

Sub-Activity 3: Improved data analysis and use

CHISU met with the NMCP to prioritize the training districts on data validation and verification. The NMCP will submit a proposal for a nationwide initiative. CHISU initiated internal meetings to plan for a malaria data analytics needs assessment. CHISU also initiated discussions with the USAID Accelerator program to coordinate support to communities of practice and the currently dormant Knowledge Translation Platform.

CHISU collaborated with the NMCP and the Policy Planning Monitoring and Evaluation Division of the GHS to plan and conduct data quality improvement training meetings for six regions. A malaria routine DQA was conducted and the six regions with the lowest scores were selected (Upper East, Savannah, Bono,

Ahafo, Western North, and Greater Accra) for training. Following these trainings, CHISU submitted a report summarizing outcomes, began providing funds to the districts to support action on the data quality improvement plans formed in the trainings, and conducted data validation and support visits to facilities with national and regional teams.

CHISU, NMCP, and Centre for Health Information Management outlined the content and provided resource materials to potential facilitators for a training on malaria data analysis, interpretation, visualization, and use targeting the six districts earmarked for malaria pre-elimination. CHISU hosted a facilitator workshop to train district-level staff and finalize training materials September 28–30.

Deliverables	Deadline	Status
GH-002		
2.2.1 Assessment report implementation roadmap	FY23 Q3	Delayed start
3.1.1 Activity report for training and supportive supervision	FY23 Q3	In progress
3.1.2 Communities of practice meetings	FY23 Q3	In progress
3.2.1 Activity report for data validation and verification meetings	FY23 Q3	Completed
3.3.1 Activity report for analysis of malaria data	FY23 Q3	In progress
3.3.2 Recommendations brief	FY23 Q3	In progress

Challenges and solutions:

- The NMCP and other stakeholders were not available for inception meetings during the quarter. These meetings are required to introduce the program to stakeholders, engender collaboration and cooperation, and manage project expectations.
- The redundancy with the interoperability activity was due to inadequate NMCP communication with USAID. To prevent this in the future, the USAID Health Office M&E team has instituted a regular meeting of all partners working in data to share information, collaborate, and complement each other.
- There were delays in getting invitation letters signed for the district workshops but this issue has been reconciled.

Plans for next quarter:

- Focus on supportive supervision for districts trained on data quality improvement, and hold data validation meetings to fill gaps identified during the training workshop. This support will be followed by an evaluation of the effects of the data quality initiative in sampled beneficiary districts.
- Hold planned data analytics and use trainings in six identified districts in collaboration with GHS.
- Identify and begin revised activity for Task 2.2.1.

GH-003 - COVID-19 surveillance system alignment

CHISU's GH-003 work plan providing support to SORMAS and COVID-19 surveillance systems in Ghana was approved on September 22. Upon approval, CHISU began recruiting a health informatics specialist to support tasks in the work plan.

Deliverables	Deadline	Status
GH-003		
1.1.1 SORMAS transition implementation plan	FY23 Q2	Delayed start
1.1.2 Capacity needs assessment report	FY23 Q1	Delayed start
1.1.3 Draft SOPs	FY23 Q3	Not started
2.1.1 ICT infrastructure assessment report	FY23 Q1	Delayed start
2.2.1 Documentation of process enabling interoperability	FY23 Q3	Delayed start
3.2.1 SORMAS data quality assessment report	FY23 Q2	Not started
3.2.2 Quality assurance plan	FY23 Q3	Not started

Challenges and solutions: None.

Plans for next quarter:

- Hire and onboard health informatics specialist.
- Conduct HR capacity assessment.

COVID-003 - Ghana COVID Scoping Exercise

Support to Ghana's SORMAS, a digital integrated disease surveillance and response system, began in the third quarter with the scoping assessment with involvement of the Surveillance Unit of the Public Health Directorate (PHD) of the GHS. CHISU conducted a comprehensive desk review and stakeholder consultations. The scoping assessment examined the status of notifiable disease-specific surveillance systems in use in Ghana and how they align with SORMAS. It also explored the interoperability of SORMAS and

DHIMS2, and determined the functionality of SORMAS for COVID-19 outbreak management for users and technical teams. Finally, the assessment explored human resource and logistics needs and the cost of maintaining the system as an integrated disease outbreak control and management enterprise that communicates with DHIMS2.

CHISU completed the scoping exercise and recommended a number of areas for technical support and those that may require further assessment. CHISU debriefed the Mission and the PHD on the findings so they could prioritize the suggested activities, then developed and sent the work plan to the Mission for comments on August 31. The Mission and the AOR approved the work plan on September 22.

Deliverables	Deadline	Status
COVID-003		
List of Key Stakeholders	FY22 Q4	Completed
Recommendations and findings (Mission debrief)	FY22 Q4	Completed
Recommendations and findings (Key stakeholders debrief)	FY22 Q4	Completed
Proposed Year 2 work plan	FY22 Q4	Completed

Challenges and solutions:

- The pace of implementing the SORMAS activity was slower than expected due to delays in communicating with some stakeholders within GHS. USAID Ghana and CHISU will continue to work with GHS to find ways to expedite processes.
- CHISU had some difficulties contacting and receiving feedback on the proposed activities from the PHD. CHISU overcame this challenge by coordinating a meeting with USAID and PHD to address concerns from past program implementations. CHISU and USAID assuaged PHD's concerns and will facilitate smoother communication moving forward.

Plans for next quarter:

- None, this activity is closed. Activities will be carried out under GH-003.

HT-001 - Haiti Scoping

CHISU received approval for the scoping assessment work plan on October 15 and began discussions with the mission to identify key areas of support and stakeholders. Due to delays in receiving an introductory memo to the MOH, contacting interviewees did not begin until mid-December. CHISU completed a desk review of key documents and held key informant interviews with government officials, United States Government (USG) implementing partners, other funders, and private sector and other stakeholders to gain a deeper understanding of the systems and processes in place. These interviews were conducted virtually and in person, as CHISU was able to travel to Haiti to meet with the Mission and stakeholders.

Following the completion of the interviews, CHISU coordinated a debriefing meeting and prepared the final activity work plan. The work plan was submitted March 8 and approved November 3.

Deliverables	Deadline	Status
HT-001		
Key informant recommendations and findings	FY22 Q2	Completed
Proposed Year 1 work plan	FY22 Q2	Completed

Challenges and solutions:

- Incremental funding limited hiring of staff to provide operational support to the UEP and implement activities.

Plans for next quarter:

- None, this activity is closed. Haiti activities are now reported under HT-002, HT-003, and HT-004.

HT-002 - HIS support to COVID-19 in Haiti

CHISU started work in Haiti in January and overcame a challenging environment to progress across all planned HIS support to COVID-19 activities.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU supported the COVID-19 tracker by continuously monitoring access, troubleshooting issues, and providing internet connectivity to districts, as well as 165 health facilities and 94 mass vaccination campaign sites. Troubleshooting included manually rebuilding analytics tables to resolve missing values and resetting data types. CHISU provided remote technical support directly to field users. CHISU provided financial support for the IT infrastructure of the HIS server environment,

ensuring that the SISNU server for the COVID-19 tracker is available at all times. CHISU added support for the COVID-19 tracker data into the Carte Sanitaire, the national data web portal.

CHISU collaborated with the Health Information System Program West and Central Africa to support the MSPP to configure the passe sanitaire, the digital COVID-19 vaccine certificate. The prototype is ready and awaiting presentation from the MSPP to the director general. The application will be integrated with the MSPP's public website and allow vaccine recipients to collect the authenticated vaccine certificate on demand.

Sub-Activity 3: Improved data analysis and use

Building on overall SISNU support reported in HT-003, CHISU helped the MSPP overcome COVID-19 data quality problems through two workshops and supporting development of the ministry's annual statistical report for two years with a section on COVID-19 surveillance to inform decision-making.

Deliverables	Deadline	Status
HT-002		
2.1.2 Training Report	FY22 Q3	Delayed completion
2.1.3 Updated *Carte Sanitaire*	FY22 Q4	Delayed completion
2.1.4 Training Materials	FY22 Q4	Delayed completion
3.1.1 Data verification training process document	FY22 Q4	Completed
3.2.1 Annual Statistics Report	FY22 Q4	Completed

Challenges and solutions:

- The country's socioeconomic situation has hindered activity implementation. The security crises prevented field visits and direct support to districts; as a result, the safer northern region is more likely to receive visits than the southern part of the country. Movement to Port au Prince is limited and the program's security advisor frequently prohibits travel to the MSPP office and surrounding area. Additionally, gas shortages at times limited staff ability to travel to the office and in-person meetings.

Plans for next quarter:

- Continue collaboration with the M-RITE project on COVID-19 data validation and M&E improvement
- Roll out the electronic passe sanitaire for vaccine recipient authentication

HT-003 - Support to SISNU in Haiti

CHISU started work in Haiti in January and overcame a challenging environment to progress with all HIS support to SISNU activities.

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU supported the MSPP in moving the country's first digital health policy forward by researching the legal requirements for patient confidentiality, data security, and access. The CHISU and USAID digital health policy advisors had ongoing conversations with the MSPP-UEP to gather feedback on data security and patient confidentiality elements of the initial digital health policy draft.

CHISU began planning for the HIS SOCI assessment by selecting a location and identifying a leadership committee. Due to the security crisis, the leadership committee meetings and workshop have been delayed until FY23 Q1.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU drafted a National Health Enterprise Architecture and started planning the first stakeholders' meeting on the eHealth policy in FY23 Q1, which will include the CDC and other MOH divisions including the Directorate of Epidemiology, Laboratory, and Research.

CHISU continued to support MSPP to ensure access to the SISNU environment, as well as ensuring that SISNU-MESI (HIV patient level system) integration was functional. CHISU supported the MSPP's administration of SISNU and conducted a review and update of the essential list of indicators, data collection tools, and guidelines. These updated indicators will be reflected on SISNU dashboards as well as the National Data Health web portal. Certain tasks have been postponed until the next fiscal year to accommodate shifting ministry priorities, including provision of technical support to the UEP to improve the community health information system (CHIS) design. Finally, the technical team has made a number of usability improvements to the *Carte Sanitaire*, and developed a national health web portal for data dissemination for use by non-SISNU staff. A prototype of the data web portal was presented internally and will be officially rolled out with MSPP approval in FY23 Q1.

Deliverables	Deadline	Status
HT-003		
1.2.1 SOCI report	FY22 Q3	Delayed completion
2.1.1 SISNU Service Availability Report	FY22 Q4	Completed
2.1.2 Reviewed and updated essential list of indicators	FY22 Q4	Delayed completion
2.1.3 Guidelines for inventory control	FY22 Q4	Canceled
2.1.4 Trip or activity report for SISNU database review and provision of technical support to indicator/program-specific data issues and system security	FY22 Q4	Completed
2.1.5 Trip or activity report for the assessment of CHIS Tracker design, structures, and functionalities	FY22 Q4	Delayed start
2.1.6 CHIS Rollout Plan	FY22 Q4	Delayed start
2.1.7 Trip or activity report for the *Carte Sanitaire* data review and updates	FY22 Q4	Delayed completion
2.1.8 Training Program	FY22 Q4	Delayed completion
2.2.1 National Health Enterprise Architecture	FY22 Q4	Delayed completion
3.1.1 Trip or activity report for the data quality and data verification process and train the MSPP personnel in DQA process	FY22 Q4	Delayed completion
3.1.2 Data Quality Assurance Plan	FY22 Q4	Delayed completion
3.1.3 Workshop report	FY22 Q4	Completed
3.2.1 Trip or activity report for support to the UEP for the development and dissemination of the annual statistics report	FY22 Q4	Completed
3.2.2 Trip or activity report for the design of comprehensive and program-specific SISNU dashboard	FY22 Q4	Completed
3.3.1 Trip or activity report for the design of specific analysis, widget, and push analytics reports that can trigger data use and help monitor the SISNU data engagement	FY22 Q4	Delayed completion

Sub-Activity 3: Improved data analysis and use

CHISU supported the MSPP to mitigate data quality problems within SISNU. CHISU hosted two regional data quality workshops for department-level staff and supported the validation of 2021 SISNU data for the annual statistical report. CHISU supported the 2020 and 2021 Annual Statistics Report analysis, formatting, and printing, which included reliable health data including sections on family planning and MCH to inform decision-making by presenting gaps and discussing opportunities for program implementation. CHISU also supported the Annual Statistics Report launch event. COVID-19-related support for these tasks is reported under HT-002.

Challenges and solutions:

- The country's socioeconomic situation has hindered activity implementation. The security crises prevented field visits and direct support to districts; as a result, the safer northern region is more likely to receive visits than the southern part of the country. Movement to Port au Prince is limited and the program's security advisor frequently prohibits travel to the MSPP office and surrounding area. Additionally, gas shortages at times limited staff ability to travel to the office and in-person meetings.

Plans for next quarter:

- Involve funders in the eHealth policy conversation.
- Create an HIS thematic group that will drive the eHealth Policy Agenda.
- Deploy the national data web portal and the upgraded version of the Carte Sanitaire.
- Maintain and improve SISNU and MESI interoperability by providing system maintenance for the integration process.

HT-004 - HIS Support to TB/HIV in Haiti

CHISU started work in Haiti in June and overcame a challenging environment to progress with all HIS support to TB and HIV activities.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU started requirements gathering and initial design and development of a harmonized case management information system (MIS) that will standardize and

centralize the data collection and management of OVC programming. CHISU ensured that the TB Tracker, an electronic tool to support TB program management at the facility and community levels, was accessible to users and provided internet connectivity to facility and TB program management at the central and district levels.

Deliverables	Deadline	Status
HT-004		
2.1.1 System and server availability report	FY22 Q4	Completed
2.1.2 Updated *Carte Sanitaire*	FY22 Q4	Delayed completion
2.1.3 Draft data capture requirements documentation	FY22 Q4	Completed
2.1.4 DHIS2 instance of OVC MIS System available on locally hosted development and test server	FY22 Q4	Completed
2.1.5 System test report	FY22 Q4	Delayed completion

Challenges and solutions:

- The country's socioeconomic situation has hindered activity implementation. The security crises prevented field visits and direct support to districts; as a result, the safer northern region is more likely to receive visits than the southern part of the country. Movement to Port au Prince is limited and the program's security advisor frequently prohibits travel to the MSPP office and surrounding area. Additionally, gas shortages at times limited staff ability to travel to the office and in-person meetings. As much work as can be is virtual but internet connectivity is often unreliable during periods of severe unrest.

Plans for next quarter:

- Conduct OVC MIS testing.
- Conduct end-user training for OVC MIS.

ID-001 - Indonesia Scoping and Co-creation / Strengthening HIS progression and digital transformation in Indonesia

A scoping activity was conducted in Indonesia, starting with appointment of a consultant on October 15. CHISU reviewed over 20 documents and webinars, held 15 focus group discussions, conducted six key informant interviews, and synthesized the findings in the scoping report.

The work plan was submitted on January 18 and after several revisions, was approved on July 20. CHISU recruited a Chief of Party, a finance and administration officer, and two consultants (senior data and technology analysts) seconded to the Digital Transformation Office (DTO). In parallel, CHISU continued engagement with stakeholders to: 1) assist in the development of FHIR resources for use cases for TB, MNH, and health financing; 2) support the development of standard mapping in accordance with TB, MNH, and health financing use cases in Indonesia Health Service (IHS) Platform; and 3) support TB and MNH programs in the IHS and FHIR profiles. Priority gender considerations were identified and data collection initiated. These gender considerations will be important for program implementation and supporting HIS maturity.

Sub-Activity 1: Strengthened governance and enabling environment of HIS

A key component of the digital transformation of the health system in Indonesia is the standardization of data based on existing guidelines, policies, and regulations to facilitate data exchange, enable generation of a comprehensive dataset for individuals, and empower individuals and providers with information needed to improve health care decisions. CHISU made significant progress on the mapping and standardization of MNH, TB, and health financing data, working with stakeholders to identify the data sets, standardize the data, and develop the FHIR implementation guides for integration into IHS. The sessions established a strong model for collaboration between the DTO, Center for Data and Information (Pusdatin), technical centers/directorates within the MOH, and other implementing partners. For TB-related data and information systems (SITB), CHISU worked with USAID's TB private sector and the MOH to complete the FHIR TB implementation guide. For MNH, CHISU supported the development of data standardization and interoperability plans for referrals for mothers and newborns (e.g., ICD-10 and the algorithm for determining the readiness and availability of referral services). Due to the complexity of MNH services, CHISU determined that the first focus for the implementation guide would be on antenatal care, followed by maternal death, and intra- and postnatal and newborn care. CHISU, the MOH, and other development partners held working sessions on variable mapping to Indonesia FHIR profile and building of the FHIR bundle examples for the antenatal care use case and on data standardization for the Maternal and Perinatal Death Notification system. For health financing, CHISU supported the

MOH to establish an internal technical team (consisting of DTO, Center of Policy for Health Financing (Pusdjak PDK), and USAID's Health Financing Activity) to provide technical support and data management and guidance on managing integration of various existing systems to create the health financing information system. This resulted in the development of a plan to guide data standardization and interoperability for the health financing information systems internal to the MOH.

More broadly, CHISU provided feedback on the Satu Sehat Playbook, which provides technical guidelines for MNH, TB, and health financing information systems to interoperate with Satu Sehat, and is intended for sub-national vendors to streamline information systems. The MOH determined that Digital Imaging and Communications in Medicine standard will be an integral part of IHS to support individual electronic medical records. CHISU also reviewed the procurement process of SNOMED CT as a terminology service for the MOH, resulting in its adoption and Indonesia becoming a SNOMED international member. CHISU supervised the standards mapping process between radiologists (referral hospital), DTO, Pusdatin, and the health services directorate for radiology procedure terminology.

In Indonesia, a multi-stakeholder national TWG is rarely used for initiatives like digital health transformation. Therefore, CHISU developed materials to orient Pusdatin leadership to the role and importance of an HIS TWG. The initial HIS TWG meeting was held in September, with 37 persons representing 25 institutions including DTO, private sector, communities of practice, implementing and development partners, and academia. The meeting resulted in the formation of a committee that will design the TWG TOR, including sub-working groups and recommended members.

To develop a digital health maturity index for Indonesia, CHISU oriented the DTO and Pusdatin to various digital health maturity tools using the Navigator for Digital Health Capability Models. After the orientation, the DTO and Pusdatin used the Navigator to find a tool that met MOH's goals and objectives for the readiness assessment and chose the SOCI. CHISU and the MOH held a workshop to adapt the tool for use at the national and facility levels, learning from CHISU's experience in Serbia. The workshop resulted in a draft of the digital health maturity assessment instrument at the national, regional, and facility levels, and a plan for its implementation at the facility level. CHISU, Pusdatin, and DTO customized the tool in DHIS2, creating an accessible macro- and micro-level digital maturity assessment instrument. This tool was tested with over 80 representatives from Pusdatin, PHO DKI Jakarta, North Sumatra, South Sulawesi, East Java, PERSI, and hospitals nationwide. The assessment was conducted with national stakeholders (for the macro-level), and the micro-level tool was released to 3,000 hospitals. The assessment process was fully launched and expected to be completed by October 15. To complement the assessment tool, CHISU held a focus group with the MOH, regional health offices, professional associations and organizations, and development and implementing partners to explore themes such as strategy, investment, support for implementing digital transformation, and gaps in HIS strengthening.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU provided direct technical assistance to the DTO and Pusdatin to accelerate the development of IHS. This included participation in technical working sessions, technical mentoring, provision of technical inputs to key documents and products, embedding two senior technical advisors to the DTO, and co-facilitation of key foundational activities. CHISU supported the DTO and Pusdatin to conduct a standards and interoperability training for 18 hospitals on the use of FHIR with IHS. CHISU, the DTO, and Pusdatin conducted a workshop with stakeholders to plan the digitization of primary care systems for MNH, TB, and non-communicable diseases. CHISU also established a FHIR team in June within the DTO and Pusdatin to focus capacity-strengthening efforts related to FHIR and advance development of FHIR data standards for the data dictionary. Embedded senior technical advisors integrated data (e.g., nutrition, MNH, and TB) from various sources into a data warehouse. Platforms that were integrated included the Program Indonesia Sehat dengan Pendekatan Keluarga (Healthy Indonesia Program with a Family Approach), aplikasi Elektronik/e-Pencatatan dan Pelaporan Gizi Berbasis Masyarakat (Electronic application/e-Community Based Nutrition Recording and Reporting), the Elektronik Kohort (Electronic Cohort [for pregnant women and newborns]), and Sistem Informasi Tuberkulosis (Tuberculosis Information System). The data profile from these systems will be used as the patient database for the IHS, and will support government planning (e.g., immunization program targeting and dashboard development). CHISU

advisors embedded with the DTO finalized the web API standardization with the BPJSK as the interoperability mechanism with MOH, but this was not tested due to bureaucratic delays between the MOH and BPJSK. In addition, CHISU developed SOPs and a service-level agreement for users of the data warehouse to protect HIS health care data. CHISU reviewed and designed the MOH cloud infrastructure, to ensure capacity to support IHS implementation, including security, backup, and recovery based on MOH blueprint goals. CHISU made progress in the data architecture infrastructure (including security and cloud functions) supporting the transition from a multi-cloud environment to a single source using Google cloud. Overall, IHS has registered 90 participants, including hospitals, clinics, health centers, and insurance companies.

CHISU and USAID's Health Financing Activity supported the DTO and Pusjak PDK to develop metadata definitions for an integrated health financing information system, mapping indicators and data sources and carrying out health financing data collection, analysis, and cleaning. This resulted in the design of the integrated health financing information system, or SPAK. A workshop with representatives from Kemendagri, Kemenkeu, puskesmas, clinic, hospitals, and others followed to develop a complete mapping of the metadata required by Pusjak PDK for analysis and policymaking. CHISU provided technical back-up support to data interoperability discussions with BPJS Kesehatan, including the chief of DTO, secretary general of MOH, and BPJS Kesehatan directors, for the renewal of the memorandum of understanding between MOH and BPJS Kesehatan. The new memorandum of understanding is expected to outline BPJS Kesehatan compliance with data interoperability and sharing with the MOH.

CHISU initiated discussions to review the existing enterprise architecture, and commenced the health worker registry and master facility index. CHISU supported the Pusdatin, DTO, and other MOH stakeholders to identify the key data sets, sources, and functionalities for the registry and clean the data in the health worker information system, including flagging possibly incorrect records. CHISU also completed the list of hospitals in the master facilities index (Sarana) using the Hospital Information System Online. Sarana will be used as the standard code for health facilities in the Satu Sehat platform, and primary care health facilities will be added in the next quarter.

CHISU assisted the DTO with the finalization of the Satu Sehat infrastructure and initial interoperability testing in preparation for the July launch. The launch demonstrated how Satu Sehat can function as a health information exchange platform, and created a forum for stakeholders to discuss the implications of the platform on Indonesia's health system. The Provincial Health Office of East Java, supported by the DTO and CHISU, conducted a workshop to integrate all puskesmas information systems into Satu Sehat. The workshop was attended by representatives from all cities/districts in East Java, and the 15 puskesmas system developer groups in the province. The three-day workshop convened participants from 36 districts and 15 developer groups to integrate 3,587 puskesmas information systems with Satu Sehat. Through this integration, data exchange is improved and health services can be optimized.

Significant progress was also made in interoperability between Satu Sehat and TB information systems. Building on the FHIR implementation guide for TB, CHISU developed a use case flow diagram and user guide for stakeholders to integrate hospital information systems and SITB through Satu Sehat, testing all steps of reporting TB cases with SILOAM hospital information system. Technical working sessions will continue in preparation for the planned launch of interoperability between SITB and Satu Sehat in October 2022. Progress integrating lab information systems and SITB continued with GxAlert systems, including sharing the SITB API, development of a data-missing reminder to GxAlert's lab users to ensure they are aware of the basic data needs to be filled in SITB, and development of systems to retry calling SITB API based on data fails. Technical discussions were also held on the SITB system migration plan into MOH Pusdatin data center. CHISU also supported the training of over 300 (online and offline) staff on integration of their hospital information systems TB drug prescribing and dispensing reporting data with Satu Sehat. Guidelines to integrate hospitals with Satu Sehat and the TB drug prescribing and dispensing terminology service were also established. CHISU supported the DTO to conduct a meeting with stakeholders to synchronize the digitization of TB in primary care, discuss plans and timelines for adaptation/streamlining of digital tools, and review TB information systems for integration with the Satu Sehat platform.

CHISU conducted data security and privacy activities, including drafting security questionnaire for the Satu Sehat onboarding form and completing the SOP for data access to ensure secure Satu Sehat integration.

To reinforce the secure exchange of data for the Satu Sehat data warehouse, the advisors created SOPs, a service-level agreement, and API gateway for internal and external systems to access the SatuSehat environment. CHISU began discussions on the development of a new security awareness program with the MOH and conducted an evaluation of Satu Sehat against international data security standards, ISO 27001 and 27799. CHISU supported reaching consensus between Pusdatin, the DTO legal team, and others for a new process to request data access and standardized data access requests to the data warehouse. CHISU created several data models from various sources (onboarding condition, diagnostic report, encounter, immunization, observation, and organization) and encrypted sensitive information in the Satu Sehat data model. In addition, CHISU developed the first design of the data model for patient, encounter, condition, organization, and observation. Modeling was also conducted during the quarter so that the incoming data from Satu Sehat could be used effectively (e.g., dashboard creation, analytics). CHISU discussed metadata format, structure, and management in the data warehouse with Pusdatin and others, and supported MOH data warehouse and analytics infrastructure planning to ensure scalability and sustainability. CHISU made progress on technology development, ultimately releasing guidelines with governance structures and verification steps for product development and release processes.

Sub-Activity 3: Improved data analysis and use

CHISU developed a preliminary catalog of data products and sources that provide a general overview of the health status of Indonesia, program specific reports, and other digital tools. CHISU and the MOH then identified and conducted key informant interviews on use of the products and sources.

CHISU completed a data use needs assessment and identified a model for data use capacity strengthening. CHISU undertook a desk review of data and information products for MNH, TB, and health financing; conducted in-depth interviews with key stakeholders (including Pusdatin and DTO); and hosted a workshop to review findings of the assessment and validate the design of the curriculum. Key areas identified for the capacity strengthening program include analyzing community/other determinants of health outcomes; forecasting demand for public health services; and modeling impact of policy/program changes. CHISU identified activities to support improved Satu Sehat design, including a review of the types of digital tools (by purpose, audience, etc.); and management requirements for different purposes and principles for effective data visualization. CHISU continued to develop and refine several dashboards, including for newborn, baby, toddler, teenager, and reproductive age people, and Child Immunization Month. CHISU also developed dashboards for routine immunization (polio drop and PCV immunization), including disaggregation to the puskesmas level and TB monitoring. CHISU also conducted a dashboard use review with Pusjak PDK (health financing) to analyze the claim data use based on Eclaim. The dashboard shows the trend of outpatient and inpatient cases, and distribution of cases treated by location. Finally, to complement the systems integration activities, CHISU developed the Satu Sehat East Java Dashboard to monitor the progress of puskesmas integration with Satu Sehat, and developed dashboards using East Java puskesmas data to gain insights on disease distribution, demographics, and number of visits.

CHISU conducted initial meetings to start development of the AI and ML use cases with Pusdatin and DTO. These initial meetings included an overview of AI/ML functionalities, followed by brainstorming on potential use of these functionalities to solve key data management, quality, and use problems. CHISU provided additional background to address data quality concerns and improve understanding of AI/ML.

Challenges and solutions:

- The scoping exercise was delayed by the absence of MOH introduction letters. The MOH staff from health programs did not participate fully in the interviews and discussions, leaving the team to gather input mostly from implementers and development partners.
- The scope, approach, and objectives of the digital health maturity assessment were not aligned internally in the MOH. CHISU worked to create understanding and alignment.
- DTO does not have technical capacity or health financing staff expertise. CHISU created a technical team with members from DTO, Pusjak PDK, and USAID's Health Financing Activity to guide strengthening and integration of data from the health financing information systems.
- Overall, there is a need for stronger coordination between the DTO and Pusdatin, and for strong change management processes to be put in place to

ensure digital health transformation. CHISU included approaches to improve coordination and change management practices into the work plan.

- The availability of stakeholders and prioritization of certain activities has been a challenge. CHISU will continue to work with stakeholders to integrate activities into their schedules.

Plans for next quarter:

- Establish the HIS TWG; complete the ANC FHIR guide; develop the HIS Resource Center and operational plan for the Digital Health Transformation Strategy; and finalize the digital health maturity assessment (including SOCI) report.
- Finalize interoperability assessment, roadmap, and beta version of the middleware; communication plan for the Enterprise Architecture; launch the TB information systems interoperability use case and advance the integration health financing information system, and continue support to Satu Sehat.
- Launch the data use capacity strengthening program and finalize the AI use case.

MG-001 - Three Health Information System Assessments in Madagascar

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU worked closely with PMI Measure Malaria colleagues in Madagascar to coordinate the implementation of the SOCI assessment, which will be held in early October, led by the CHISU Niger resident advisor, and facilitated by MOH staff. The assessment has been prioritized as its recommendations will be included in

Deliverables	Deadline	Status
ID-001		
1.1.1 Quarterly HIS TWG Meeting report with action plan	FY23 Q1	In progress
1.1.2 Catalog of technical guidelines, policies and regulations for HIS Resource Center	FY23 Q1	In progress
1.1.2 FHIR Indonesia Implementation Guide	FY23 Q1	In progress
1.1.2 Curriculum for utilization of FHIR resources for MNH, TB and health financing data	FY23 Q1	In progress
1.2.1 Operational plan, including M&E plan, for Digital Health Transformation Strategy	FY23 Q1	In progress
1.2.2 HIS Resource Center	FY23 Q1	Delayed start
1.2.3 Digital Health Maturity Assessment Report & action plan	FY23 Q1	In progress
2.1.1 National interoperability readiness report and action plan	FY23 Q1	In progress
2.1.2 Updated Indonesia Health Data Dictionary based on FHIR Standards	FY23 Q1	In progress
2.2.1 Interoperability roadmap for MOH	FY23 Q1	In progress
2.2.1 Beta version of interoperability layer for IHS	FY23 Q1	In progress
2.2.2 Communication plan for dissemination of enterprise architecture	FY23 Q1	Delayed start
2.2.3 Contributions to the MNH, TB, and health financing modules for the release version of the IHS	FY23 Q1	In progress
2.2.3 Change management plans for transition to IHS	FY23 Q1	In progress
3.1.1 Updated dashboards for data analysis	FY23 Q1	In progress
3.1.1 Policy briefs for linking data from HIS for MNH, TB, and health financing	FY23 Q1	In progress
3.1.2 Report of gender integration activities	FY23 Q1	In progress
3.2.1 Data analytics for the FHIR database on the IHS platform	FY23 Q1	In progress
3.2.2 National and provincial data quality improvement tools	FY23 Q1	In progress
3.3.1 AI user profiles for IHS for MNH, TB, and health financing	FY23 Q1	Delayed start
2022 Annual work plan	FY23 Q1	Completed
CHISU Indonesia Activity, Monitoring and Evaluation Plan	FY23 Q1	In progress

the development of the HIS strategic plan 2023–2027. The team had introductory calls with the MOH and its Directorate for Planning and Information System. CHISU met with several stakeholders in person during the last week of September.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

The HPHC website was translated into Malagasy and is ready to be launched to facilitate feedback from a wider number of participants and support dissemination of HPHC assessment results. CHISU has been preparing for the scoping exercise to determine parameters of the nutrition digitization assessment, which will take place in the next quarter.

Deliverables	Deadline	Status
MG-001		
1.2.1 SOCI Assessment Report	FY23 Q1	In progress
1.2.1 Assessment on RHIS data management standards Report	FY23 Q1	In progress
2.1.1 HPHC website translated into Malagasy	FY23 Q1	Completed
2.1.1 Result dissemination meeting	FY23 Q1	Delayed start
2.1.2 Scoping Report	FY22 Q4	Delayed start
2.1.2 Assessment plan	FY22 Q4	Delayed start

Challenges and solutions: None.

Plans for next quarter:

- Conduct SOCI assessment and finalize report.
- Conduct RHIS data management standards assessment and finalize report.
- Conduct HPHC assessment and hold a result dissemination meeting.
- Conduct assessment scoping of the national nutrition office digitization needs and finalize the scoping report and assessment plan.

ML-001 - Mali Scoping

The Mali scoping exercise statement of work was approved by USAID on September 16. By the end of the exercise, CHISU gathered and reviewed 29 documents and resources and interviewed more than 37 stakeholders. On November 4, CHISU presented scoping exercise findings and recommendations for the work plan. CHISU and USAID agreed on the areas of support for the work plan on November 23 and the work plan was submitted for approval on December 3.

Deliverables	Deadline	Status
ML-001		
Key stakeholder list	FY22 Q1	Completed
Recommendations and findings	FY22 Q1	Completed
Proposed Year 1 work plan	FY22 Q1	Completed

Challenges and solutions: None.

Plans for next quarter:

- None, this activity is closed. Mali activities are now reported under ML-002.

ML-002 - Strengthening COVID-19 data quality and use in Mali

The work plan was approved on January 27, the kickoff meeting with USAID was held on February 7, and priority activities to be conducted for the first three months (March to May) developed. These activities were approved on February 18. The CHISU introductory meeting in the country with the stakeholders was held on February 28 and implementation of the activities began March 1. Two data analysts, an ICT advisor, and a finance and operations manager started on April 1.

Sub-Activity 1: Strengthened governance and enabling environment of HIS

In 2021, the members of the national COVID-19 crisis committee met irregularly. CHISU supported the Directorate of Public Health Emergency Operations (DOUSP), the technical arm of the National Institute of Public Health (Institut National de Santé Publique - INSP) for the management of public health emergencies, to revise the national COVID-19 crisis committee's TORs into a technical committee to coordinate and manage health emergencies, including COVID-19. There was also a national HMIS data quality group that focused on routine vaccination data that met irregularly. CHISU supported the development of TORs and provided technical and

financial support for a COVID-19 data quality group to convene for its first meeting on June 24. Discussions focused on the frequency of health emergency meetings, the difficulties of the response to COVID-19, the measles epidemic and the age groups affected by it, and the country's preparedness for monkeypox.

CHISU hosted a workshop to review and customize the SitRep COVID-19 in DHIS2 on March 22 and 23. Participants came from the sub-Directorates of HMIS, Epidemiological Surveillance and Immunization, INSP, WHO, and other partner organizations to revise, validate, and customize the SitRep template, add missing data elements, and create dashboards. CHISU then organized three working sessions with INSP/DOUSP to revise the dashboard and SitRep customized form so that the operational level can enter data directly and SitRep generates automatically. During these sessions, procedures for using the SitRep form and users who must enter data were defined. CHISU shared the SitRep template with the INSP, other directorates, and hospitals, and organized orientation sessions for users on the customized SitRep report and the dashboard in DHIS2.

CHISU collaborated with USAID/Mali's Health Systems Strengthening project to support the functioning of the DHIS2 technical team. These meetings helped to resolve some issues such as the separation of the main server into three 128 GB servers (for aggregate data, tracking, and COVID-19 data management), access to pre-2022 data from DHIS2 after the server separation, and tablet synchronization for the Bamako districts. Discussions during these meetings included applications and their interoperability readiness (e.g., the WHO/EPI application and Medexis). The Global Fund Management Unit oversaw the server separation process, and during this transition, CHISU provided financial support for a server capacity increase.

CHISU organized COVID-19 data quality surveillance subgroup meetings to review surveillance data from 2020-2022 from COVID-19 tracker and aggregate systems, develop analysis reports, and plan for data quality mitigation. CHISU organized a meeting with eight key HIS partners to discuss collaboration and complementary financing of common activities, customization and distribution of tablets, using Android phones for data entry, and intervention areas for community-based surveillance. CHISU collaborated with the Regional Disease Surveillance System Enhancement/World Bank to train HIS and surveillance officers to enter historical and daily COVID-19 data in Sikasso and Ségou Regions.

CHISU supported a high-level workshop on national health emergency priorities and other public health events. The workshop was organized by the Ministry of Health and Social Development with technical and financial support from CHISU, the Global Fund, and CDC. The goal was to improve the response to health emergencies in the country and develop a plan to resolve challenges, including COVID-19 prevention and response. There were 68 participants from the MOH, other ministries, and technical and financial partners. With financial and technical support from CHISU, the DHIS2 technical team met twice with DHIS2 administrators and partners.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

In March, CHISU conducted a rapid assessment to determine the needs for strengthening the COVID-19 data management system in Mali. CHISU identified strengths, areas for improvement, opportunities to support the system; analyzed secondary data sources for reporting COVID-19 data from health facilities to the national level; and cross-referenced collection tools (Excel files) and databases (aggregated and trackers) to identify missing data elements. As a result of this assessment, CHISU configured the system so that a patient registered in the surveillance system can be searched and found in the vaccination database through the links created. CHISU organized a workshop to analyze the dashboards of the COVID-19 tracker (surveillance, vaccination). Additionally, existing data tables and graphs were corrected to meet the information needs of decision-makers, and new dashboards were created and indicators were added to them.

CHISU conducted an ICT assessment, using the tool developed by MEASURE Evaluation, that included partners, central, regional, district, and health facility levels of Bamako, Segou, Mopti, and Sikasso. The assessment report is being finalized and will be shared during the next quarter. CHISU also began work on the HIS interoperability maturity assessment that will be completed in the next quarter. CHISU conducted a desk review of previous MOH and partner analyses, studies, and assessments on digital tools and interoperability, and developed an inventory of digital tools.

CHISU provided internet connection for central-level units such as INSP, the Public Health and Hygiene Directorate, and the Planning and Statistics Unit, and regions and health facilities in the districts of Bamako, Sikasso, Segou, and Mopti. During next quarter, CHISU will work with the MOH to find a more sustainable solution for Internet connectivity. This will include exploring the possibility of partnership with telecommunication companies (Orange, Malitel, and Telecel), Ministries of Telecommunications and Finance and Health and is likely to improve HMIS data collection, analysis, and reporting.

CHISU provided technical and financial support to build the skills of users on data entries for COVID-19 surveillance tracker and aggregate report forms in DHIS2 for the Bamako, Sikasso, Segou, and Mopti regions. After the orientation sessions, these districts began historical data entry, and reached 90 percent completeness by the end of September. CHISU and Bamako DRS staff conducted supervision visits in all Bamako districts every week and DRS staff assessed data quality. CHISU provided technical and financial support to orient Segou District users to surveillance tracker and aggregate report forms in DHIS2 and complete historical data entry.

CHISU held several working sessions with INSP to discuss the possibility of interoperability between DHIS2 and the YNIETTE application, which manages COVID-19 traveler data. During these sessions, CHISU found that the YNIETTE application was developed by an independent consultant who did not share the source codes and that the INSP/IT department had not fully participated in all stages of the implementation. CHISU has engaged the developer, and interoperability with DHIS2 will be finalized during the next quarter.

Sub-Activity 3: Improved data analysis and use

CHISU, the Public Health and Hygiene Directorate, INSP, the Planning and Statistics Unit, and other partners started to develop a DQA plan focused on COVID-19 data needs. This plan includes orientation to SOPs, remediation of data quality issues, feedback to reporting levels, and metrics for governance body monitoring and oversight. This plan will be finalized and validated during the next quarter. CHISU supported reviews of COVID-19 surveillance data for Bamako, Mopti, Sikasso, Segou Heath Districts using the WHO DQR module. The discussions focused on the availability of the harmonized database of positive COVID cases, the historical and current surveillance data entry in DHIS2, absence of the epidemiological number on the notification forms, connection issues, and assignment of IDs by the laboratory. CHISU also conducted weekly data analysis meetings with the Public Health and Hygiene Directorate surveillance team. They identified issues of completeness and timeliness of reporting in DHIS2, inconsistencies, and missing values and outliers for all regions of Mali, and shared the problems observed with stakeholders for the correction.

CHISU hosted meetings with the heads of the Faculty of Medicine of Mali and the Department of Education and Research in Public Health to discuss the advanced analytics for the COVID-19 response to generate actionable data, e.g. assessing risk factors for COVID-19 disease and mortality in patients with comorbidity.

Deliverables	Deadline	Status
ML-002		
1.1.1 Revised TWG TOR and weekly COVID-19 sub-commission meetings (priority activity in plan)	FY22 Q2	Completed
1.1.1 Weekly COVID-19 sub-commission meetings	FY23 Q1	In progress
1.1.2 Updated guidance documents for community based surveillance	FY22 Q4	Delayed start
1.1.3 Data sharing agreement document (priority activity in plan)	FY22 Q2	Completed
2.1.1 Workshop reports and dashboards	FY23 Q1	In progress
2.1.2 CBS roadmap and workshop reports	FY23 Q1	Delayed start
2.1.3 ICT assessment and inventory report	FY22 Q3	Completed
2.1.4 Recommendations for sustainable internet solution	FY23 Q1	In progress
2.2.1 Assessment report	FY22 Q4	Delayed completion
3.1.1 Data quality assurance plan	FY22 Q2	Delayed completion
3.1.2 Training reports on data quality assurance plan	FY22 Q4	Delayed start
3.2.1 Data quality review meeting reports (priority activity in plan)	FY22 Q3	In progress
3.2.2 Data analysis guide and selected dashboards	FY22 Q3	Completed
3.3.1 Activity report	FY23 Q1	In progress
3.3.2 Recommendations brief for advanced analytics	FY23 Q1	In progress
3.3.3 Recommendations brief for artificial intelligence for COVID-19 data use	FY23 Q1	In progress

CHISU initiated development of an AI use case focused on COVID-19 vaccine allocation. For this exercise, CHISU is using additional data sources, including the Demographic Health Survey, national HIS yearbooks from 2015–2020, the Service Availability Readiness Assessment, and the Multiple Indicator Cluster survey.

Challenges and solutions:

- DHIS2 Cloud Server hosting fees are paid by technical and financial partners. MEASURE Evaluation paid for them previously. When that project closed, Global Fund continued through PSI, followed by the Global Fund through the Health System Strengthening Unit. Difficulties were encountered as the DHIS2 server had not worked for three days in early March due to the non-payment of these fees. The Global Fund Management Unit has now paid through March 2023.
- A problem of internet network availability at all levels makes it difficult to enter data into DHIS2. CHISU asked the MOH to discuss improving the quality of the network with its counterpart from the Ministry of Digital Economy, and the general secretary promised to do so. CHISU will follow up on this also with the MOH.
- Low RAM capacity of DHIS2 server was a problem resulting in poor analysis of data. CHISU suggested separating the server into three and supported some of the related costs.
- Given the insufficient ICT equipment in Mali, CHISU conducted an ICT assessment to support the MOH and other funding partners to prioritize and plan procurement of ICT equipment.
- The conflicting calendars of the Public Health and Hygiene Directorate, the Planning and Statistics Unit, and INSP posed a challenge to CHISU's implementation and negotiation capacity with national and regional stakeholders. CHISU suggested the establishment of joint planning meetings to overcome these difficulties.

Plans for next quarter:

- Organize continued meetings for national health emergencies committee, DHIS2 technical team, data quality group, and coordination group of HMIS partners.
- Update community-based surveillance guidance.
- Set up an ICT inventory form in the HMIS
- Complete HIS interoperability maturity assessment.
- Finalize DQA plan.
- Orient central and regional staff to the DQA plan.
- Conduct regular COVID-19 DQRs.
- Analyze COVID-19 data weekly.
- Explore partnerships with MOH and selected institutions for advanced analytics for the COVID-19 response.
- Complete the AI use case.

MW-001 - Malawi Scoping

The Malawi scoping exercise statement of work was approved by USAID on November 2. CHISU hired a senior M&E advisor who started on January 3. By the end of the Malawi scoping exercise, CHISU gathered and reviewed 27 documents and resources and interviewed 10 stakeholders. On February 9, CHISU presented the scoping exercise findings and recommendations for the work plan. CHISU and USAID agreed on the areas of support for the work plan and it was submitted for approval on March 9.

Deliverables	Deadline	Status
MW-001		
List of key stakeholders	FY22 Q2	Completed
Proposed Year 1 work plan	FY22 Q2	Completed
Recommendations and findings	FY22 Q2	Completed

Challenges and solutions: None.

Plans for next quarter:

- None. This activity is closed. Malawi activities are reported under MW-002.

MW-002 - Strengthening malaria data systems and use in Malawi

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU supported CMED and the NMCP technically and financially to hold health sector M&E and malaria-specific TWG meetings. During the NMCP meeting, the malaria program presented the status of key malaria program indicators demonstrating program progress, and raised policy proposals on the timing of long-lasting insecticide-treated net distribution campaign. CHISU staff also supported CMED with a data quality presentation and further engagement with the Global Fund mission on the DHIS2 support needs during an M&E thematic meeting.

CHISU supported development of the digital health policy, ensuring that DHIS2 is adequately integrated in the policy for long-term support and sustainability. CHISU also attended digitalization delivery labs meetings on behalf of CMED and DHD in April and May, which were organized by the Presidential Delivery Unit to expedite implementation of key digitization initiatives across government ministries. CHISU supported the CMED/DHD to hold the Digital Health TWG and participated in the EMR sub-TWG and National DH Task Force meetings. During these meetings, the draft digital health policy, the hospital-wide EMR, and the digital health assessment report were presented to stakeholders for input. CHISU supported CMED and DHD to develop a work plan and secure access to a $1.6m World Bank grant that will be used to develop a follow-on HIS strategy, DHIS2 upgrades, user (including NMCP coordinators) training, production of health program area bulletins (expanding on CHISU work in developing the malaria bulletin), HMIS reviews, and implementation of a follow-on health facility assessment. The assessment will provide data on the results of the HSSP II implementation and a baseline for implementation in 2023. Further, project staff initiated additional resource mobilization support for CMED and DHD by targeting the Global Fund CRM-19 to acquire resources for the hospital-wide system and paper registers and reporting tools. CHISU also helped CMED engage the GAVI mission on challenges affecting the implementation of its GAVI-supported DHIS2 activities. At the end of the quarter, CHISU staff joined the MOH delegation and supported development of the country presentation for the HDC meeting on September 28 and 29 at WHO headquarters in Geneva. This year's meeting focused on aligning partner support with the Government of Malawi to strengthen the Integrated National Data System for health.

CHISU also conducted an HIS SOCI assessment workshop in June with participants from MOH departments, and key programs and HIS implementing partners. Before the stakeholder workshop, the SOCI assessment approach was presented in the MOH M&E Technical Working Group meeting for inputs and endorsement. Results from the SOCI assessment will feed in the preparation of the MOH's third HIS strategic plan, which is tied into the MOH Health Sector Strategic Plan III (also currently under development by the MOH).

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU engaged the NMCP, CMED, and DHD to initiate work on the development of an automated malaria indicator bulletin in DHIS2. Stakeholders agreed on the steps including developing content by CMED and the NMCP; testing the bulletin application in the local DHIS2 staging instance by CHISU and DHD; formatting, layout, and design by DHD and CHISU; integration of the application in the local DHIS2 live instance; and training NMCP staff on its use. Following agreement with NMCP on content, CHISU installed the bulletin app on a test server. In the next quarter, CHISU will transition the application and the settings to the production instance to produce the first bulletin.

Sub-Activity 3: Improved data analysis and use

CHISU supported CMED with the dissemination of the Malawi 2020 DQA report and associated improvement plan in the M&E TWG meeting. CHISU supported the Global Fund M&E thematic meeting and program and data review meetings in the five health management zones. CHISU helped the NMCP analyze data and prepare reports for malaria-specific integrated supportive supervision and mentorship interventions. The activities are funded by the Global Fund; CHISU supported the data analysis and reporting. The results will help the NMCP suggest and track service delivery improvements.

CHISU supported CMED and the NMCP in implementing integrated program data and malaria-specific program reviews in the five zones. CHISU participated in and provided technical inputs to program and data review meetings in the Central West, Central East, North, Southeast, and Southwest Zones. In each, CHISU helped the NMCP engage district health management teams on malaria program and data issues that emerged during the review meetings. Before the meetings, CHISU helped CMED develop the concept note, data analysis, and presentation guides for districts. For NMCP reviews, CHISU participated in and provided technical inputs for Lilongwe and Kasungu Districts. CHISU will continue to work with the NMCP to develop a schedule and implement reviews for the remaining CHISU target districts.

CHISU worked with the NMCP, CMED, and selected district program and data management staff to discuss best practices on data quality. Based on the discussions, the MEASURE Evaluation routine DQA protocols, and the WHO DQR app in DHIS2, CHISU drafted a malaria DQA job aid. Following a pre-test in Mangochi District and subsequent modifications, CHISU organized a training session for 72 district staff (9 from each district) on facility data quality verification, mentorship, and DHIS2 data modification. During the field visits to 263 facilities in all eight CHISU targeted districts, project staff worked with NMCP and CMED staff to provide technical assistance to district staff conducting facility-level data quality verification.

Deliverables	Deadline	Status
MW-002		
1.1.1 M&E TWG meetings conducted	FY23 Q2	In progress
1.1.2 NMCP TWG meetings conducted	FY23 Q2	In progress
1.1.3 HSSP III Draft M&E Framework	FY23 Q2	In progress
1.1.3 Digital Health Policy	FY23 Q2	In progress
1.1.3 Malaria Work Plan	FY23 Q2	Delayed start
1.2.1 Completed SOCI assessment	FY23 Q2	In progress
2.1.1 Consolidated List of registers	FY23 Q2	Completed
2.1.1 Specifications and Quantities for procurement in place	FY23 Q2	Completed
2.1.2 Automated Malaria Bulletin	FY23 Q2	In progress
3.1.1 Documented action plans	FY23 Q2	In progress
3.1.2 Facility level dashboards	FY23 Q2	Delayed start
3.1.3 Analysis of current data quality concerns	FY22 Q4	Completed
3.2.1 Districts using the DQR module	FY23 Q2	In progress
3.2.2 District Data Review Meetings	FY23 Q2	In progress
3.2.3 Keynote Indicator Presentations for Zonal and national Joint Action Review	FY23 Q2	Completed

Challenges and solutions:

- CHISU noted inadequate capacity of the secretariat (NMCP) to coordinate follow up on the actions generated from the meetings that we support and attend. Program staff will continue to help the NMCP follow up on action items and next steps.
- There are overlaps and redundancies between the newly created DHD and CMED, putting extra demands on CHISU to manage requests and expectations. Program staff will continue to manage both entities as key stakeholders, while focusing on activities that benefit both departments.
- There is reduced MOH capacity to manage the DHIS2 due to staff turnover and re-direction of DHIS2 funding from the Global Fund. CHISU is supporting CMED to engage the Global Fund and is advocating for more DHIS2 staffing in CMED and DHD.

Plans for next quarter:

- Continue to provide HIS governance and systems strengthening support
- Disseminate the SOCI workshop report
- Disseminate the first edition of the automated Malaria Key Indicator Bulletin.
- Conduct second round of malaria district data verification, DHIS2 modification, and mentorship visits.
- Support the NMCP in the development of the malaria strategy.

COVID-008 - Scoping Exercise in Namibia

In Q4, CHISU conducted a desk review and traveled to Namibia for a scoping exercise to inform the program's upcoming 9-month work plan aimed at supporting COVID-19 data systems. CHISU's technical advisor traveled August 8–19 and held key informant discussions with the Mission, MOH, and other stakeholders. Following a debrief and discussion of possible activities with the Mission at the end of the trip, CHISU refined priority activity areas and presented them to the Health Information and Research Directorate (HIRD) on September 13. Feedback on HIRD's priority areas for the work plan was expected on September 23 but had not been received by the end of Q4, so the Mission and AOR extended the work plan submission deadline.

Deliverables	Deadline	Status
COVID-008		
List of Key Stakeholders	FY22 Q4	Completed
Findings and consolidated feedback on priority areas of support (debrief with Mission)	FY22 Q4	Completed
Findings and consolidated feedback on priority areas of support (debrief with HIRD Director and Technical Team)	FY22 Q4	Completed
Proposed work plan	FY23 Q1	In progress

Challenges and solutions: None.

Plans for next quarter:

- Meet with USAID Namibia and USAID Washington to confirm next steps.
- Submit work plan.

NR-002 - Strengthening the HIS in Niger

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU assisted the Directorate of Statistics (DS) to finalize its 2022 operational plan, which included all CHISU's activities. CHISU conducted the HIS SOCI assessment to identify gaps in the Niger HIS and inform recommendations to fill them in the next strategic plan. CHISU helped the DS prioritize activities and finalize the improvement plan. CHISU's planned support for the new HIS strategic plan was delayed due to the late evaluation of the old strategic plan, originally expected to be supported by WHO. In May, CHISU revised the work plan to provide technical support for this evaluation. The results from SOCI and the evaluation of the previous HIS strategic plan are both contributing to the development of the new plan. A first draft of the report was available in July. In the coming year, CHISU will help the government develop and disseminate its new HIS strategic plan.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU provided central-level support on the deployment of DHIS2, and trained facility and district staff on data collection tools that were customized in DHIS2. CHISU conducted the ICT infrastructure assessment in Zinder and Maradi to enable routine transmission of DHIS2 data. The final report includes recommendations across levels, including equipment (e.g., ICT and solar panel kits) that CHISU plans to support in the FY23 work plan.

Deliverables	Deadline	Status
NR-002		
1.1.1 to 1.1.4 Brief of support to the new HIS Strategic Plan	FY22 Q4	Delayed start
1.1.5 Monitoring plan for new HIS Strategic Plan	FY22 Q4	Delayed start
1.1.5 Revised national indicator set	FY22 Q4	Delayed start
1.1.5 Quarterly technical working group meetings	FY22 Q4	In progress
1.2.1 HIS assessment report	FY22 Q1	Delayed completion
1.2.2 Mentorship Plan	FY22 Q1	Delayed start
2.1.1 Recommendations brief	FY22 Q3	Canceled
2.1.2 Quarterly Monitoring Report	FY22 Q3	Canceled
2.1.3 ICT infrastructure assessment report	FY22 Q1	Completed
2.1.4 Asset disposal approval	FY22 Q3	Delayed completion
3.1.1 DQR report	FY22 Q2	Completed
3.1.2 Data quality assurance plan and monitoring report	FY22 Q3	Delayed start
3.1.3 Training report	FY22 Q3	Delayed start

Sub-Activity 3: Improved data analysis and use

CHISU conducted data analyses focused on the few dimensions of data quality (completeness of reports and items, timeliness) in Zinder and Maradi. By sharing the findings from this analysis with stakeholders, CHISU saw some improvement in data quality. The analysis framework was transmitted to the DS staff, who use it for the other regional health directorates. CHISU Niger also supported the DS in the development of the DQR user's manual.

Challenges and solutions:

- The main challenge for DS is the lack of qualified human resources. CHISU continues to advocate with the MOH for the assignment of qualified HR.
- In Niger, it is common to organize workshops outside Niamey to convene and ensure staff support and participation in activities such as document production. However, CHISU's budget in FY22 could not accommodate this practice.
- Coordinating with DS and MOH staff to develop key documents is a challenge. We are meeting monthly with the DS to improve coordination.

Plans for next quarter:

- Organize the validation workshop for SOCI and HIS strategic plan assessment.
- Finalize HR recruitment for FY22.
- Train HIS staff at regional and District level and conduct DQR.
- Develop HIS strategic plan.

SB-002 - Strengthening HIS Governance and Data Use in Serbia

Sub-Activity 1: Strengthened governance and enabling environment of HIS in Serbia

The eHealth steering committee finalized and adopted the eHealth Strategy and Action Plan in October and a public hearing was held on November 5. The documents were publicly available for three weeks for review and comments. They were published on the Ministry of Health and Office for IT and eGovernment websites, and presented at a live web event led by the digital health advisor at the Government of the Republic of Serbia Office of the Prime Minister and at which comments were collected and implemented into the strategy. The government adopted the eHealth Strategy 2022-2026 on February 10. The related draft action plan required coordinated work on budget preparation and included the Institute of Public Health (IPH) Batut, MOH, Republic Fund of Health Insurance, and the Office for IT and eGovernment. The government adopted the Action Plan 2022-2023 on May 5. This document created a road map that Serbia's health care system will follow for the next two years, and which defines activities in the further digitization of the health system, activity holders (institutions), timeline, and budget by which this all will be achieved.

In order to support the implementation of the eHealth Strategy, CHISU engaged with the National Alliance for Local Economic Development (NALED) to develop the SOPs and mechanism for the eHealth Steering Committee to track the implementation of the activities in the Action Plan.

To improve accessibility of health data by the citizenry, the prime minister and minister of health led a promotion of the eHealth portal for citizens (which provides the public with access to their personal health records through web and mobile applications) on December 29. CHISU supported the production of physical material, including instructions on how to access web applications, and distributed these to all primary health care facilities.

Sub-activity 2: Increased availability and interoperability of quality health data and information systems

Serbia has prioritized the expansion of electronic immunization records in the eHealth Action Plan 2022-2023. The Ministry of Health has budgeted for this activity in 2023 and there are multiple models that have been deployed at a regional level that are being considered for scale up. CHISU supported the design and development of a landscape assessment that will review the models in place and provide key considerations to the MOH to determine the optimal model for national roll out.

Sub-Activity 3: Improved data analysis and use

CHISU continued to work with the MOH, prime minister's office, IPH Batut, various NGOs, AI Institute, the gender coordination body, UNICEF and other EU agencies, academia, and other relevant stakeholders to develop a data use needs assessment. CHISU organized a workshop in Belgrade June 13-15 to collect feedback from stakeholders on identified gaps in data use and finalize the data use needs assessment. The data use needs assessment supported the development of a road map for a sustainable approach for strengthening data driven decision making in Serbia.

One of the key areas identified in the Action Plan was to improve the analytics capability at the IPH Batut and CHISU has begun the recruitment process for consultants to provide support in the areas of data visualization using the Power BI platform. Additionally, CHISU seconded staff to IPH Batut to support the development of data management SOPs for all levels of the IPH network institutions.

In order to support the use of advanced analytics and in line with the government's Artificial Intelligence Strategy, CHISU developed a data readiness report, which serves to provide the technical and policy requirements needed for the deployment of AI solutions in the health system. To demonstrate the potential of using AI with routinely collected health data, a proof of concept use case focused on how AI can be used to predict bed occupancy and allocation across organizational units was developed to demonstrate how a model could perform using historical data. The output was assessed based on performance against actual bed occupancy and showed a reduction in bed misallocation by over 60%. Based on priorities from the Prime Minister's Office and the National Health Insurance Fund, CHISU was subsequently asked to focus on a different use case (waiting list optimization for scheduled imaging diagnostics services, specifically CT and MRI), which is considered higher priority to demonstrate the impact of AI in data use in government decision making and began work on this which will continue into the next year.

Deliverables	Deadline	Status
SB-002		
1.1.1 Action Plan submitted for adoption to Government	FY23 Q2	Completed
1.1.2 Quarterly report	FY23 Q2	In progress
1.1.2 Standard Operating Procedures	FY23 Q2	In progress
1.1.2 Final annual report	FY23 Q2	Not started
1.1.2 Transition plan	FY23 Q2	Not started
1.2.2 SOCI Mentorship plan	FY22 Q4	Delayed completion
2.1.1 Assessment of current state	FY22 Q4	Delayed completion
2.1.2 Implementation plan	FY23 Q2	Delayed start
2.1.2 Scale up to at least 2 additional municipalities	FY23 Q2	Delayed start
3.1.1 Guidance document	FY22 Q3	Completed
3.1.2 Training reports	FY23 Q2	In progress
3.1.2 Analyses developed	FY23 Q2	In progress
3.1.3 Data management SOPs and Standards documents	FY23 Q2	In progress
3.3.1 Assessment report on advanced analytics readiness	FY22 Q4	Completed
3.3.1 AI driven prototype	FY22 Q4	Completed
3.3.2 Deployment ready AI prototype	FY23 Q2	In progress
3.3.2 AI integration plan	FY23 Q2	Delayed start

Challenges and solutions:

- Elections and delayed formation of the new government led to delays in key decisions in the implementation of the Action Plan. CHISU will continue to work with stakeholders in the new government as they are named and support bringing them up to speed, as needed.

Plans for next quarter:

- Complete recruitment of the remaining positions for IPH Batut.
- Assess the state of digitization of immunization records.
- Continue to monitor Action Plan implementation with NALED.

ESC-001 - COVID-19 support in Eastern and Southern Caribbean Countries

The initially approved start date for this activity was February 1, but the majority of activities are on hold due to the delayed issuance of press releases from the Mission required to start work in the countries.

Sub-Activity 3: Improved data analysis and use

The first press release covering the Bahamas, Guyana, Suriname, and Trinidad and Tobago came out on March 24. CHISU held an initial meeting with the MOH in Dominica on March 31 to identify needs and begin drafting the consultant scope of work. CHISU submitted a revised work plan on March 28 to account for additional scope and funds. The start date for this activity changed to April 1 to reflect the delays.

CHISU held discussions with the MOH in Antigua and Barbuda, Dominica, and St. Lucia to identify HMIS areas of greatest need, and drafted distinct job descriptions for each country's support, which the respective MOH reviewed and approved. The job descriptions have been advertised on CHISU website and social media handles and networks such as RHINO. CHISU contracted a consultant approved by the MOH of Antigua and Barbuda in September. The consultant will be supervised by the deputy chief medical officer, with technical and operational support provided remotely by CHISU.

Deliverables	Deadline	Status
ESC-001		
3.1.2 Recommendations brief for data collection and aggregation of COVID-19 vaccination data	FY23 Q1	Delayed start
3.3.2 Recommendations brief for data visualization and interpretation tools and approaches	FY23 Q1	Not started

Challenges and solutions:

- Delayed issuance of press releases has in turn delayed CHISU's ability to meet with ministries and officially begin recruitment for in-country consultants. The revised work plan start date was pushed back to April 1 to account for this delay.
- Implementation was delayed due to the pace of engagement with the MOHs implicated in the work plan.
- The primary challenge thus far has been the identification of suitable candidates for the local support consultancies. Solutions were wider dissemination through PAHO and CARICOM, as well as renewed local advertisement and referral of candidates by the ministries.

Plans for next quarter:

- Place consultants in Dominica and St. Lucia
- Commence work on tasks and deliverables in Antigua and Barbuda

ESC-002 - COVID-19 support in Eastern and Southern Caribbean Countries

USAID replaced Barbados with St. Kitts and Nevis on this work plan, whose final list of countries are Bahamas, St. Kitts and Nevis, Guyana, and Suriname. Initial discussions have been held with the MOHs in St. Kitts and Nevis, Suriname, and Guyana. CHISU completed six COVID-19 monthly newsletters that were distributed to the White House, ESC embassies, and other USG stakeholders. CHISU also began work with the MOH in St. Kitts and Nevis to create a policy brief and potential "perspectives" journal article illustrating the country's COVID-19 vaccination program.

CHISU prepared and disseminated job descriptions for local consultants capable of strengthening HIS for COVID-19 vaccination capacity in Saint Kitts and Nevis, Suriname, and Guyana; a Bahamas job description is awaiting MOH approval. CHISU met with the Guyana MOH and began recruiting a consultant who will cover HMIS and supply chain tasks and fulfill the requirements of the pending CHISU COVID-004 work plan.

In September, CHISU traveled to Suriname and Guyana and met with government stakeholders, funders, and implementing partners. Outputs from these meetings will inform any additional support to the countries.

Deliverables	Deadline	Status
ESC-002		
3.1.2 Recommendations brief for data collection and aggregation of COVID-19 vaccination data	FY23 Q2	Delayed start
3.2.3 Country Fact sheets, quarterly newsletters, success stories	FY23 Q2	In progress
3.3.2 Recommendations brief for data visualization and interpretation tools and approaches	FY23 Q2	Not started

Challenges and solutions:

- Implementation has been delayed due to the pace of engagement with the MOHs implicated in the work plan.
- The primary challenge thus far has been the identification of suitable candidates for the local support consultancies. Solutions were wider dissemination through PAHO and CARICOM, as well as renewed local advertisement and referral of candidates by the ministries.

Plans for next quarter:

- Place consultants in all four work plan countries.
- Publish additional COVID-19 monthly newsletters.
- Publish the Saint Kitts and Nevis policy brief.
- Establish additional support activities for Suriname and Guyana.

ESC-003 - COVID-19 vaccine supply chain support in Eastern and Southern Caribbean Countries

CHISU held preliminary discussions with MOHs in St. Vincent and the Grenadines, Dominica, St. Lucia, and Guyana to determine CHISU's COVID-19 vaccine supply chain support and the required consultant profiles. CHISU began developing job descriptions for St. Vincent and the Grenadines, Dominica, and Guyana, as well as proposals for additional support through procurement of IT equipment and funding staff capacity building. Desired plans from the ministry conversations will be integrated into the final work plan.

Based on initial discussions with the MOHs in Dominica and St. Lucia, CHISU wrote and submitted a work plan to USAID in August that was approved in September. CHISU worked with both countries to draft job descriptions for the supporting consultants; the job description for Dominica was approved and advertised.

Deliverables	Deadline	Status
ESC-003		
2.1.1 Recommendations brief	FY23 Q3	Not started
3.1 Recommendations brief	FY23 Q1	Not started
3.2.1 Data quality review meetings	FY23 Q3	Not started
3.2.2 2 Two workshops/country	FY23 Q3	Not started
3.3.1 Recommendations brief	FY23 Q3	Not started

Challenges and solutions:

- Delays in responsiveness from the ministries have pushed back the recruitment of the consultants; CHISU and USAID have made continuous efforts to get them to respond.
- There is a lack of qualified local applicants for the positions posted so CHISU has cast a wider net to advertise at local and regional universities.

Plans for next quarter:

- Recruit and place consultants in Dominica and St. Lucia.

COVID-001 - COVID-19 support in Eastern and Southern Caribbean Region

CHISU held initial conversations to inform the development of the COVID-001 work plan. CHISU conducted preliminary discussions with the Mission to inform the regional learning event, which consultants across all CHISU ESC work plans will support in late 2022 or early-mid 2023. St. Kitts and Nevis moved to the ESC-002 work plan and will receive the support of a full-time consultant.

In Q4, CHISU traveled to St. Vincent and the Grenadines and Trinidad and Tobago (as well as Guyana and Suriname, funded under ESC-002) to understand country HMIS needs for COVID-19 data management. Outputs from the meetings will be acted on in Q1 of FY23. Due to changes in other work plans, CHISU has begun conversations to provide HMIS consultants for Saint Kitts and Nevis and Trinidad and Tobago. Given the increase in support to these countries, the planned regional data briefing documents for these countries may be integrated into the consultants' scopes of work; therefore, these deliverables are on pause.

Deliverables	Deadline	Status
COVID-001		
3.2.2 Regional data briefing document	FY23 Q1	Delayed start

Challenges and solutions:

- Implementation was delayed due to the pace of engagement with the MOHs implicated in the work plan.

Plans for next quarter:

- Revisit this work plan with the Mission to determine the best plan of action for data support moving forward.
- Continue planning the regional learning event.
- Follow up on action items from regional travel.

COVID-004 - COVID-19 supply chain support in ESC

As noted in ESC-003, CHISU held preliminary discussions with MOHs in St. Vincent and the Grenadines, Dominica, St. Lucia, and Guyana to determine CHISU's COVID-19 vaccine supply chain support. CHISU began developing job descriptions for St. Vincent and the Grenadines, Dominica, and Guyana, and proposals for additional support through procurement of IT equipment and funding for staff capacity building. Desired plans from the Ministry conversations will be integrated into the final work plan.

CHISU wrote and submitted a work plan to USAID in August based on initial discussions with the MOH in St. Vincent and the Grenadines and Guyana in Q3 and Q4. CHISU worked with both countries to draft job descriptions for the supporting consultants (pending in the work plan); in Q4, job descriptions for both countries were approved and advertised. The Guyana consultant will work on supply chain and HMIS tasks outlined in the ESC-002 work plan. Additionally, the CHISU team traveled to St. Vincent and the Grenadines and Guyana to meet with the MOH to understand each country's needs for COVID-19 supply chain vaccine data management.

Deliverables	Deadline	Status
COVID-004		
Proposed Year 2 work plan	N/A	Completed

Challenges and solutions:

- Delays in responsiveness from the ministries have pushed back the recruitment of the consultants; CHISU and USAID have made efforts to get them to respond.
- There is a lack of qualified local applicants for the positions posted so CHISU has cast a wider net to advertise at local and regional universities.

Plans for next quarter:

- Revise work plan and resubmit following outputs from CHISU regional travel in September.
- Recruit and place consultants in St. Vincent and the Grenadines and Guyana.
- Implement additional activities in St. Vincent and the Grenadines and Guyana pending outcomes from in-country meetings

MENA-001 - Support to GHSA information systems in MENA

Due to delays in connecting with key stakeholders in several countries, the end date was extended to June. With the submission of all deliverables complete, this activity is officially closed.

Sub-Activity 1: Strengthened governance and enabling environment of HIS

CHISU completed all 11 landscape assessments that had been planned. Across Egypt, Jordan, Libya, and West Bank/Gaza countries, the team made over 30 contacts and held 12 formal interviews with 18 people (in addition to informal introductory calls). Groups interviewed included USAID Missions, MOHs, USG agencies, international funders, NGOs, and private sector partners. CHISU submitted final reports for these four countries on December 31. With the addition of ten contacts and five formal interviews with seven people (in addition to informal introductory calls) from the groups listed above, CHISU submitted final reports for Tunisia, Syria, and Libya on February 1. In addition to other stakeholder meetings, WHO Eastern Mediterranean Regional Office (EMRO) facilitated meetings for CHISU with the Ministers of Health in Lebanon and Morocco. With inputs from these meetings, CHISU submitted the final country briefs (Algeria, Lebanon, Iraq, Morocco) on June 30.

CHISU presented key findings from the landscape assessment to Mission representatives from the USAID Middle East Bureau on June 30; an additional outbrief was held on June 30 with the MENA GHSA Interagency working group. Completion of the final regional recommendations and online SIGNAL module briefs were delayed so that outputs from the regional meeting could be included. CHISU summarized the content from the 11 country HIS landscape briefs into a regional brief and submitted it to USAID. The brief is available as a slide deck and report, so the material may be delivered to Missions and stakeholders in a way that best suits their needs for learning and decision making. The Middle East Bureau will determine any further dissemination of the final deliverables.

Deliverables	Deadline	Status
MENA-001		
1.1 Conduct a landscape analysis in Egypt	FY21 Q3	Completed
1.2 Conduct a landscape analysis in Jordan	FY21 Q3	Completed
1.3 Conduct a landscape analysis in Yemen	FY21 Q3	Completed
1.4 Conduct a landscape analysis in Morocco	FY21 Q3	Completed
1.5 Conduct a landscape analysis in Tunisia	FY21 Q4	Completed
1.6 Conduct a landscape analysis in Libya	FY21 Q4	Completed
1.7 Conduct a landscape analysis in Iraq	FY21 Q4	Completed
1.8 Conduct a landscape analysis in Syria	FY22 Q1	Completed
1.9 Conduct a landscape analysis in West Bank/Gaza	FY22 Q1	Completed
1.10 Conduct a landscape analysis in Lebanon	FY22 Q2	Completed
1.11 Conduct a landscape analysis in Algeria	FY22 Q2	Completed
1.1.12 Synthesize information into regional brief	FY22 Q2	Completed
1.1.13 Quarterly update	FY22 Q2	Completed
2.1 Develop recommendations brief	FY21 Q4	Completed

Challenges and solutions:

- CHISU encountered political challenges in reaching MOHs and government contacts across the region. There was skepticism from MOHs to provide meaningful data, and conflicting data/information continues to be a challenge. Many contacts do not want to be identified in the final reports. CHISU's solution was to re-engage the primary contact at WHO EMRO and plan an additional discussion with its HIS lead to pinpoint next steps.
- Deliverables were delayed due to challenges getting contacting stakeholders in Lebanon, Iraq, and Morocco. USAID extended the work plan and deliverable due dates to Q3, and WHO EMRO was able to help CHISU engage with MOHs in Lebanon and Morocco.

Plans for next quarter:

- None. This activity is closed.

MCH-001 - RMNCAH Facility Data Use Guidelines

CHISU's role in this activity is to assist with the revision of the data quality annex to the upcoming WHO RMNCAH Facility Data Use Guidelines, (which will be included in updated guidelines), identify countries where the updated guidelines can be tested, and implement the testing exercise focusing on the data quality annex. The projected timeline for completion of the guidelines with the annex integrated is the end of 2022.

CHISU is helping integrate annex content into the overall guidelines. Further discussions with WHO are needed to determine how and when the guidelines will be tested in countries.

The supplemental materials to the data quality annex and overall guidance document, such as the DHIS2 metadata package, is pending further conversations with WHO and USAID based on their preferred next steps toward completion.

Deliverables	Deadline	Status
MCH-001		
Data quality annex	FY22 Q4	Delayed completion
DHIS2 metadata package	FY22 Q4	Delayed start

Challenges and solutions: None.

Plans for next quarter: To be determined.

OHS-001 - Digitize and Deploy HPHC Tool

After launching the HPHC web-based tool last year, CHISU continued to maintain and enhance the website, which experienced a 15 percent increase in traffic from Q1 to Q4 of this year. CHISU strengthened the quality of the code with additional automated tests. The team also prepared for and presented to various stakeholders interested in implementing the tool in their country.

CHISU and USAID co-presented on the HPHC tool at the Global Digital Health Forum in December 2021 and submitted abstracts to the 2022 Health Systems Research and Global Digital Development Forum conferences.

Sub-Activity 2: Increased availability and interoperability of quality health data and information systems

CHISU maintained the HPHC website, including making small changes such as adding code to display a "n=[value]" to the subtitle of charts to make it clear to users how many responses are represented in a particular chart and adding spam-prevention functionality. Other site enhancements included enabling the selected filters to persist across all the dashboards so that users do not always need to reset the filters as they navigate various dashboards. CHISU also translated the website into Spanish.

CHISU launched an implementation in the Philippines and supported the USAID Mission in its use. Additionally, CHISU discussed equity considerations with the activity lead and made recommendations to facilitate gender analysis, but the decision was made to leave the site unchanged for the moment. CHISU also developed an automated registration notification system to support more efficient communications on new registrants to the site. The team built a feature allowing users to visualize the data by subnational level; it will be deployed in the next quarter.

Deliverables	Deadline	Status
OHS-001		
Online system maintained	FY23 Q3	In progress
Semi-annual report on system usage	FY23 Q3	Not started

Challenges and solutions:

- Difficulties with sub-national analysis, due to lack of standardization in naming of sub-national locations, and improvements to the data from the Philippines implementation.

Plans for next quarter:

- Focus on resolving the sub-national data issue and make adjustments that may lower barriers to implementation, such as solutions for off-line data entry and delayed publishing of results.

OHS-002 - Digital Supportive Supervision

The work plan for this activity was approved on October 21. CHISU conducted a landscape analysis of digital supportive supervision frameworks, tools, and programs, including desk review, consultations with key stakeholders, and a survey. CHISU developed a new graphic to display the three core pieces of information: 1) users/personas; 2) core components of the supportive supervision process; 3) digitization entry points. CHISU presented the first draft of the graphic at the DHIS2 Annual Conference in Oslo on June 21,

where it was met with significant interest from various stakeholders, including USAID Ghana, West African Health Organization (WAHO), and the Ethiopian MOH. CHISU also began working on drafting the accompanying textual guidance document. After reviewing and editing it internally, CHISU began to gather feedback from USAID in late September. We also began to lay the groundwork for upcoming country work with the CHISU Malawi team. CHISU continued to look for opportunities to share the framework and information about our approach more broadly by submitting abstracts to the Global Digital Health Forum, the DHIS2 Symposium, and the IMNCH Conference in 2023. The abstract for the DHIS2 Symposium was accepted, and will be presented in October 2022.

Sub-Activity 3: Improved data analysis and use

CHISU developed data collection instruments through consultative meetings with HRH2030 and MOMENTUM Knowledge Accelerator, as well as survey respondents from the Global Digital Health Network, Asia eHealth Information Network, and Central American Health Informatics Network (RECAINSA), who were asked to submit information about their digital supportive supervision interventions. CHISU then conducted 12 consultations with different organizations who have been deeply engaged in development of digital tools for frontline health workers. From each of these consultations, CHISU collected follow-up materials detailing their digital supportive supervision experiences. CHISU also completed the desk review of existing digital repositories, collecting 31 examples of digital supportive supervision implementations.

Following the desk review and consultations, CHISU completed the initial draft of the guiding framework document which will be shared with stakeholders for feedback in the consultative workshops in the next quarter.

Deliverables	Deadline	Status
OHS-002		
Draft guiding framework	FY22 Q4	Completed
Guiding framework	FY23 Q1	In progress
Country specific recommendations	FY23 Q3	Not started
Country specific supportive supervision roadmaps	FY23 Q3	Not started

Challenges and solutions:

- While CHISU initially expected to be able to send out a survey very quickly to the broader digital health community to inform the landscape review, we realized that the language in our initial drafts could cause confusion with some of our audience. The team reviewed the terminology used in repositories like the HRH2030 Landscape on Enhanced Approaches to Supervision to clarify what data points are important for this review, and make sure that the questions in the survey would yield actionable information. This delayed our survey, but will ensure that we receive better and more relevant information moving forward.

Plans for next quarter:

- CHISU will edit and improve the draft before distributing it broadly for consultation and feedback. CHISU plans a global virtual consultation in early November, at which stakeholders who participated in our consultations, USAID, and other interested parties can provide comments and feedback.
- CHISU will work with two country teams to plan in-country validation workshops and further work with the framework in 2023. CHISU will select a second country (in addition to Malawi), work with the country teams to develop plans, get Mission concurrence, and begin country-specific preparations including desk review, workshop planning, and logistics.

OHS-003 - GHSA Surveillance Data Analysis and Use

The work plan for this activity was approved on October 21. The protocol for this activity was developed, reviewed, and finalized. USAID reviewed the completed protocol, provided feedback, and approved the revised version on May 17.

USAID initially selected Ghana, Kenya, Madagascar, Zambia, and Burkina Faso for data collection. Following a meeting with the USAID GHB team and CHISU, however, it raised concerns about Madagascar and Zambia being included in the activity because they did not have sufficient GHSA investments in-country nor a GHSA advisor. Zambia was excluded from the activity while Madagascar remained under discussion. The list of 20 countries that met the inclusion criteria (from which the initial five countries were selected)

was subsequently reviewed and Uganda was proposed as a replacement for Zambia. In Ghana, Kenya, and Burkina Faso, local consultants have been engaged and introductory meetings have been scheduled or held with the country missions. In Ghana and Kenya, engagements with MOH and allied agencies have begun and potential respondents and relevant documents are being identified.

Deliverables	Deadline	Status
OHS-004		
Categorized list of data sources	FY22 Q4	Delayed completion
Five case studies	FY23 Q2	Not started
Virtual consultation	FY23 Q3	Not started
Best practices brief	FY23 Q3	Not started

Challenges and solutions:

- The activity experienced delays in the country selection process. To recover some of this time, the team condensed data collection into a shorter duration. Because progress has yet to be made in Madagascar and a final country has yet to be identified and approved, the completion of the five case studies and the virtual consultation may be delayed. Timelines may need to be extended.

Plans for next quarter:

- Data collection will begin and be completed. The approved protocol/interview guide will be the basis for data collection across all countries. Bi-weekly calls will be held with the local consultants for updates to ensure progress and to discuss and find solutions to challenges arising from the work in the countries.

OHS-004 - Country HPHC Implementation

The work plan for this activity was approved on June 30. CHISU held numerous meetings with the USAID OHS activity lead on opportunities to implement the tool in Peru, Guinea, Nigeria, and Ethiopia. After an initial discussion, Peru was ruled out and Guinea is pending HSS Accelerator's final decision. The discussion with Nigeria involved the MOH and USAID mission and headquarters, and CHISU is waiting for a final decision before moving forward. The meeting with Nigeria raised concerns about data ownership, the possibility of completing the form offline, and the applicability of different sections of questionnaire (not all of them for a given organization). CHISU is exploring technical feasibility on how data may be held private until implementation is final.

The Ethiopia USAID Mission has agreed to move forward with implementation, and CHISU is recruiting a local consultant. Following recruitment, CHISU will make a selection as appropriate and prepare a timeline for implementation for the USAID team lead. Meanwhile, CHISU has developed a scope of work and a guide for the consultant, which USAID is reviewing. As soon as a consultant is selected, USAID will speak with the Mission to launch the process on the ground with the CHISU assistance.

Deliverables	Deadline	Status
OHS-004		
Countries and scope identified	FY22 Q4	Delayed completion
HPHC assessment completed online	FY23 Q3	Delayed start
Result dissemination meetings	FY23 Q3	Delayed start
Four page report	FY23 Q3	Not started

Challenges and solutions:

- Implementation in Nigeria depends on USAID Mission final decisions. Country concerns are almost completely resolved and the final decision is pending the return of the high-level MOH staff, who were attending the UN assembly. Meetings have been organized with the USAID and MOH to align views and respond to questions.

Plans for next quarter:

- Implement HPHC in Ethiopia and Nigeria.
- Explore additional country candidates.

OHS-005 - Catalytic implementation of the WHO global RHIS strategy

The work plan for this activity was approved on June 30. CHISU spoke with the WHO Division of Data, Analytics, and Delivery for Impact team about points of collaboration where CHISU could complement WHO's planned efforts in the dissemination of the RHIS Strategy. The latest version of the global RHIS strategy is being circulated for a last round of input before its finalization.

CHISU provided comments and edits as appropriate. The RHIS strategy's objectives are well aligned with SOCI domains.

CHISU began reviewing the SCORE's survey reports on HDC focus countries to apply the rest of our set criteria (e.g., language, prior assessment results and USAID presence in-country) to identify potential countries for case study to implement SOCI assessments. The SOCI case studies will inform key interventions to address any identified weaknesses.

Deliverables	Deadline	Status
OHS-005		
Countries selected per agreed criteria	FY22 Q4	Delayed completion
Reports on SOCI assessment in 2 countries	FY23 Q2	Not started
RHIS expert panelists included in Communications (XB-006) webinars	FY23 Q3	Delayed start

Challenges and solutions:

- Incorporation of the global RHIS strategy in CHISU webinars is delayed as we await final approval of the strategy.

Plans for next quarter:

- Finalize review of and identify two HDC focus countries.
- Start supporting SOCI implementation in a selected country.

PMI-001 - Assessing Community Based Information System guidance in PMI priority countries

The work plan for this activity was approved on September 30, 2021. CHISU identified search terms and parameters for identifying CBIS guidance in literature and online. The team determined where and how these guidelines are used in different settings. CHISU found 20 documents that met the criteria and developed a matrix to categorize their components. The categories are information systems development; governance; data analysis; data use and quality; standards and interoperability; sharing and using; data security; and privacy and confidentiality.

CHISU sent a questionnaire to CHISU country leads in Mali, Burkina Faso, Ghana, Malawi, and Niger asking for information on any CBIS guidance documents that may be in use in their countries. The Mali team sent three, including training manuals and HMIS SOPs. Kenya sent guidance on best practices at community level, including data collection and surveillance information and manuals including community health volunteer handbooks with CBIS modules.

CHISU also made contact with Roll Back Malaria's Partnership to End Malaria's Surveillance, Monitoring and Evaluation Reference Group Community Health Worker Task Force, which is conducting a landscape of partner programs that will inform this activity.

USAID requested a scoping activity to help identify countries with experience using CBIS guidance documents to facilitate the country selection process. CHISU sent 12 countries Excel-based questionnaires; seven responded. CHISU sent a summary of the findings to USAID, which selected Burkina Faso, Niger, and Cote d'Ivoire to conduct further exploration of the use of the CBIS guidance. However, CHISU asked that Kenya replace Niger to include an English-speaking East African country.

After initiating discussions with the countries, the Burkina Faso Mission declined participation in the activity. Niger was proposed as a replacement and subsequently approved by USAID, and Mission concurrence was received for all three countries. Consultants are being engaged in these countries to conduct data collection.

Deliverables	Deadline	Status
PMI-001		
CBIS guidance list	FY22 Q2	Completed
Settings brief	FY22 Q2	Canceled
Selected countries	FY22 Q2	Completed
Protocol for documentation process	FY23 Q3	Not started
Final report and slides	FY23 Q3	Not started

Challenges and solutions:

- It was difficult to determine the use of the CBIS documents from the desk review. We overestimated how much we could find in the web search and assumed we would be able to develop a settings brief. We proposed that the settings brief be combined with the final report.

- USAID requested a 'light touch' exercise to assist with country selection. This included emailing PMI advisors in missions to get information on the use of the CBIS guidance identified. Responses were slow to arrive, and USAID asked CHISU to proceed with those received so far.

Plans for next quarter:

- Onboard consultants in the three countries, including meetings with the various missions.
- Identify all relevant documents.
- Develop the documentation request protocol.
- Develop interview guides and data collection instruments.
- Identify respondents.
- Work with PMI advisors or CHISU country teams to get access to relevant malaria data.

XB-008 - Global HIS Management and Leadership

CHISU continued to participate in working groups with the HDC Community, including the RHIS and DH&I broader working group and the AI/ML small working group. As co-lead of the Gender/Diversity, Equity, and Inclusion (DEI) small working group, CHISU supported onboarding of new co-leads and developed 2022 activities. CHISU is the co-lead of the newly formed Country Engagement small working group, which is tasked with strengthening the connection between country needs and the global DH&I community. We presented our approach to integrating gender into work plans at the June 1 Gender/DEI meeting, and continued to co-develop the plans to engage countries in presentations and develop invitations and schedule for MOHs to engage with the small working groups. For the Community working group, we provided key technical inputs into the development of the CHIS training materials and guidance package that UNICEF is developing. CHISU has taken on the role of the lead of the Global Health Initiatives constituency within the HDC and attended the HDC Stakeholders Reference Group meeting September 28–29, participating in key discussions about country engagement, use of HDC country missions, and the RHIS investment case. Within the RHIS working group, CHISU provided key inputs into the development of the WHO RHIS Strategy, which is set to be shared in 2023.

CHISU met with regional groups such as the Central American Health Informatics Network, the Asia eHealth Information network, and the Digital Public Goods Alliance to identify modalities for providing global goods feedback and opportunities for collaboration. CHISU met with WHO Africa Regional Office (AFRO) and identified potential areas of collaboration including in HDC priority countries, and consultations on regional maturity assessments, civil registration, and vital statistics.

The team attended the DHIS2 Annual Conference in Oslo, Norway June 20–23, and engaged in discussions about global goods sustainability, how local innovations can be maintained in the DHIS2 App store, and how FHIR standards can work with DHIS2 and use cases of AI/ML with DHIS2 data. CHISU sent a collaboration plan with AFRO, continued contacting Africa CDC for collaborations, and met with Inter-American Development Bank and World Bank to discuss and identify avenues for alignment of activities in current and future countries where CHISU works. CHISU is serving on the steering committee for Digital Health Ecosystem EOI work led by Digital Square, and supporting the design and scoring of the over 300 applications received. CHISU also continued discussions with WHO to align activities with regional WHO bodies, and initiated discussions with UNICEF, PAHO, GIZ, and others on establishing a mechanism to align and share completed and planned HIS and digital health assessments.

The team also developed and distributed a document to obtain feedback on global goods from CHISU countries. The team collected feedback and continued discussions with the Digital Public Goods Alliance to determine how to represent CHISU's global goods feedback activities on the 2022/2023 Roadmap.

Deliverables	Deadline	Status
XB-008		
CHISU representation at selected meetings	FY23 Q3	In progress
Meeting report	FY23 Q3	In progress

Challenges and solutions:

- After an initial meeting with AFRO, the follow-up was delayed, but CHISU worked with the AOR team to increase engagement with AFRO, which led to a meeting in Q2.

Plans for next quarter:

- Continue leadership roles with HDC and its various working groups.

- Continue establishing lines of communication with regional WHO bodies to align work plans.
- Complete alignment of global goods feedback activity with the Digital Public Good Alliance's annual roadmap.

XB-009 - Digital tool to measure and store country HIS progression

The work plan for this activity was approved on October 21. After an early version of the digital SOCI tool was developed in DHIS2, the team conducted an internal demonstration and generated a list of suggestions for improvement. These included:

- Upgrading DHIS2 to remove security risks.
- Adding a box to capture three types of assessment results: self, average, and consensus (renaming the previous 'consensus' box 'average' and labeling the new box 'consensus').
- Adding a more obvious 'Hint' functionality to show the scale of measurement for SOCI subcomponents, and enabling this to remain in view if selected to ensure assessors have easy access during the scoring process. This replaced a previous question mark that users reported was not self-explanatory.
- Adding a priority column to guide action plan development.
- Creating analysis dashboards (visualizations) that allow drill down of domain scores while comparing average, self, and consensus.

Numerous meetings were held for feedback and reviews. The gender analysis table, consensus, self-assessment, and average result visualization were designed and implemented using JavaScript framework. Developers tested the DHIS2 app internally, and set up DHIS2 test servers. CHISU developed a guide for user-acceptance testing, a testing template, and improved a testing tool to make it more user-friendly. A team of secondary internal testers was identified and external testing for quality assurance will be constituted for the next phase of testing. Two guides (users and administrators) for the user acceptance tool were developed to facilitate the testing process and final deployment.

Deliverables	Deadline	Status
XB-009		
Final web-based SOCI assessment tool	FY22 Q4	Delayed completion
User manual	FY22 Q4	Delayed start
Facilitator manual	FY22 Q4	Delayed start
Webinar recording and link	FY23 Q1	Not started
Video guide	FY23 Q1	Not started
Maintenance report	FY23 Q3	Not started
Updates and new development report	FY23 Q3	Not started
Summary report	FY23 Q3	Not started

Challenges and solutions:

- Development of ability to drill down from domains to subcomponents took more effort than originally expected, additional technical resources have been brought onto the activity to help get back on schedule.

Plans for next quarter:

- Finalize the guide for the user-acceptance testing.
- Conduct the user-acceptance testing:
- Organize a workshop to orient key internal and external users to the digital tool and the user-acceptance testing guidance document developed during the planning phase.
- Seek user feedback on key agreed-upon processes outlined in the testing guidance tool.
- Collect feedback and incorporate suggestions to make final adjustments to the digital SOCI tool.
- Develop the SOCI tool guides (facilitators and users)

XB-010 - Artificial Intelligence and Machine Learning knowledge hub

CHISU continued to refine the design of the landing page, including by adding News, Themes, and Statistics tabs for users that illustrate content and functionality of the space. CHISU further developed a mobile view and began work on an animated visualization of the AI / ML process (from data to output) that will be included on the landing page. Work continued to develop the ML newsfeed, which will scrape relevant content from online sources (including articles, updates, and publications) made accessible to users as they navigate the space.

We held a series of meetings with interested stakeholders from PEPFAR and beyond. We met with the AI learning group convened by USAID Center for Innovation and Impact, I-DAIR, and the GEMNet community. These conversations helped us shape the AI Hub mission statement.

However, a review of implementation to date and an assessment of next steps found that the prototype could not be taken to production within available funds and time frame remaining in the project. CHISU discussed these findings with USAID and we jointly agreed that the activity will close and remaining funds be dedicated to another activity. This activity is now closed.

Deliverables	Deadline	Status
XB-010		
Mission statement	FY22 Q4	Completed
Design document	FY22 Q4	Completed
Example learning pathway	FY22 Q4	Completed
Hub landing page	FY22 Q4	Completed
AI newsfeed & hub launched	FY22 Q4	Delayed completion

Challenges and solutions:

- The level of engineering required to develop the underlying algorithms needed for the site and the AI newsfeed has been higher than expected. We plan to continue to closely monitor and identify alternative paths for development, as appropriate.

Plans for next quarter:

- None. This activity is closed.

PMI-002 - PMI portfolio startup

This activity was approved on August 5, with a start date of September 1. On September 29, CHISU made a presentation of its technical scope and details on transition timelines to PMI resident advisors in USAID Missions. Seventy people were invited and more than 35 participated in the call.

Deliverables	Deadline	Status
PMI-002		
PowerPoint Presentations and project fact sheets	FY23 Q2	In progress
Meetings with Civis Analytics and University of Oslo about automated bulletins and the development of a preliminary plan or next steps for the development of an application	FY23 Q2	Not started
Participation in selected malaria focused global meetings and events	FY23 Q2	Not started

Challenges and solutions: None.

Plans for next quarter:

- Participate in the malaria Surveillance Monitoring and Evaluation Group meeting in October.
- Agree on the core funded-malaria activities that will be transitioned from PMI Measure Malaria to CHISU.

PMI-003 - Country portfolio transition

This activity was approved on August 5 with a September 1 start date. A job description for a resident advisor in Thailand was developed and sent to the Mission on September 12. There have also been a number of meetings and email exchanges with the DRC Mission, continuing discussions on the transition of the malaria portfolio from PMI Measure Malaria (PMM) to CHISU. Challenges and solutions: None.

Deliverables	Deadline	Status
PMI-003		
Job descriptions, advertisements and selection of Resident Advisors	FY23 Q2	In progress
Country transition plans	FY23 Q2	In progress
Operations transition plan	FY23 Q2	Not started
Meetings with PMI Measure Malaria	FY23 Q2	Not started
Plan for transition of malaria and health information system country profiles and other identified resource materials for the CHISU website	FY23 Q2	Not started

Plans for next quarter:

- Visit DRC to meet in-country stakeholders, interview potential staff, and set up operations (November).
- Implement a DRC asset and inventory transition plan.
- Finalize, post, and identify a resident advisor for Thailand.
- Decide on the transition of malaria and HIS country profiles and other identified resource materials for the CHISU website.

XB-002 - Country Operations Support

A country support officer joined the country support manager and CHISU clarified the role of the Country Support Unit internally through orientations. The unit supported all country and regional portfolios as they implemented activities, including onboarding country staff who joined during the reporting period.

CHISU developed, negotiated, and received approval for scoping statements of work for Mali, Ghana, Haiti, Indonesia, and Malawi. Activity work plans for Burkina Faso, ESC, Madagascar, Malawi, Haiti, Serbia, and Indonesia were submitted to USAID. CHISU initiated discussions on supply chain information systems support with the ESC. CHISU supported start-up conversations for activities in Madagascar, Namibia, Latin America and the Caribbean, Thailand, Kenya, and DRC. This included discussions with Missions and development of initial work plans or statements of work.

Deliverables	Deadline	Status
XB-002		
Statements of work	FY23 Q3	In progress

Challenges and solutions: None.

Plans for next quarter:

- Assist with start up of new countries and activities as they arise.

XB-003 - Monitoring, evaluation, and learning

CHISU developed and submitted the program's first annual report in December, and further analyzed program indicators for the annual review process in October and executive management team retreat in March. The MEL team coordinated the FY22 semi-annual report and FY23 core work plan development process. Revisions to the activity, monitoring, evaluation, and learning plan (AMELP) were incorporated and submitted to USAID in December. Included were an overall copy edit, a newly proposed indicator to capture CHISU key interventions under SO2, and a proposed approach to measuring data demand in the complementary monitoring section.

Ongoing work included monitoring, evaluation, and learning (MEL) orientations for new team members, including a new MEL officer, and maintaining and updating the CHISU MIS. Through in-depth work sessions to evaluate how the system is being used, the MEL team revised the data flow and structure, as well as user access levels. The revised guidance for reporting was implemented for all FY22 Q2-Q4 reports. The MEL team trained CHISU activity leads, managers, and approvers on data entry and analysis in the MIS. This training reinforced the revised data flow and reporting guidance. The MEL team conducted a training for USAID colleagues on MIS access.

CHISU updated the learning action plan for FY22 activities, and the MEL team collaborated with the technical team to develop causal frameworks for all country and regional activities. These will enable causal link monitoring that can be included in a contribution analysis. A format for data-driven pause and reflect sessions was developed and refined with knowledge management (KM) and technical teams and the MEL and the technical teams developed causal frameworks and shared them with Burkina Faso and Indonesia country teams to facilitate data-driven pause and reflect sessions, following KM guidance.

Per USAID guidance in April and May to adjust COVID-19 reporting to use the Development Information System, the MEL team coordinated with USAID/Washington, CHISU activity leads, and Mission counterparts to identify and set up accounts in and add activity-specific indicators into the system. The MEL team aligned internal COVID-19 reporting with other internal reports on the MIS, to accommodate the shift from monthly to quarterly reporting, and oriented staff to the revised reporting process.

CHISU attended the USAID-led COVID-19 CLA meetings hosted by Data.FI with partners Digital Square and M-RITE. The MEL team developed slides on CHISU's proposed approaches to contribute to the USAID COVID-19 vaccination access and delivery initiative learning questions, and began drafting the work plan (expected to be conducted under COVID-007). CHISU developed a synthesis tool, hosted a synthesis day to inform learning on August 30, and provided support before the recruitment process for the measurement and learning specialist was finalized.

Deliverables	Deadline	Status
XB-003		
Quarterly orientation sessions	FY23 Q3	In progress
Functional MIS	FY23 Q3	In progress
Indicator tables in different reports	FY23 Q3	In progress
Country causal frameworks	FY23 Q3	In progress
PPT with findings from selected questions	FY23 Q3	In progress
Revised AMELP or email to AOR stating no revisions are necessary	FY23 Q1	Not started
Semi-annual and Annual reports	FY23 Q3	Not started
Other required reports	FY23 Q3	In progress

Challenges and solutions:

- The MIS configuration was not fully meeting the needs for CHISU reporting and management activities. The MEL team held in-depth work sessions in Q2 to discuss and troubleshoot.
- Creating a fully accessible dashboard with CHISU achievements has been challenged by DevResults permissions and access. The MEL team initiated discussion with another JSI project that has developed extensive dashboards on other platforms to explore options.
- As CHISU's portfolio expands, the MEL workload is increasing. We hired a MEL officer who started in April and a measurement and learning specialist who will join the team in FY23 Q1.
- While CHISU is gathering information on learning through routine reports, we need additional support to synthesize those results to answer FY22 learning questions. We had temporary support for end-of-year learning activities.

Plans for next quarter:

- Support annual review process in October.
- Compile and oversee writing of annual report.
- Continue MEL, MIS, and COVID-19 orientations for new staff, including ML specialist.
- Facilitate data-driven pause and reflect sessions.
- Finalize the COVID-19 vaccination learning agenda work plan and initiate work on prioritized protocols.
- Develop and implement a robust learning action plan managed by the ML specialist.

XB-004 - Gender in HIS

CHISU integrated gender into activities, strategic planning, and HIS learning. CHISU reported quarterly updates in the MIS on progress, successes, and challenges for selected gender considerations based on country work plans, and gender considerations for all training and products. All new team members are oriented to gender.

Burkina Faso

Burkina Faso is making progress in incorporating gender in on-going activities. For example, the team has been documenting gender ratios at trainings and meetings, but in FY22 it moved from documenting differences to using those disparities to advocate for more women at trainings, encourage women to chair training events, and working to make women's voices heard and perspectives considered. CHISU also instituted breastfeeding breaks during trainings to allow women to participate more fully.

CHISU uses sex-disaggregated examples in materials for COVID-19 vaccination trainings and DQRs, and highlights gender considerations in data analysis during MOH coordination meetings. CHISU has invited gender representatives to train on ENDOS-BF for gender considerations and decision-making. CHISU also supported ST-OH in the development of a joint investigation form for health events according to the One Health approach. In this form, data on human-caused events have been disaggregated by age and sex to allow more detailed analysis.

Mali

CHISU's support in Mali began with an assessment of the systems that collect COVID-19 data that found that case tracking was not collecting sex-disaggregated data even though vaccination data were sex-disaggregated. Following the assessment, the integrated data management system now includes sex disaggregation. CHISU also developed dashboards on SitRep to highlight COVID-19 cases by age group and sex. CHISU has begun planning a gender section in the interoperability maturity report and a gender analysis of backlogged COVID-19 data and in FY23.

Niger

The SOCI assessment documented female participation in the assessment. Results also highlighted availability

of sex and age disaggregation in national registers, but quarterly and monthly reports do not include sex disaggregation (but do include some age).

Additionally an ICT assessment covering the status of connectivity and equipment in CHISU supported regions included examination of male and female data managers using technology equipment, and results are being used to ensure equitable distribution of ICT equipment. This will help ensure that men do not receive updated equipment more quickly or frequently than women. CHISU is also advocating for and documenting participation of women in the group that is leading the writing of the next HIS strategic plan.

Serbia

CHISU continues to seek collaboration and coordination efforts with the Social Inclusion and Poverty Reduction Unity and Coordinating Body for Gender Equality. Meetings early in FY22 introduced CHISU and clarified the role of the Coordinating Body, which is open to ongoing collaboration with CHISU and shared a list of the gender focal points in the MOH and Serbian Gender Index. Another milestone in gender integration is that CHISU job descriptions for staff supporting IPH Batut now include gender and selected candidates are expected to include gender in SOPs, protocol development, and data collection, analysis, and use. CHISU is also striving for and documenting parity in decision-making bodies such as the eHealth steering committee, and the finalized SOCI recommendations and action plan include attention to gender.

MENA

CHISU completed 11 landscape analyses that included questions about how gender is included in public health surveillance, and documented the proportion of women engaged as subject matter experts. Of the formal interviews conducted, six respondents were women and 17 were men. In addition, a gender considerations section was integrated into each country and regional brief submitted to USAID.

HPHC tool

USAID's HPHC tool includes several equity questions and analysis by sex, with visualizations allowing for disaggregation. There is room for future versions to improve functionality of comparing results by sex on the same screen; this was discussed internally and with USAID and will be considered in future iterations after further testing and rollout.

SOCI digitization

CHISU is testing the newly developed gender composite score in the digitized version of the SOCI tool. This score is calculated from the gender-informed domains and determined by stakeholders for these domains. The updated version was sent to Niger for assessment, and to other countries to generate a baseline score for gender retrospectively.

GHSA surveillance

CHISU incorporated gender in the GHSA data collection tool, as a disaggregation for the target audience for the questionnaire, and a question about availability of sex-disaggregated data.

New countries in FY22

Ghana

Gender was mainstreamed in the malaria data quality improvement training workshop by focusing on sex-disaggregation in analytics and data use for six malaria pre-elimination districts. Nationally, 37 percent of trainees were female, with 64 percent female trainees in Greater Accra Region.

Haiti

CHISU documented the availability of sex disaggregation in the TB and OVC MIS. Support was also provided to the MSPP to facilitate decision making through development of a national data web portal that includes sex disaggregated COVID-19 data. CHISU has also encouraged the MSPP to plan and conduct trainings and workshops that include a greater proportion of women. Further, due to CHISU support and encouragement, sex disaggregation has been added to the draft list of essential indicators.

Indonesia

Indonesia began work in FY22 with a strong gender component, partially attributable to CHISU's FY21 global efforts that increased demand for gender-related activities and data. CHISU is including gender in the tool to measure and track digital maturity and is advocating for gender disaggregation in the health worker database and IHS. The team is also going beyond documenting women's presence in workshops to assess participation and feedback.

CHISU has begun advocacy to maintain sex and age disaggregation across systems and started planning how to improve interpretation and use of health data to identify and mitigate sex differentials and gender-related challenges. The MOH will get guidance and orientation on gender considerations in HIS in FY23. Finally, CHISU is laying the groundwork in Indonesia for AI activities and capacity strengthening to include attention to gender.

Malawi

CHISU has also encouraged examination and presentation of sex-disaggregated data in DQAs and review meetings. For example, district data quality reviews focused on women's access to malaria prevention services.

Eastern and Southern Caribbean Countries

One of the monthly COVID-19 newsletters produced this year included a focus on gender and sex disaggregated data.

Deliverables	Deadline	Status
XB-004		
Gender in HIS planned activities table in MIS	FY23 Q3	In progress
Semi-annual and Annual reports	FY23 Q3	Not started
Annual report and relevant KM products or events	FY23 Q3	In progress

Challenges and solutions: None.

Plans for next quarter:

- Continue planning and tracking gender considerations.

XB-005 - Knowledge management support

In FY21, based on the lack of consensus in the literature on a definition for data demand, CHISU carried out a desk review and Delphi-like process to garner input through an expert panel. During FY22, the findings from the data demand Delphi-like panel were completed and refined and a strategy for including data demand in the complementary analysis was presented to USAID. With no objections from USAID, the complementary analysis section of the AMELP was updated and submitted in December (see XB-003 for further details).

CHISU finalized the Development Experience Clearinghouse submission process and the conference participant protocol. The KM team made significant, ongoing improvements to the intranet, making the site more user friendly (functionality and content) and more aesthetically pleasing. The KM team worked with the MEL and communications teams to coordinate review and submit conference abstracts to various global conferences. In FY22, CHISU submitted 33 conference abstracts and of those 18 were accepted.

On January 27, CHISU hosted the last webinar in its technical leadership series titled, "Insights from Serbia: Progressing towards eHealth digitization" with 88 participants. It also published a microblog that summarized key messages from the webinar. CHISU hosted three webinars in its new learning series this year. The first, "Data Demand in the Digital Era," discussed traditional definitions of data demand and how they may be changing with digital information systems and considerations for measuring data demand. Out of 131 registrants, there were 46 attendees representing 34 countries and 65 unique organizations. The second, "Digital Decisions Made for the COVID-19 Response - Reflections and Lessons," discussed the varying approaches that countries took to respond to these challenges and the implications for their HIS. Out of 243 registrants, there were 107 attendees representing 57 countries and 136 unique organizations. A microblog titled "Digital Decisions Made for the COVID-19 Response: Reflections and Lessons" was shared by USAID's HSS Network. The third, "Challenges and Opportunities with Linking Malaria Data: Global Perspectives from Ghana and Malawi," discussed the substantial challenges to digitally linking malaria data, as well as the opportunities as countries' health information systems experience digital transformation. Out of 197 registrants, there were 78 attendees representing 20 countries and 29 unique organizations.

The KM team jointly conceptualized and created the Activity CKM Plan template with the communications advisor and deployed it during dedicated monthly calls with country teams. The KM advisor worked with the MEL team to develop a process for data-informed pause and reflect sessions, launching with Burkina Faso in August and Indonesia in late September.

Deliverables	Deadline	Status
XB-005		
Quarterly orientation sessions	FY23 Q3	Delayed start
Country and Activity KM Plans	FY23 Q3	In progress
Selected synthesis	FY23 Q3	In progress
Conference abstracts	FY23 Q3	In progress
Intranet updates	FY23 Q3	In progress

Challenges and solutions:

- The Q1 external webinar was postponed until January because Serbian government officials were unavailable.
- The pause and reflect session at the November All-Hands meeting was postponed because of competing priorities. Two internal country pause and reflect sessions took place this reporting period in Burkina Faso and Indonesia.
- The full-time KM advisor started in the second half of Q3. Orientation and close oversight is facilitating catch up.

Plans for next quarter:

- Continue rolling out pause and reflect sessions at country and global levels. The KM team is creating a suite of products that can be used at/adapted to the country level (intro slides, adaptive management tracker, etc.) The proposed rollout is detailed in the pause and reflect calendar.
- Make the intranet a go-to resource for all CHISU staff.

XB-006 - Communications

CHISU continued creating communications tools and systems to augment and position its brand. This involved training for new staff, including a full-time communications advisor who started in June, a CHISU email signature, and efforts with team members across the world to make sure products and publications' look and feel represented the CHISU brand and identity.

CHISU helped disseminate the policy brief calling for more inclusive gender data and created an infographic summary of its results. It also launched a newsletter to summarize the results through success stories, blogs, and campaigns. CHISU remained responsive to USAID Washington's communications needs. For example, we contributed a short article and social media content to its commemoration of International Women's Day and International Health Worker Day. Several of our posts have appeared on USAID's Instagram, Facebook, and LinkedIn accounts.

The communications team revamped the CHISU website, as well as updated and developed communication guidelines and tools (e.g., editorial calendar, content gathering and production tools, social media content tracker). New initiatives in line with the project strategic objectives included a more editorialized presence on social media, fostering a content development culture in collaboration with all CHISU staff, joint work with KM and MEL, and brand strategy development and implementation.

Other activities were conference protocol and SOP updates; social media guidance updates; quarterly newsletter development; blog development and placement strategy; and website and social media updates. Capacity building included interactions with country teams, with tailored guidance and participatory support. Additionally, as part of the communications plan update process, we worked with project leadership on messaging, including narrative and pulse points leading up to the mid-project point.

CHISU continued engaging on LinkedIn, Facebook, and Twitter, and launched content on its Instagram account. Our social media activation continues to increase, especially on LinkedIn, where it reached 984 followers, 2,600 page views, and almost 1,000 unique visitors. All CHISU social media metrics showed considerable increase (number of posts, followers, fans, engagements, and clicks, as well as positive sentiment). Number of posts increased by 130 on Facebook, 131 on Twitter, and 145 on LinkedIn. Engagement increased by 72 on Facebook, 493 on Twitter, and 1.3K on LinkedIn. Click conversion increased by 204 on Facebook 1.6K on LinkedIn. Engagement and click conversion correlate with the increase in the number of posts and a more editorialized presence on social media. Our most engaging post on Twitter in September mentioned a meeting between CHISU, USAID ESC, and Guyana's MOH.

We also made a consistent effort to develop and disseminate web posts, including on earned specialized media such as the World Economic Forum blog, which published an opinion piece by CHISU leadership on how digital transformation is driving action in global

health. The CHISU website engaged 9.7K users and had 14K page views since the site was launched in April 2021. Traffic acquisition has been mostly through organic searches, including new users by channel and sessions by channel. The CHISU quarterly newsletter has had above industry average open rates and clicks per unique opens.

Deliverables	Deadline	Status
XB-006		
Updated Communications Plan	FY23 Q3	In progress
Content management guidance	FY23 Q3	Completed
Updated website	FY23 Q3	Completed
Country briefs	FY23 Q3	In progress
Quarterly newsletters	FY23 Q3	In progress
Blogs	FY23 Q3	In progress
Ongoing social media engagement	FY23 Q3	In progress
Corporate talking points	FY23 Q3	Completed
Webinars	FY23 Q3	In progress
Conference presentations	FY23 Q3	In progress

Challenges and solutions:

- The growing project workload due to its expansion to new countries and the increased number of activities in existing countries is requiring more communications support and guidance than is currently available. Hiring additional communications staff in the coming year will help to alleviate this issue.

Plans for next quarter:

- Focus on strategic communications for CHISU positioning, including partner-based communications, content production and dissemination/cross pollination, and digital ecosystem management.
- Continue to pursue strategic communication goals, including content development and dissemination, and enhanced social media presence.
- Update the communications plan, including partner engagement.
- Optimize online searches, boost strategies, and analyze competition for strategic positioning.
- Collaborate with MEL and KM work, including tailored country support depending on human resources availability.
- Advance branding, including template and asset development and build capacity on integrated KM/communications functions.

XB-011 - Mid-project technical meeting

The work plan was approved on June 30. Activities will commence in FY23.

Deliverables	Deadline	Status
XB-011		
Meeting agenda	FY23 Q3	Not started
Various vendor agreements	FY23 Q3	Not started

Challenges and solutions: None.

Plans for next quarter:

- Convene planning committee meetings.
- Develop mid-project meeting plan.

ANNEX 2. INDICATOR ACHIEVEMENT

Indicator	Data source(s)	FY22 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	8	CHISU is working on HIS governance in Burkina Faso, Haiti, Indonesia, Malawi, Mali, Niger, Serbia, and MENA.
1.2: Number of CHISU supported standards-based HIS governance processes implemented	Program records	19 BF-2 HT-1 ID-3 MW-3 ML-1 MENA-1 NR-2 SB-4 Core-2	In the SOCI area of *HIS leadership and coordination*, CHISU supported 8 processes: support to the One Health technical coordination group in Burkina Faso, support for eHealth policy strategy adoption in Haiti, support to orient and launch an HIS technical working group in Indonesia, support to COVID-19 coordinating bodies in Mali, support to the national M&E and National Malaria Control Program technical working groups in Malawi, support to the eHealth Steering Committee in Serbia, the high level assessment of HIS related to global security in MENA, and participation and leadership in global HIS working groups. CHISU supported the SOCI area of *HIS strategic planning* through 7 processes: supporting the finalization of the SOCI assessment process and improvement plan in Burkina Faso; supporting the national SOCI assessment in Malawi; supporting the national SOCI assessment to benchmark HIS status and evaluation of previous HIS strategic plan in Niger; finalization of the SOCI assessment to inform strategic planning and developing tools and procedures to track implementation in Serbia; and reviewing the global Health Data Collaborative routine health information system strategy. CHISU supported the SOCI area of *Existence of HIS policies and legislation* through 2 processes: providing technical input for the national malaria HIS policies in Malawi and developing and reviewing guidelines/policies/regulations for Digital Health Transformation in Indonesia. CHISU supported the SOCI area of *M&E Plan* through 1 process: supporting development of a digital health maturity index (including SOCI) for routine monitoring of the digital health transformation in Indonesia. CHISU supported the SOCI area of *HIS organizational structure and functions* through 1 process: drafting and circulating the SOCI Mentorship Plan in Serbia.
1.3: Number and percent of CHISU- supported key governance behaviors that improved	Program records	3 BF-2 SB-1	In Burkina Faso, the One Health Surveillance thematic commission has finalized regulatory texts. In addition, the new five-year HIS Strategic Plan in Burkina Faso incorporated SOCI findings and was finalized. In Serbia, the eHealth steering committee incorporated SOCI findings into the eHealth Strategy and related Action Plan and successfully supported the process of adoption by the government.
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 SOCI, KIIs, program records	0	CHISU completed baseline SOCI assessments of the national HIS in both Niger and Malawi. No follow-up assessments were conducted in FY22.

Indicator	Data source(s)	FY22 Achievement	Comment
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	6	CHISU is working on systems and software in Burkina Faso, Haiti, Indonesia, Madagascar, Mali, and Niger.
2.2 Number of CHISU supported systems and software processes developed	Program records	34 BF-12 HT-11 ID-2 MG-1 ML-4 NR-1 Core-3	In the SOCI area of *Data set definitions*, CHISU supported 13 processes: the One Health, MS-Surveillance, ENDOS, and BF-SANTE systems, and developing application and administrator user guides for COVID-19 systems in Burkina Faso; COVID-19 Vaccination Tracker, electronic health certificate for COVID-19 vaccination, and OVC data management in Haiti; HPHC tool adaptations and translation in Madagascar; COVID-19 electronic data management in Mali; building a web-based SOCI tool, maintaining the HPHC tool, and developing the ML newsfeed and design of the AI/ML knowledge hub at the global level. In the SOCI area of *Networks and internet connectivity*, CHISU supported 4 processes: internet connectivity for data entry at community level in Burkina Faso; internet connectivity for central, regional, and health facility levels in Mali; and internet connectivity for the COVID-19 Tracker and TB Tracker in Haiti. In the SOCI area of ICT *business infrastructure support*, CHISU supported 3 processes: providing server and IT support for COVID-19 Tracker, SISNU, and the TB Tracker in Haiti. In the SOCI area of *Hardware*, CHISU supported 3 processes: ICT equipment procurement in Burkina Faso; ICT assessment in Mali; and ICT assessment and procurement in Niger. In the SOCI area of *Aggregate data exchange*, CHISU supported 3 processes: supporting integration from other applications into ENDOS via the interoperability layer in Burkina Faso; and ensuring the functionality of SISNU-MESI integration and COVID-19 Tracker data in the national data web portal in Haiti. In the SOCI area of *Data and exchange standards*, CHISU supported 2 processes: conducting an interoperability maturity assessment in Mali; and supporting interoperability services for MNH, TB, and health financing in the IHS. In the SOCI area of *Enterprise architecture*, CHISU supported 2 processes: supporting completion and communication of the enterprise architecture in Indonesia, and supporting the drafting of a new national health enterprise architecture in Haiti. In the SOCI area of *Business continuity and processes and policies*, CHISU supported 1 process: Help desk support in Burkina Faso. In the SOCI area of *Person data exchange*, CHISU supported 1 process: supporting interoperability between One Health and related COVID applications in Burkina Faso. In the SOCI area of *Master facility list*, CHISU supported 1 process: defining the roadmap and validating a framework for the implementation of the master facility list in Burkina Faso. In the SOCI area of *Terminology management,* CHISU supported 1 process: implementation of ICD-11 classification in ENDOS in Burkina Faso.
2.3: Number of CHISU supported electronic systems that were scaled or enhanced	Program records	8 BF-3 HT-2 ID-1 MG-1 ML-1	CHISU scaled 2 systems (ENDOS and One Health information system) to health facility- and community-levels in Burkina Faso. CHISU enhanced 6 systems: added appointment software for COVID-19 to MS-Surveillance in Burkina Faso; finalized prototype of 'Passe Sanitaire' for Electronic Health Certificate for COVID-19 vaccine recipients and included COVID-19 Tracker data in the national data web portal in Haiti; launched the national Indonesia Health Service to demonstrate how Satu Sehat can function as a health information exchange platform in Indonesia; translated the HPHC tool into Malagasy in Madagascar; and configured a link between the COVID-19 surveillance system and the vaccination system to enable client follow up throughout notification, treatment, and vaccination in Mali.

Indicator	Data source(s)	FY22 Achievement	Comment
2.4: Number of CHISU-supported electronic systems with newly enabled interoperability or readiness for interoperability	Program records	3 BF-3	In Burkina Faso, CHISU enabled new interoperability between ENDOS and three applications, NetSIGL2, mHealth, and RapidPro.
2.5: Number and percent of CHISU-supported countries or regions that advance in HIS ICT infrastructure and HIS standards and interoperability components on the SOCI scale	Formal or informal SOCI, KIIs, program records	0	CHISU completed baseline SOCI assessments of the national HIS in both Niger and Malawi. No follow-up assessments were conducted in FY22.
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	8	CHISU is working on data use in Burkina Faso, Ghana, Haiti, Indonesia, Malawi, Mali, Serbia, and ESC.
3.2: Number of countries and regions engaged by CHISU to increase quality of HIS data	Program records	6	CHISU is working on data quality in Burkina Faso, Ghana, Haiti, Malawi, Mali, and Niger.
3.3: Number of CHISU supported data use processes implemented	Program records	25 BF-6 GH-1 HT-2 ID-2 MW-2 ML-5 SB-3 ESC-1 Core-3	In the SOCI area of *Information/data availability*, CHISU supported 10 processes: joint investigation tool development, EBS training, ENDOS deployment, and supportive supervision in Burkina Faso; supporting identification of data needs and development of dashboards for routine immunization in Indonesia; implementing mechanisms that enhance COVID-19 data sharing, retrospective data entry, and supporting weekly analysis in Mali; and expanding the use of the HPHC tool globally (Philippines, Nigeria, and Ethiopia). In the SOCI area of *Data synthesis and communication*, CHISU supported 7 processes: training health managers on data analysis using ENDOS in Burkina Faso; building capacity for malaria data analytics in Ghana; supporting analysis and validation of data for and production of the national statistical report in Haiti; supporting development of an automated malaria bulletin in the national DHIS2 and conducting integrated program and malaria-specific data reviews in Malawi; and developing monthly country briefs in ESC. In the SOCI area of *Decision support*, CHISU supported 2 processes: supporting customized decision support tools for COVID-19 SitRep in Mali, and supporting a review of digital supportive supervision frameworks, tools and programs globally. In the SOCI area of *User/stakeholder engagement*, CHISU supported 2 processes: conducting a review of One Health surveillance data and experience sharing workshop in Burkina Faso, and supporting data use capacity strengthening at national and subnational levels in Indonesia. In the SOCI area of *Reporting and analytics features*, CHISU supported 2 processes: developing AI-driven prototypes in Serbia, and engaging a local university for advanced analytics for COVID-19 in Mali. In the SOCI area of *Data use availability strategy,* CHISU supported 1 process: the data use needs assessment in Serbia. In the SOCI area of *Data collection alignment with workflow*, CHISU supported 1 process: conducting a digitization assessment for immunization in Serbia.

Indicator	Data source(s)	FY22 Achievement	Comment
3.4: Number of CHISU supported data quality processes implemented	Program records	15 BF-4 GH-1 HT-3 MW-1 ML-2 NR-2 Core-2	In the SOCI area of *Data quality assurance and quality control,* CHISU supported 15 processes: One Health training and supervision for data quality, data quality review and retrospective data entry for COVID-19, DQR deployment and supervision, and data quality review meetings in Burkina Faso; development of a data quality assurance plan and data quality review meetings in Mali; data quality improvement trainings in Ghana; data quality workshops and inclusion of DQA indicators on national dashboards in Haiti; DQA job-aid to support action plan documentation in Malawi; DQR deployment and development of a data quality assurance plan in Niger; and reviewing the data quality section of the WHO RMNCAH Use of Facility Data Guidelines and reviewing application of community-based information system guidance globally.
3.5: Number and percent of CHISU-supported key data use behaviors that improved	Program records	6 BF-2 HT-1 ID-1 ML-1 SB-1	In Burkina Faso, the One Health Technical Secretariat completed a joint investigation of high poultry mortality reported on the CHISU-supported One Health platform in Burkina Faso. In addition, CHISU conducted a national workshop to review data and share experiences of using the One Health surveillance platform. In Haiti, the national annual statistical reports for two years (2020 and 2021) were published and disseminated at a launch event. In Indonesia, current and new data needs were identified and dashboards were developed for routine immunization, including disaggregation to the Puskesmas level. In Mali, key decision makers are using the CHISU-supported COVID-19 SitRep dashboard in the national DHIS2 with the help of a data analysis guide for COVID-19 decision support tools. In Serbia, CHISU developed a prototype to demonstrate how AI can be leveraged to predict bed occupancy and allocation across health facilities.
3.6: Number and percent CHISU-supported key data quality behaviors that improved	Program records	3 BF-2 ML-1	In Burkina Faso, district managers are using the WHO DQR module in ENDOS to identify and correct missing, atypical, and inconsistent data with the help of a CHISU-supported DQR user guide, training, and data review workshops. In addition, health facility staff are entering monthly data in ENDOS as a result of CHISU's support for training and deployment, resulting in an increase of timeliness of reporting from 82 percent in August 2021 to 99 percent in February 2022. In Mali, four regions are using the WHO DQR module in the national DHIS2 to review the quality of COVID-19 data, resulting in an increase of completeness from <10 percent in May to over 90 percent at the end of September.
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 SOCI, KIIs, program records	0	CHISU completed baseline SOCI assessments of the national HIS in both Niger and Malawi. No follow-up SOCI assessments were conducted in FY22.
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 SOCI, KIIs, program records	0	CHISU completed baseline SOCI assessments of the national HIS in both Niger and Malawi. No follow-up SOCI assessments were conducted in FY22.

Indicator	Data source(s)	FY22 Achievement	Comment
SO 4: Strengthened organizational development of local non-governmental 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	0	No local partners have been engaged by CHISU in an intentional and demand-driven performance improvement process.
4.2: Percent of CHISU-assisted organizations with improved performance [CBLD-9]	Program records	N/A	No local partners have been engaged by CHISU in an intentional and demand-driven performance improvement process.
4.3: Number and percent of CHISU-supported local organizations that meet criteria to receive direct funding for HIS programming	Program records	N/A	No local partners have been engaged by CHISU in an intentional and demand-driven performance improvement process.
4.4: Number and percent of CHISU-supported local partners that successfully applied for direct funding for HIS programming	Program records	N/A	No local partners have been engaged by CHISU in an intentional and demand-driven performance improvement process.
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	4,080	This includes 2,229 in Burkina Faso, 251 in Ghana, 64 in Haiti, 1,282 in Indonesia, 115 in Malawi, 74 in Mali, and 65 in Niger. Overall, 76% (3,084) were males and 24% (996) were females. Over half of those trained came from MOH (2,192), 42% (1,706) were from other government ministries, and less than 1% from other stakeholder types. Just over one-third of those trained came from the subnational-level (1,510), another third came from the community-level (1,368), 17% (713) came from the facility-level, and 12% (489) came from national-level.
5.2: Number of newly adopted global goods that are used by stakeholders in CHISU-supported countries or regions	Program records	1	The SOCI toolkit was newly used in Niger and Malawi.
5.3: Number of global goods that are adjusted or augmented based on stakeholder feedback in CHISU-supported countries or regions	Program records	0	CHISU is supporting the use of global goods including SOCI, DHIS2, SORMAS, and RapidPro. However, in FY22, this use has not resulted in any adjustments or augmentation.

Indicator	Data source(s)	FY22 Achievement	Comment
Data Security and Privacy			
6.1: Number and percent of CHISU supported countries where CHISU activities include data security	Program records	4 (40 percent)	In Burkina Faso, CHISU incorporates data security into training of end-users for ENDOS and the One Health electronic platform, as well as into the work supporting data exchange through the One health interoperability layer. In Haiti, CHISU made significant technical contributions to the data protection and security component of the draft Haiti Digital Health Policy, and convened meetings with stakeholders to refine it. In addition, CHISU completed an audit of SISNU user accounts and created SOPs for user management and physical access to the SISNU servers. In Indonesia, CHISU drafted a security questionnaire for the Satu Sehat onboarding form and completed the SOP for data access to ensure secure Satu Sehat integration. To reinforce the secure exchange of data for the Satu Sehat data warehouse, CHISU created SOPs, a service-level agreement, and API gateway for internal and external systems to access the Satu Sehat environment. CHISU began discussions on the development of a new security awareness program with the MOH, including evaluation of its existing program. In Niger, CHISU included data security in the ICT infrastructure assessment and national assessment to benchmark HIS status.
6.2: Number of CHISU-supported countries or regions that have financial, technical and human resources dedicated to data security	Program records	2	Malawi documented on the SOCI scale: 4 on HIS policies, 2 on Policy compliance, and 3 on Data security exchange. Niger documented on the SOCI scale: 2 on HIS policies, 2 on Policy compliance, and 2 on Data security exchange.
6.3: Number and percent of CHISU-supported countries or regions with improved data security	Program records	1	In Haiti, CHISU completed an audit of user accounts for access to SISNU, removing account access where it was no longer needed and flagged inactive accounts for action by UEP. Additionally, CHISU created SOPs for user management and physical access to the SISNU servers.
Gender			
7.1: Number and percent of HIS products or events created or conducted with CHISU support, which include gender considerations	Program records	47 (41 percent)	Out of the 114 knowledge-sharing products and events (see 8.1 and 8.2 below), 47 (41 percent) considered gender. This includes three from Burkina Faso, one from Ghana, three from Haiti, six from Indonesia, five from Mali, four from Serbia, six from ESC, 13 from MENA, and six from core activities. For more information, see Annex 4.
Knowledge Management			
8.1: Number of knowledge-sharing products to which CHISU contributed	Program records	35	This includes two products from Burkina Faso, two from Malawi, six from ESC, three from Haiti, 13 from MENA, one from Serbia, and eight from core activities. For more information, see Annex 4.
8.2: Number of knowledge-sharing events in which CHISU participated	Program records	79	This includes 22 events in Burkina Faso, six in Ghana, four in Haiti, 19 in Indonesia, six in Mali, 14 in Malawi, two in Niger, two in Serbia, and four in core activities. For more information, see Annex 4.

ANNEX 3. COMMUNICATION PRODUCTS

Blogs

- WEF: How digital transformation is driving action in healthcare
- Challenges and Opportunities with Linking Malaria Data – Perspectives from Ghana and Malawi
- Areas that CHISU is looking forward to learning about at the Digital Health Forum 2022
- Malawi: A roadmap for improving the health information system
- Breastfeeding breaks: CHISU supports gender mainstreaming in Burkina Faso
- Digital Decisions Made for the COVID-19 Response: Reflections and Lessons
- Remote ICT Assessment in Niger Highlights Challenges and Guides Planning for Country HIS Architecture
- How Has Data Demand Been Transformed in the Digital Age?
- New eHealth Strategy Promotes Data Use in Serbia
- Decentralized Reporting at Health Facilities Will Lead to Improved Data Quality in Burkina Faso
- Serbia: Moving from Strategy to Action
- The Case of the Dead Cattle and Fish in Burkina Faso
- Ministries Gain Better Insights From Interoperable Data in Burkina Faso
- Serbia eHealth Digitization
- An innovative tool that helps track a country health system's ability to deliver care
- Gender Disaggregation of Data in International Development Programs: A Conversation with Rajeev Colaço and Stephanie Watson-Grant

Success stories

- Results in Action: Ministries Gain Better Insights From Interoperable Data in Burkina Faso
- Results in Action: The Case of the Dead Cattle and Fish in Burkina Faso
- Results in Action: New eHealth Strategy Promotes Data Use in Serbia
- Results in Action: Decentralized Reporting at Health Facilities will Lead to Improved Data Quality in Burkina Faso
- Results in Action: Joint Supervision Enables Agile COVID-19 Response in Burkina Faso
- Results in Action: Creating a Flexible and Responsive Context Enhances Malaria E-Tracker in Ghana
- Results in Action: Haiti Launches Annual Reports on Health System Performance
- Results in Action: Satu Sehat - Indonesia goes Big with Health Information Exchange Platform for the Entire Country
- Results in Action: Helping Improve COVID-19 Surveillance Coordination in Mali
- Results in Action: Implementing Tools and Building Capacity around Data Quality Review in Niger

Webinars and other recordings

- CHISU YouTube channel
- Digital Decisions Made for the COVID-19 Response: Reflections and Lessons
- Data Demand in the Digital Age
- Insights from Serbia: Progressing towards eHealth digitization

Newsletter

- CHISU Bulletin: Two years in and growing
- CHISU Bulletin: International Health Day

Launched

- CHISU Instagram
- CHISU Web Resources Taxonomy
- CHISU Blogs Thumbnails
- CHISU Active/Inactive Footprint Map
- CHISU Quarterly Newsletter
- 2022 semiannual infographic summary: CHISU Highlights from October 2021-March 2022
- 2021 end of year infographic summary: What has CHISU been up to in 2021?

Social media

- CHISU Website
- CHISU LinkedIn
- CHISU Twitter
- CHISU Facebook
- CHISU Instagram

Promotional material

- What is CHISU?
- Webinar social media banners (e.g., Challenges and Opportunities with Linking Malaria Data – Perspectives from Ghana and Malawi)
- Social media tiles - Where we Work, Now Hiring, and conferences (e.g., DHIS2 annual Symposium, Health Systems Research Symposium, World Health Summit, Foro de Salud Digital).
- Branded QR codes (e.g., CHISU Factsheet)

Country material

- Event banners (e.g., Mali, Madagascar)
- Graphs (e.g., Burkina Faso, Why 3PU, CHISU Overview)
- Presentations (e.g., CHISU Health Partner Presentation, CHISU Technical Overview to PMI, COVID-19 surveillance and vaccination programs in Mali, C19 data integration and Use in Burkina Faso, USAID COVID19 Vaccine CLA Kick Off, CHISU Mali presentation, Ghana SORMAS Presentation)
- Templates - CHISU Report Cover Template Niger, CHISU Overview Presentation, CHISU Presentation Deck, CHISU Technical Report Template, Stationary Template Niger

Guidance

- Revised Communications Guidance
- Country Story Guidance
- CHISU Messaging
- Content Submission Form
- Logo Request Form

Fact sheets (available in print only)

- CHISU Factsheet (English and French)
- CHISU Niger
- CHISU Ghana
- CHISU Haiti

ANNEX 4. KNOWLEDGE MANAGEMENT PRODUCTS AND EVENTS

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Oct 30, 2021	Event	Atelier SOCI: Plan d'amelioration à koudougou	Burkina Faso	x					x			Workshop	x
Nov 04, 2021	Event	Orientation des acteurs du niveau central sur la surveillance One Health	Burkina Faso		x	x	x		x			Training	
Nov 11, 2021	Product	HIC: One Health Information System in Burkina Faso	Burkina Faso	x	x				x			Conference presentation	
Nov 11, 2021	Product	HIC: SOCI	Global	x	x	x	x		x			Conference presentation	
Nov 13, 2021	Event	Formation des acteurs regionaux sur la mise en œuvre de la surveillance <<One Health>> dans la Region de la Boucle du Mouhoun	Burkina Faso		x	x	x		x			Training	
Nov 19, 2021	Event	Chat with CHISU: Building Serbia's e-Health Strategy through Multi-stakeholder Engagement	Serbia	x					x	x		Facebook live event	x
Nov 26, 2021	Product	Conference presentation, WAHO: Des donnees a l'action_ L'approche One Health au Burkina Faso	Burkina Faso			x			x			Conference presentation	
Nov 27, 2021	Event	Formation des acteurs regionaux du centre ouest sur la surveillance basée sur l'approche one health	Burkina Faso		x	x	x		x			Training	
Dec 08, 2021	Product	Conference workshop, GDHF: Improving health information systems using 'Stages of Continuous Improvement' tool	Global	x	x	x	x		x			Conference presentation	
Dec 08, 2021	Product	Conference panel, GDHF: Measuring and Advancing the Maturity of Digital Health Ecosystems	Global	x	x	x	x		x			Conference presentation	
Dec 08, 2021	Product	Conference workshop, GDHF: Is your health system Accessible, Accountable, Affordable and Reliable?	Global		x	x			x			Conference presentation	x

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Dec 10, 2021	Event	Formation des acteurs des points de prestations sur One Health (EBS et plateforme) a Boromo	Burkina Faso		x	x	x		x			Training	x
Dec 17, 2021	Event	Formation des acteurs communautaires sur la mise en œuvre de la surveillance <<One Health>> dans la province des bale	Burkina Faso			x	x		x			Training	
Jan 27, 2022	Event	Insights from Serbia: eHealth Digitization	Serbia	x	x	x		x	x			Webinar	x
Jan 28, 2022	Event	Workshop of the National Health Information System of Niger Assessment with the SOCI tool	Niger	x	x	x	x		x			Workshop	
Feb 05, 2022	Event	Rencontre preparatoire a la formation des agents du district sanitaire sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires	Burkina Faso				x		x		x	Training	
Feb 11, 2022	Event	Formation des agents du district sanitaire de Reo sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Reo	Burkina Faso			x	x		x			Training	
Feb 18, 2022	Event	Formation des agents du district sanitaire de Nanoro sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Nanoro	Burkina Faso			x	x		x			Training	
Feb 18, 2022	Event	Formation des agents du district sanitaire de Sabou sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Sabou	Burkina Faso			x	x		x			Training	
Feb 18, 2022	Event	Formation des agents du district sanitaire de Sapouy sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Sapouy	Burkina Faso			x	x		x			Training	

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Feb 18, 2022	Event	Formation des agents du district sanitaire de Tenado sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Tenado	Burkina Faso			x	x		x			Training	
Feb 25, 2022	Event	Atelier de nettoyage de la base Endos-BF	Burkina Faso			x			x			Workshop	
Feb 28, 2022	Event	Formation des acteurs des Points de Prestation de Sabou sur l'utilisation de la plate forme electronique	Burkina Faso		x	x	x		x			Training	x
Mar 08, 2022	Product	CBIS guidance list	Global		x	x		x	x			Desk review	x
Mar 10, 2022	Product	Microblog - Insights from Serbia: Progressing towards eHealth digitization	Serbia	x	x	x			x	x		Blog	x
Mar 11, 2022	Event	Formation des agents du district sanitaire de Leo sur la saisie decentralisee des rapports mensuels d'activites des formations sanitaires a Leo	Burkina Faso			x	x		x			Training	
Mar 19, 2022	Event	Formation des acteurs des points de prestations de Dedougou sur la mise en œuvre de la surveillance <<One Health>>	Burkina Faso		x	x	x		x			Training	
Mar 25, 2022	Event	Formation des acteurs communautaires sur la mise en œuvre de la surveillance <<One Health>> dans la province du Mouhoun	Burkina Faso		x	x	x		x			Training	
Apr 05, 2022	Product	COVID-19 March Newsletter	ESC	x	x	x			x				x
Apr 16, 2022	Event	Workshop to finalize the WHO Data Quality Tool user guide in two days in Ouagadougou	Burkina Faso			x	x		x			Workshop	
Apr 20, 2022	Event	Data Demand in the Digital Era	Global	x	x	x	x		x			Webinar	x
Apr 28, 2022	Product	Conference presentation, DHIS2: Digital Approaches to Data-Driven Supportive Supervision	Global		x	x			x			Conference Presentation	x
May 05, 2022	Product	COVID-19 April Newsletter	ESC	x	x	x			x				x

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
May 06, 2022	Event	Malaria M&E TWG	Malawi	x				x					
May 06, 2022	Event	Orientation session for stakeholders from the DGSHP and INSP/DOUSP on filling out the customized sitrep forms in DHIS2	Mali	x					x			Training	x
May 07, 2022	Event	Training of regional and health district actors on DQR in Endos-BF in Kaya	Burkina Faso			x	x		x			Training	
May 07, 2022	Event	Training of regional and health district actors on DQR in Endos-BF in Tenkodogo	Burkina Faso			x	x		x			Training	
May 07, 2022	Product	Conference presentation, DHIS2: From paper based to electronic register: The digital transformation of TB/HIV patient monitoring in Haiti	Haiti		x				x			Conference Presentation	
May 07, 2022	Product	Conference presentation, DHIS2: COVID-19 electronic digital certificate: Lessons learned from the COVID-19 vaccination tracker implementation in Haiti	Haiti		x				x	x		Conference Presentation	
May 09, 2022	Event	Global Fund Grants M&E thematic meeting	Malawi	x				x					
May 10, 2022	Event	Digital Health Task Force Meeting	Malawi	x									
May 17, 2022	Event	Orientation session for Bamako districts on the use of covid-19 surveillance tracker and aggregate report forms in DHIS2 to enter historical data	Mali		x				x			Training	x
May 17, 2022	Event	Integrated Program & Data Review Meeting for Central West Zone	Mali		x				x			Training	x
May 20, 2022	Event	DQR User's Manual Development Workshop	Niger	x	x	x	x	x	x			Workshop	
May 24, 2022	Event	Data Quality assessment and Lesson Learned Sharing session for Southern District	Haiti			x		x	x		x		x

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
May 24, 2022	Event	Integrated Program & Data Review Meeting for Central East Zone	Malawi			x			x				
May 27, 2022	Event	Health Sector M&E TWG Meeting	Malawi	x				x					
May 31, 2022	Event	Data Quality assessment and Lesson Learned Sharing session for Northern District	Haiti			x		x	x		x		x
May 31, 2022	Event	Integrated Program & Data Review Meeting for Northern	Malawi			x			x				
Jun 05, 2022	Product	COVID-19 May Newsletter	ESC	x	x	x			x				x
Jun 06, 2022	Event	Integrated Program & Data Review Meeting for South East Zone	Malawi			x			x				
Jun 07, 2022	Event	Data Quality Improvement Training in Bono region	Ghana			x							
Jun 08, 2022	Event	Digital Decisions Made for the COVID-19 Response - Reflections and Lessons	Global	x	x	x	x		x			Webinar	x
Jun 10, 2022	Event	Data Quality Improvement Training in Upper East region	Ghana			x							
Jun 10, 2022	Event	Data Quality Improvement Training in Savannah region	Ghana			x							
Jun 13, 2022	Event	Integrated Program & Data Review Meeting for South West Zone	Malawi			x			x				
Jun 13, 2022	Event	Orientation session for Mopti districts on the use of COVID-19 surveillance tracker and aggregate report forms in DHIS2 to enter historical data	Mali		x				x			Training	x
Jun 14, 2022	Event	National Health Data Standards and Interoperability Training	Indonesia		x				x				

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Jun 14, 2022	Event	Kasungu District Data Review Meeting	Malawi			x			x				
Jun 15, 2022	Event	Data Quality Improvement Training in Ahafo region	Ghana			x							
Jun 15, 2022	Event	Optimizing Data Use in Public Health Decision-Making in Serbia	Serbia			x		x	x			Workshop	x
Jun 17, 2022	Event	Training of regional and health district actors on DQR in Endos-BF in Bobo Dioulasso	Burkina Faso			x	x		x			Training	x
Jun 17, 2022	Event	Training of regional and health district actors on DQR in Endos-BF in Koudougou	Burkina Faso			x	x		x			Training	
Jun 20, 2022	Product	ISS&M Data Analysis Report Writing	Malawi			x					x		
Jun 23, 2022	Event	Data Quality Improvement Training in Western North region	Ghana			x							
Jun 24, 2022	Event	Orientation session for Sikasso districts on the use of COVID-19 surveillance tracker and aggregate report forms in DHIS2 to enter historical data	Mali		x				x			Training	x
Jun 29, 2022	Event	Northern Region Post COVID-19 Vaccination Campaign Data Validation and Entry	Haiti			x					x		
Jun 30, 2022	Event	HIS SOCI	Malawi	x					x				
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Jordan	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Egypt	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Libya	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - West Bank Gaza	MENA	x					x	x		Slides	x

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Syria	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Yemen	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Tunisia	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Algeria	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Lebanon	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Morocco	MENA	x					x	x		Slides	x
Jun 30, 2022	Product	Health Information System Landscape Analysis Brief - Iraq	MENA	x					x	x		Slides	x
Jul 05, 2022	Event	Orientation session for Segou districts on the use of COVID-19 surveillance tracker and aggregate report forms in DHIS2 to enter historical data	Mali	x					x			Training	x
Jul 06, 2022	Product	COVID-19 June Newsletter	ESC	x	x	x			x				x
Jul 21, 2022	Event	South Sulawesi Stakeholders Meeting	Indonesia	x	x	x	x	x				Scoping visit	
Jul 24, 2022	Event	DQA Tool Field Testing	Malawi			x					x	Best practices	
Jul 24, 2022	Product	Data Quality Job Aid	Malawi			x					x		
Jul 27, 2022	Event	The Second Digital Maturity Assessment Workshops	Indonesia	x				x				Workshop	
Aug 03, 2022	Event	Data Quality Improvement Training in Greater Accra Region Group 2	Ghana	x	x	x	x		x		x	Training	x
Aug 04, 2022	Product	COVID-19 July Newsletter	ESC	x	x	x			x				x
Aug 05, 2022	Event	Health Financing Workshop	Indonesia			x		x				Focus group	
Aug 08, 2022	Event	Enterprise Architecture Workshop	Indonesia		x			x					
Aug 10, 2022	Event	Annual Statistics Report launch	Haiti		x	x			x	x		Telling and publishing	x

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Aug 11, 2022	Event	Malaria Routine Data Quality Strengthening Workshop	Malawi		x			x	x				
Aug 24, 2022	Event	Digital Health TWG Meeting	Malawi	x				x					
Aug 24, 2022	Event	TB Sprint Design Workshop	Indonesia		x			x					
Aug 29, 2022	Event	Satu Sehat Training for Primary Health Care in East Java	Indonesia	x	x	x	x	x		x		Scoping visit	
Aug 29, 2022	Product	Health Information Systems (HIS) Landscape Analysis Summary Report, Middle East & North Africa Region (MENA) - REPORT VERSION	MENA	x						x		Publishing approach	x
Aug 29, 2022	Product	Health Information Systems (HIS) Landscape Analysis Summary Report, Middle East & North Africa Region (MENA) - SLIDE DECK VERSION	MENA	x						x		Publishing approach	x
Aug 30, 2022	Event	Digital Maturity Assessments (DMA) Trial	Indonesia	x					x				x
Aug 30, 2022	Product	Conference presentation, DHIS2: Making routine health information system data more accessible in Haiti with the Carte Sanitaire system	Haiti		x							Conference Presentation	
Aug 30, 2022	Product	Conference presentation, DHIS2: Digital Approaches to Data-Driven Supportive Supervision	Global		x	x			x			Conference Presentation	x
Aug 31, 2022	Event	Challenges and Opportunities with Linking Malaria Data: Global Perspectives from Ghana and Malawi	Global		x	x		x	x			Webinar	
Sep 01, 2022	Event	Participation in CoVDP Digital Health and GIS Working Group	Mali		x				x			Telling approach	
Sep 05, 2022	Event	Evaluation Digital Maturity Assessments (DMA) Trial Evaluation	Indonesia	x							x	Workshop	x
Sep 07, 2022	Event	Data Use Curriculum Working Session with Stakeholders	Indonesia			x		x				Focus group	

Date	Type	Name of Event/Product	Country/ Region	Topics covered				KM approach used				Description	Gender considered?
				SO1	SO2	SO3	SO4	Asking	Telling	Publishing	Searching		
Sep 07, 2022	Event	FGD on Data Use Curriculum the capacity improvements of the health workforce	Indonesia			x		x				Workshop	
Sep 12, 2022	Product	Microblog on Malaria webinar	Global		x	x			x	x		Blog	
Sep 14, 2022	Event	SATU SEHAT Training: TB Use Case	Indonesia		x			x				Workshop	
Sep 14, 2022	Event	Workshop Metadata Finalization Of Health Account And Financing Application System	Indonesia			x		x				Workshop	
Sep 15, 2022	Product	COVID-19 August Newsletter	ESC	x	x	x			x				x
Sep 19, 2022	Event	Testing TB Use Case on Satu Sehat	Indonesia		x				x			Workshop	
Sep 20, 2022	Event	Digital Maturity Assessments (DMA) Training	Indonesia	x					x				x
Sep 20, 2022	Event	Satu Sehat Training for Primary Health Care in East Java	Indonesia		x			x				Workshop	x
Sep 21, 2022	Event	HIS Technical Working Group initial meeting	Indonesia	x				x					
Sep 22, 2022	Event	DMI FGD Qualitative Data Collection	Indonesia	x					x				x
Sep 27, 2022	Event	Pause, Reflect, and Work Planning Workshop	Indonesia	x	x	x	x	x				Program review	x

ANNEX 5. CHANGES TO APPROVED WORK PLANS

BF-001 - One Health Information System Strengthening in Burkina Faso

Approved Task	Approved start date	Approved end date	Change	Justification
3.1.1 Review of One Health surveillance data in CHISU regions	Y2 Q4	Y2 Q4	Cancelled	This activity was not funded.

BF-003 - Strengthening availability and use of COVID-19 data in Burkina Faso

Approved Task	Approved start date	Approved end date	Change	Justification
2.1.5 Workshop report on retrospective COVID data entry	Y2 Q2	Y2 Q3	Scope adjustment	This activity was reviewed and limited only to COVID-19 vaccination data. Request was sent to USAID for approval.
2.1.6 Support the COVID-19 vaccination campaign			Added	This activity was added to the workplan. A request was sent to USAID for approval.

GH-001 - Ghana Scoping

Approved Task	Approved start date	Approved end date	Change	Justification
Key stakeholder list	Y1 Q3	Y1 Q3	Extended	The key stakeholder list was originally due October 30, 2021, but identifying a consultant took longer than expected. On October 25, 2021, USAID approved the extension to November 30.
Stakeholder recommendations and findings	Y1 Q3	Y1 Q3	Extended	The stakeholder recommendations and findings were originally due October 30, 2021, but identifying a consultant took longer than expected. On October 25, 2021, USAID approved the extension to November 30.
Proposed 18 months workplan	Y1 Q3	Y1 Q3	Extended	The proposed work plan was originally due October 30, 2021, but identifying a consultant took longer than expected. On October 25, 2021, USAID approved the extension to November 30.

ID-001 - Indonesia Scoping and Co-creation

Approved Task	Approved start date	Approved end date	Change	Justification
Site visit reports	Y2 Q1	Y2 Q1	Cancelled	Due to COVID-19 restrictions the Senior HIS Advisor's visa for travel to Indonesia was not processed and therefore he did not travel, so no site visits were conducted.

ML-002 - Strengthening COVID-19 data quality and use in Mali

Approved Task	Approved start date	Approved end date	Change	Justification
1.1.1 Revised TWG TOR and weekly COVID-19 sub-commission meetings	Y2 Q2	Y3 Q1	Modified start and end dates	The start date (originally January 1, 2022) and due date (originally December 31, 2022) were revised according to the priority activities plan shared with USAID. The activity was completed on March 30, 2022.
1.1.3 Data sharing agreement document	Y2 Q2	Y2 Q2	Revised start date	Start date (originally January 1, 2022) was revised according to the priority activities plan shared with USAID. CHISU has completed the revision and customization of SitRep in DHIS2 as well as the development of the dashboard. CHISU will be drafting the data sharing agreement document on this basis.
2.1.2 CBS roadmap and workshop reports	Y2 Q2	Y3 Q1	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID
2.1.3 ICT assessment and inventory report	Y2 Q2	Y2 Q3	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID
2.1.4 Recommendations for sustainable internet solution	Y2 Q2	Y3 Q1	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID
3.1.1 Data quality assurance plan	Y2 Q2	Y2 Q2	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID
3.2.1 Data quality review meeting reports	Y2 Q2	Y2 Q3	Delayed start	Start date (originally January 1, 2022) and due date (originally December 31, 2022) were revised according to the priority activities plan shared with USAID. The activity will begin in June 2022.
3.3.2 Recommendations brief for advanced analytics	Y2 Q2	Y3 Q1	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID
3.3.3 Recommendations brief for artificial intelligence for COVID-19 data use	Y2 Q2	Y3 Q1	Delayed start	This activity has not started because it is not among the priority activities agreed with USAID

ESC-001 - COVID-19 support in Eastern and Southern Caribbean Countries

Approved Task	Approved start date	Approved end date	Change	Justification
3.1.2	Y2 Q2	Y3 Q1	Delayed start	The activity is currently under revision due to delays in press releases. CHISU expects to receive final approval from USAID to change the start of the activity to April 1, 2022.

MENA-001 - Support to GHSA information systems in MENA

Approved Task	Approved start date	Approved end date	Change	Justification
1.1.4 Country brief of landscape analysis in Morocco	Y1 Q3	Y1 Q4	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
1.1.7 Country brief of landscape analysis in Iraq	Y1 Q3	Y2 Q1	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
1.1.10 Country brief of landscape analysis in Lebanon	Y1 Q3	Y2 Q2	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
1.1.11 Country brief of landscape analysis in Algeria	Y1 Q3	Y2 Q2	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
1.1.12 Regional brief	Y1 Q3	Y2 Q2	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
1.1.13 Quarterly update slides	Y1 Q3	Y2 Q2	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3
2.1 Recommendations brief	Y1 Q3	Y2 Q2	Delayed completion	Negotiating adjusted timeline for deliverable, extension of remaining activities into Q3

OHS-003 - GHSA Surveillance Data Analysis and Use

Approved Task	Approved start date	Approved end date	Change	Justification
5 case studies	Y2 Q1	Y2 Q3	Revised number of case studies	Total number of country case studies was revised from 6-8 to 5 with USAID's approval.

PMI-001 - Assessing Community Based Information System guidance in PMI priority countries

Approved Task	Approved start date	Approved end date	Change	Justification
Settings brief	Y2 Q1	Y2 Q2	Canceled	This deliverable is being combined with the final report, as the team found insufficient information to complete the brief at this stage of the activity.

XB-002 - Country Operations Support

Approved Task	Approved start date	Approved end date	Change	Justification
Statement of Work - Ghana	Y1 Q4	Y2 Q3	Statement of work extended	This was originally due October 30, but identifying a consultant took longer than expected. USAID approved the extension to November 30 on October 25. (see GH-001 above)

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