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CHISU
COUNTRY HEALTH INFORMATION SYSTEMS AND DATA USE

CHISU Annual Report

Cross-Cutting Areas

October 2022–September 2023

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

Cover photos:

Top: CHISU Ghana

Bottom right: CHISU Eastern and Southern Caribbean

Bottom left: CHISU Indonesia

Strategic Objective 4: Local Organization Capacity Enhancement

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

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

Box 3: Strengthening local partner organizational capacity in Indonesia

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

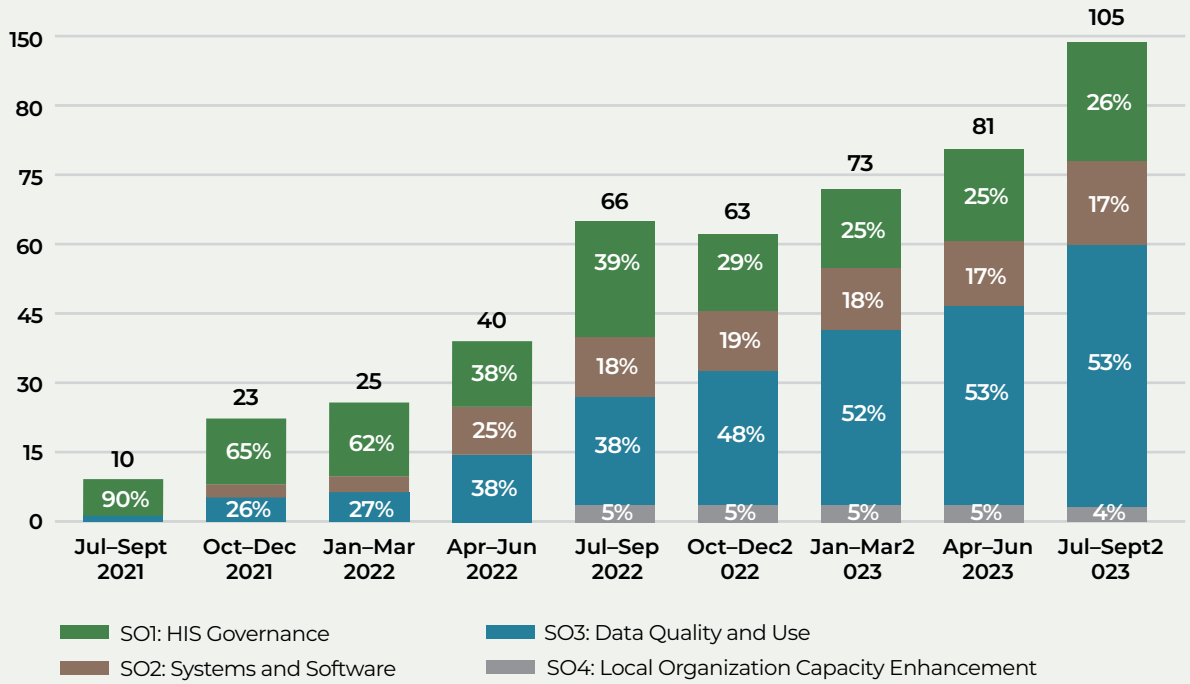
CHISU supports CDI's technical activities and organizational development goals through this partnership. One way that CHISU has done so is by supporting CDI in conducting an organizational capacity self-assessment in 2023. The self-assessment resulted in CDI identifying priority areas for developing organizational capacity—and CHISU worked together with CDI to create an action plan that consisted of a capacity-strengthening plan and a training plan based on those priority areas.

By the end of FY 23, CHISU carried out two of four capacity-strengthening workshops specified in the action plan, providing CDI with skills to develop more effective monitoring and evaluation tools and to develop project budgets and manage them in accordance with USAID standards and policies.

Cross-Cutting Area: Gender

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

Figure 5. Gender considerations reported, by strategic objective



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

Advocacy for inclusion and participation

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

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

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

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

Data disaggregation

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

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

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

Training and organizational capacity strengthening

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

Photo: CHISU

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

Photo: CHISU

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

In **Serbia**, CHISU supported the recruitment of a new employee at the IPH Batut who has been trained on the importance of integrating gender data into their analytical work and data visualizations. Additionally, CHISU is supporting the creation of architecture and standards for the Service for Public Health and is discussing with stakeholders how to ensure that gender considerations are incorporated.

Thought leadership

CHISU's core-funded activities have also been incorporating gender considerations and providing thought leadership around the intersection of gender and HIS. CHISU presented a poster on "Integrating gender in health information system strengthening: experiences and lessons from Serbia, Niger and Indonesia" at the Health Systems Research conference in Bogota, Colombia in November 2022. For International Women's Day in March 2023, CHISU published a blog post on how gender integration contributes to more equitable HIS, as well as short videos from CHISU team members highlighting the importance of integrating gender into program activities, strategic planning, and HIS learnings. CHISU also held a gender webinar on integrating gender into HIS strengthening. CHISU Resident Advisors and government counterparts from Burkina Faso, Ghana, and Indonesia shared their experiences.

Photo: CHISU

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

Cross-Cutting Area: Data Security

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

In **Ghana**, CHISU collaborated with OpenLabs to complete a three-week cybersecurity training with five GHS ICT unit staff. This training supported the development of cybersecurity manuals and a cybersecurity awareness and data protection training manual for GHS staff. This effort also led to the development of cybersecurity e-learning modules for GHS staff, which will further extend the cybersecurity training in a self-paced environment.

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

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

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

HIS Learning

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

Some CHISU teams held a Pause and Reflect meeting in tandem with strategic planning and work plan development meetings that were attended by external stakeholders from national governments, USAID Missions, and HIS partners. In **Indonesia**, CHISU held quarterly Pause and Reflect meetings to provide a periodic touchpoint to discuss both operational and strategic priorities. For example, the team used these sessions to have a common understanding of activity and deliverable timelines and to set a shared vision for the upcoming year.

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

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

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

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

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

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

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

Photo: CHISU

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

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

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

Health System Strengthening

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

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

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

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

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

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

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

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

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