# Data.FI Semi-Annual Performance Report 2022

October 2021–March 2022

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# Data.FI Semi-Annual Performance Report
2022

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This Semi-Annual Performance Report (SAPR) was developed by Data.FI's Monitoring, Evaluation, and Learning (MEL) unit and Data.FI's Communications/Knowledge Management team, in collaboration with Data.FI staff who reported on progress and generously shared their insights, ideas, and photos.

Cover photo: Masanja Lumaneja, Data.FI quality and measurement advisor at left in blue, with Technical Advisory Group members and national facilitators during a national stakeholders meeting held in Morogoro, Tanzania. The team was creating a Driver Diagram, a tool intended to help organize ideas and identify causes that contribute to the health issue being addressed. Photo by Data.FI Tanzania.

Data for Implementation (Data.FI) is a five-year cooperative agreement funded by the U.S. President's Emergency Plan for AIDS Relief through the U.S. Agency for International Development under Agreement No. 7200AA19CA0004, beginning April 15, 2019. It is implemented by Palladium, in partnership with JSI Research & Training Institute (JSI), Johns Hopkins University (JHU) Department of Epidemiology, Right to Care (RTC), Cooper/Smith, IMC Worldwide, Jembi Health Systems, and Macro-Eyes, and supported by expert local resource partners.



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# Abbreviations

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| **AEFI** | adverse events following immunization |
| **ANC** | antenatal care |
| **APPR** | Automated Partner Performance Reporting system |
| **ART** | antiretroviral treatment |
| **CARD** | Comprehensive Access Review Dashboard |
| **CDC** | Centers for Disease Control and Prevention |
| **CHISA** | Consolidated Health Informatics South Africa |
| **CHMT** | Council Health Management Team (Tanzania) |
| **CNLS** | Conseil National de Lutte contre le SIDA (National AIDS Control Agency of Burundi) |
| **CoP** | community of practice |
| **COP** | Country Operational Plan |
| **CPARP** | Community Pharmacy ART Refill Program |
| **cPIE** | COVID-19 post-introduction evaluation |
| **CRS** | Catholic Relief Services |
| **DAS** | Dirección de Área de Salud (Health Area Directorate, Guatemala) |
| **Data.FI** | Data for Implementation Project |
| **DCPEV** | Direction coordination programme élargie de vaccination (Expanded Immunization Program, Côte d'Ivoire) |
| **DHIS2** | District Health Information Software, Version 2 |
| **DREAMS** | Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe |
| **DQA** | data quality assessment |
| **DSNIS** | Directorate of the National Health Information System (Direction du Système National d'Information Sanitaire, Burundi) |
| **ECHO** | Efficiencies for Clinical HIV Outcomes |
| **ECR** | epidemic control room |
| **EMR** | electronic medical records |
| **EOC** | emergency operations center |
| **FMWA** | Federal Ministry of Women Affairs (Nigeria) |
| **GBV** | gender-based violence |
| **GHSC-PSM** | Global Health Supply Chain-Procurement and Supply Management Project |
| **GIS** | geographic information system |
| **HAT** | HIV/AIDS and Tuberculosis |
| **HCJ** | Health Connect Jamaica |
| **HI-CoP** | Health Informatics System Community of Practice |
| **HIS** | health information system(s) |
| **HP+** | Health Policy Plus Project |
| **HRD** | Human Resources Directorate (South Africa) |
| **HTS** | HIV testing services |
| **IIT** | interruption in treatment |
| **iMES** | Integrated Monitoring and Evaluation System |
| **IP** | implementing partner |
| **KP** | key population |
| **LGA** | Local Government Area (Nigeria) |

| | |
|---|---|
| **M&E** | monitoring and evaluation |
| **MEL** | monitoring, evaluation, and learning |
| **MER** | monitoring, evaluation, and reporting |
| **MHSP** | Ministère de la Santé et de l'Hygiène Publique (Ministry of Health and Public Hygiene, Côte d'Ivoire) |
| **MIS** | management information system |
| **ML** | machine learning |
| **MOH** | Ministry of Health |
| **M-RITE** | MOMENTUM Routine Immunization Transformation and Equity project |
| **MSPAS** | Ministerio de Salud Pública y Asistencia Social (MOH Guatemala) |
| **NACA** | Nigeria AIDS Control Agency |
| **NDOH** | National Department of Health (South Africa) |
| **NDR** | National Data Repository (Nigeria) |
| **NITDA** | National Information Technology Development Agency (South Africa) |
| **NOMIS** | National OVC Management Information System |
| **OHA** | Office of HIV/AIDS |
| **OVC** | orphans and vulnerable children |
| **PAHO** | Pan American Health Organization |
| **PEPFAR** | United States President's Emergency Plan for AIDS Relief |
| **PLHIV** | people living with HIV |
| **PNLS** | Programme National de Lutte contre le SIDA (National AIDS Control Program, Burundi) |
| **PNOEV** | Programme nationale de prise en charges des Orphelins et autres Enfants rendues Vulnérables du fait du VIH/Sida (National OVC Program, Côte d'Ivoire) |
| **PORALG** | President's Office – Regional Administration and Local Government (Tanzania) |
| **PSICA** | PEPFAR Strategic Information Capacity Assessment |
| **QI** | quality improvement |
| **READY** | Refining Evidence and Assumptions to Drive Yearly targets |
| **SANAC** | South African National Aids Council |
| **SESAL** | Secretaría de Salud (Ministry of Health, Honduras) |
| **SIGSA** | Sistema de Información Gerencial de Salud (Health Management Information System, Guatemala) |
| **SMOH** | State Ministry of Health |
| **TB** | tuberculosis |
| **TB DIAH** | TB Data, Impact Assessment and Communications Hub |
| **THIS** | TB/HIV Information System |
| **TROA** | Total Remaining on ART |
| **TWG** | technical working group |
| **UID** | unique identification |
| **UNAIDS** | Joint United Nations Programme on HIV/AIDS |
| **UPT** | urine pregnancy test |
| **USAID** | United States Agency for International Development |
| **VADI** | Vaccine Access and Delivery Initiative |
| **WAR** | West Africa Region |
| **WHO** | World Health Organization |

# Executive Summary

**Data.FI is a global project that helps countries strengthen and sustain access to key, high-quality data to accelerate and maintain HIV and COVID-19 epidemic control. We provide end-to-end solutions in the data ecosystem to achieve public health goals and protect clients' rights—from streamlining information needs to building sustainable and scalable data systems that support robust analysis and continuity of client care. We provide rapid insight for decision making and employ evidence-based approaches to ensure that data are used to inform meaningful change and save lives. We strengthen government capacity for health information system (HIS) governance and build local partner capabilities in line with the United States Agency for International Development's (USAID's) sustainability goals. We create solutions that can be scaled to achieve large-scale impact.**

Data.FI is a five-year (2019–2024) global, field-supported mechanism with a $180 million ceiling. Data.FI, funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR) through USAID, and COVID-19 relief authorization through USAID's Global Health Bureau, is implemented by a consortium of digital health and analytics organizations. It is led by Palladium, in partnership with the JSI Research & Training Institute, the Johns Hopkins University Department of Epidemiology, Right to Care, Cooper/Smith, IMC Worldwide, Jembi Health Systems, and Macro-Eyes.

During this reporting period (October 1, 2021–March 31, 2022), Data.FI implemented work in 20 countries and provided support to USAID at the central level. This report summarizes our work during the third year of implementation.

## Catalyzing Innovation through Breakthrough Solutions

**Data.FI is accelerating global health gains by catalyzing breakthrough solutions. We envision and create the opportunity for innovators to adapt and apply their solutions to the global health context—including through engaging the private sector—finding new ways to reach HIV epidemic control and mitigating the impact of COVID-19 through improved use of data.**

Data.FI is creating an interactive tool in Côte d'Ivoire that ingests data from multiple sources, calculates supply and demand-side constraints, and uses an optimization technique to generate a COVID-19 vaccine allocation per site. The goal of this tool is to enable the government to **maximize vaccine coverage in priority populations and minimize any vaccine wastage.** Also in Côte d'Ivoire, **Data.FI is using project resource partner Premise's network of lay data contributors to run a survey using mobile phones to capture real-time information on current public sentiment towards COVID-19 vaccination.**

In September 2021, in partnership with USAID's Office of HIV/AIDS, Data.FI launched a $100,000 challenge to identify innovative market segmentation strategies that utilize novel data sources and analytical approaches. The **Innovative Data Methods for Market Segmentation of HIV Services Challenge aimed to identify market segments of people living with HIV/AIDS who are willing and able to pay for HIV services.** During this reporting period,

U.S.-based Fraym and South Africa-based Palindrome Data were selected as the challenge winners from 32 submissions. Each of the winners was awarded U.S. $50,000 and conducted market segmentation analyses in Kenya and South Africa.

In Mozambique, Data.FI has deployed a machine learning (ML) model that predicts which clients are at greatest risk of interruption in HIV treatment (IIT). As part of this intervention, Data.FI is carrying out primary data collection to learn from the deployment of this live ML model from the user perspective and will use electronic medical records (EMR) data to assess the extent to which use of the model's outputs is leading to changes in IIT.

## Accelerating Data Analysis and Use

**Data.FI ensures that the end-user and decision maker are at the forefront of all that we do, and that information systems, data analyses, decision-support tools, and data review interventions are laser-focused to maximize uptake and impact of services.**

In Nigeria, Data.FI continued to increase demand for accurate and timely data for decision making. In addition to the national and state-level HIV epidemic control rooms, **eight state ministries of health (MOHs) are now holding routine weekly reviews of their state's COVID-19 surveillance data.** Also, the Federal Ministry of Women Affairs successfully instituted the National OVC Situation Room to provide a centralized coordination structure for monthly data review meetings among orphans and vulnerable children program stakeholders.

In 2021, we expanded the use of our performance-oriented data review methodology with the launch of the **data use and quality improvement initiative in Tanzania** in collaboration with UNICEF, and under the leadership of the President's Office Regional Administration and Local Governance (PORALG). During this performance period, in weekly situation room meetings, Council Health Management Teams from four councils used quality improvement methodologies to identify root causes and primary drivers of underperformance in the **number of women that attend an antenatal care visit within the first 12 weeks of their pregnancy.**

**In late 2021, Data.FI began work in Guatemala and Honduras to accelerate control of the COVID-19 pandemic through enhanced data review structures and data use.** In Honduras, we worked closely with the MOH to reactivate COVID-19 situation rooms that had been funded by the Pan American Health Organization (PAHO) in the two largest health regions in Honduras. In Guatemala, under the leadership of the Ministry of Public Health and Social Welfare and in collaboration with PAHO and the Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, Data.FI developed a logical framework to guide the national data use strategy for COVID-19 control, which includes a set of indicators agreed upon with key stakeholders involved in the country's pandemic response. Using these key indicators, Data.FI initiated a COVID-19 situation room in the Health Area Directorate of El Progreso.

Neil Jacobs, Data.FI senior HIS advisor, participates in a demonstration of Eswatini's Client Management Information System led by Susan Mkhabela, Data.FI training coordinator. The CMIS is a national EMR system that Data.FI will be supporting the Ministry of Health to maintain and enhance. Photo by Nena do Nascimento, Data.FI.

## Optimizing and Scaling Health Information Systems and Digital Solutions

**Data.FI optimizes HIS to track HIV service clients across the 95-95-95 continuum, improve continuity of care, and generate data for epidemic and program performance monitoring, following best practices in the software development lifecycle. We also track COVID-19 vaccines and vaccinations through optimized logistics management information systems and vaccine registries to increase coverage and reduce wastage.**

The **"Consolidated Health Informatics South Africa" (CHISA)** system **is an analytical platform integrating powerful features for data analysis and visualizations.** The analytics platform is built on **a national data warehouse through which disparate HIS in South Africa can be linked.** Data.FI has been building up CHISA in recent months to integrate outcomes and predictive analyses, including time to event (survival) analysis, Cox regression modelling for predicting outcomes of attrition (loss to follow-up and mortality), and predictive analysis for HIV testing services. Visualizations were also developed for PEPFAR monitoring, evaluation, and reporting (MER) indicators, including HIV testing, antiretroviral treatment (ART) initiation, active on ART, and viral load testing indicators.

In collaboration with the South Africa's National Department of Health (NDOH), we also expanded the **CHISA data warehouse to include a patient longitudinal record schema.** This schema

allows health care workers to access a patient's record as they move across facilities anywhere in the country. It is also used to power the deduplication report, which uses patient-matching algorithms to track patient movements between health facilities, and to link patient records between disparate datasets.

Data.FI's work in Nigeria over the last six months also focused on building on the gains made to date on the APPR platform. This included the development and publishing of the line-lister application on the Automated Partner Progress Reporting (APPR) platform to support uploading of deidentified patient line-lists on to the platform. **This is an analytical solution to support the shift from aggregate data analysis to in-depth client-line data analysis and visualization to provide insightful evidence for decision making.**

**Data.FI Nigeria also successfully conducted pilot testing of the enhanced National OVC Management Information System across six states** supported by six implementing partners (IPs) funded by USAID and the Centers for Disease Control and Prevention.

**In Burundi we are supporting PEPFAR and the government of Burundi's goals of enhancing the primary HIV EMR system in the country**—SIDAInfo. Over the past six months, Data.FI worked with the government and IPs to and scale up the **enhanced, web-based EMR system, together with a biometric unique ID solution. SIDAInfo now enables individual clients to have a unified record across all HIV service provision sites, improving quality of data and services delivered.** The project also continued to lead and coordinate the SIDAInfo technical support team, with the aim of transitioning the administration and the management of the EMR to the National AIDS Control Program (PNLS) and the Directorate of the National Information System (DSNIS).

## Improving Data Sources

**Data.FI collaborates with USAID partners to establish gold standard data quality and data management practices and supports implementing partners and governments to responsibly store and use data to avoid breaches of sensitive information.**

To better understand existing data quality systems and processes among PEPFAR IPs in the West Africa Region, Data.FI organized an assessment among USAID-supported IPs across eight countries. Findings showed that most IPs surveyed have strong data quality assurance and improvement processes, but face external challenges and have limited management and political support to strengthen data quality. In response, **we are co-organizing a West Africa Community of Practice for Data Quality with USAID to share best practices and lessons learned among IPs.**

**Data.FI Nigeria successfully conducted data quality assessments on four HIV indicators across 39 facilities in seven USAID-supported states** throughout the country. The Data.FI team and health facility staff reviewed the monitoring and evaluation (M&E) systems, identified best practices, and developed joint action plans and recommendations with the IPs to improve existing systems for better reporting in subsequent funding cycles.

In Burundi, Data.FI is training and coaching members of the PNLS M&E team and HIV partners to use DHIS2 and data analysis tools to identify data quality during **monthly PNLS-led data quality analysis meetings, which bring together different partners to identify data quality issues and action findings at the district level.**

## Strengthening Local Partners and Governance

**Data.FI strengthens host country government capacity to develop and maintain sustainable information systems and ensure that local partners are able to contribute to a functioning and country-led HIS and data ecosystem.**

**In South Africa, Data.FI is working closely with the NDOH to transition the support and maintenance of CHISA,** which includes longitudinal and cohort HIV data. In line with the capacity-building and sustainability plan developed during the Country Operational Plan 2020 (COP20) period, the Data.FI South Africa team is working to ensure the ongoing capacitation of the NDOH. Data.FI is also verifying that all current technical and analytical product and use case documentation is uploaded onto the NDOH Confluence site. Additionally, Data.FI continues work to transition the e-learning platform called the Knowledge Hub to the NDOH, conducting training with ICT and NDOH administrative staff, preparing system documentation materials to serve as references for the NDOH staff, and creating a comprehensive operational budget.

**In Burundi, Data.FI is collaborating with multilateral donors and IPs to support the MOH to conduct the review process for the National Strategic Plan (2018–2022) and to develop the new one (2023–2027).** Data.FI is also supporting **PROGISSA, a new government structure that is coordinating eHealth within the MOH to ensure the HIV information system applications and software are integrated in Burundi's overall HIS architecture.**

In Tanzania, the COVID-19 vaccine rollout has lagged in comparison to other countries in the region. **To strengthen the government's COVID-19 response, in February 2022 Data.FI supported a mini COVID-19 vaccine post-introduction evaluation** (mini-cPIE) **workshop in Tanzania to examine the available COVID-19 vaccine data and develop recommendations for improving the government vaccine program.**

**To support country COVID-19 vaccine responses, Data.FI has been working in Nigeria and El Salvador to document the current practices for recording, reporting, sharing, and using data on adverse events following immunization (AEFI).** Effective spontaneous reporting of AEFIs is the first step to making sure that vaccine products are safe and are being safely administered. Over the past few months, the team has completed the assessment protocol and will begin collecting data in the coming months, following government authorization and ethics review board approval.

We are proud to work with our extraordinary consortium of partners, helping countries strengthen their health information ecosystems to improve prevention, testing, treatment, vaccine, laboratory, and logistics services to end the HIV epidemic and to combat COVID-19.

# Introduction

**Data.FI is a global project that helps countries strengthen and sustain access to key, high-quality data to accelerate and maintain HIV and COVID-19 epidemic control. We work across all population groups and intervention areas to identify clients at risk and link them to testing, prevention, and treatment services. To do this, we leverage expertise in program implementation, measurement, digital health, data science, and data use, to help the United States Agency for International Development (USAID) and partners ask better questions, look at unsolved problems in new ways, and pivot programming to reach epidemic control faster.**

As the COVID-19 pandemic continues to evolve, and as vaccines are more widely available, there is increasing focus on ensuring that vaccines are optimally allocated and used and that priority populations receive multiple doses. Data.FI is assisting with the COVID-19 response by supporting countries to identify and address barriers to creating, optimizing, and utilizing data and data systems for successful vaccine delivery.

How do we support countries whose health information systems (HIS) are at different levels of maturity? Through our experienced partnership, we provide end-to-end solutions in the data ecosystem that achieve public health goals and protect clients' rights—from transforming routine data into visualizations that highlight a health system's performance, to building sustainable and scalable systems that support robust data analysis and continuity of client care. Data.FI works across


In Côte d'Ivoire, Data.FI is developing a dynamic COVID-19 vaccine allocation planning tool to maximize vaccine coverage in priority populations and minimize vaccine wastage. A woman in Côte d'Ivoire receives a COVID-19 vaccine at a mobile vaccination site in the capital, Abjdjan. Photo by Anubhuti Mishra, senior technical advisor for data science, Data.FI.

all technology platforms, aligning our interventions to each country's unique data and information system landscape. We create tools, policies, and procedures for partners who collect and manage data, offering an overarching vision of how data should and can be used responsibly. We create solutions that can be scaled.

We provide rapid insight for decision making, using advanced analytics supported by fit-to-purpose technologies. We help USAID and partners diagnose performance and public health challenges to best focus resources. We combine traditional data sources with non-traditional data sources, such as satellite imagery and commercial data, to fill data gaps and inform HIV and COVID-19 interventions. We apply advanced modeling techniques to illuminate unseen patterns, providing stakeholders with timely and actionable information.

We develop and employ evidence-based approaches to ensure that data are used to inform meaningful change and save lives. This begins with defining an analytical framework for decision making and includes aligning data needs and employing measurement tools and frameworks. We work with USAID and partners to improve data sources, hone analytical skills, and catalyze program pivots.

We strengthen government capacity for HIS governance and build local partner capabilities in line with USAID's local partner transition goals. Data.FI leverages our existing network of in-country relationships to build government trust, coordinate stakeholders, and expand the pool of local partners able to respond to HIV and COVID-19 and strengthen pandemic preparedness for global health security.

## PROJECT SCALE

Data.FI is a five-year global project (2019–2024) funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR) and USAID. Data.FI is a consortium of organizations with expertise in digital health and analytics. It is led by Palladium, in partnership with the JSI Research & Training Institute, the Johns Hopkins University Department of Epidemiology, Right to Care, Cooper/Smith, IMC Worldwide, Jembi Health Systems, and Macro-Eyes. The project is a USAID field-supported mechanism, with a $180 million ceiling.

During this reporting period (October 1, 2021–March 31, 2022), Data.FI implemented work in Burundi, the Central America Region (El Salvador, Guatemala, Honduras, Panama), Côte d'Ivoire, Guatemala, Honduras, Jamaica, Malawi, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Uganda, the West Africa Region (Benin, Burkina Faso, Ghana, Liberia, Mali, Senegal, Sierra Leone, Togo), and Zimbabwe. The project made important progress enhancing digital HIS, strengthening data management and data availability through digitization of information systems for COVID-19 vaccination and surveillance, supporting data analytics that pinpoint inefficiencies in HIV care and treatment cascades, developing data standards and structures to ensure quality in electronic medical records (EMRs), and supporting local partners to use data for decision making. This report summarizes our work during this reporting period.

## REPORT STRUCTURE

We present our achievements over the past six months by highlighting our work across the following impact areas:

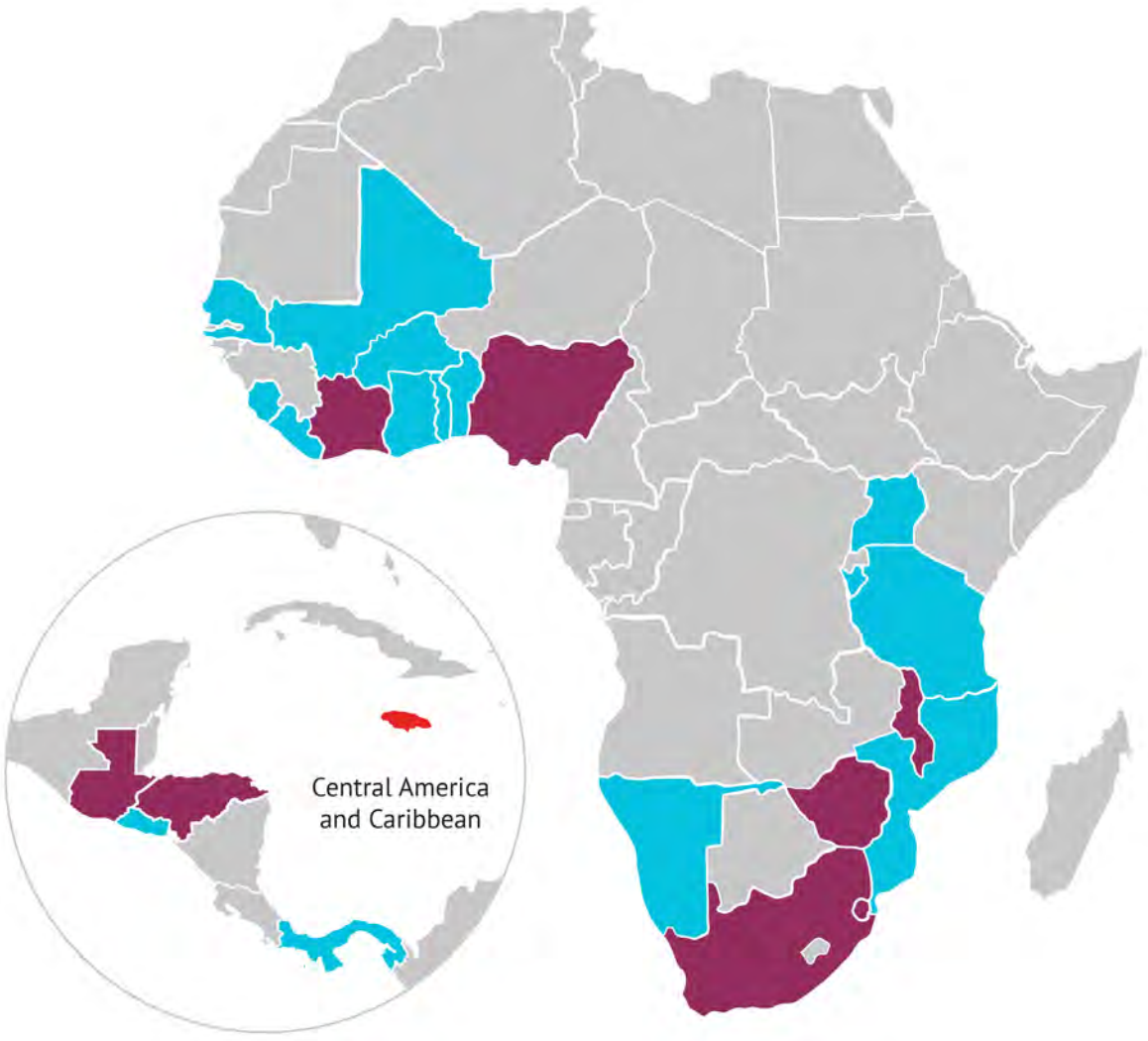
- **Catalyzing Innovation through Breakthrough Solutions**
- **Accelerating Data Analysis and Use**
- **Optimizing and Scaling Health Information Systems and Digital Solutions**
- **Improving Data Sources**
- **Strengthening Local Partners and Governance**

We also provide an update on our efforts to support gender equality and our global communications footprint.

A financial summary, a table of project indicator results achieved, and a list of Data.FI products are provided in the appendices.

# Data.FI's Reach

Data.FI is scaling digital, analytical, and data use solutions. We worked in 20 countries in this reporting period to improve HIV and COVID-19 outcomes.



DATA.FI IMPACT AREA

# Catalyzing Innovation through Breakthrough Solutions

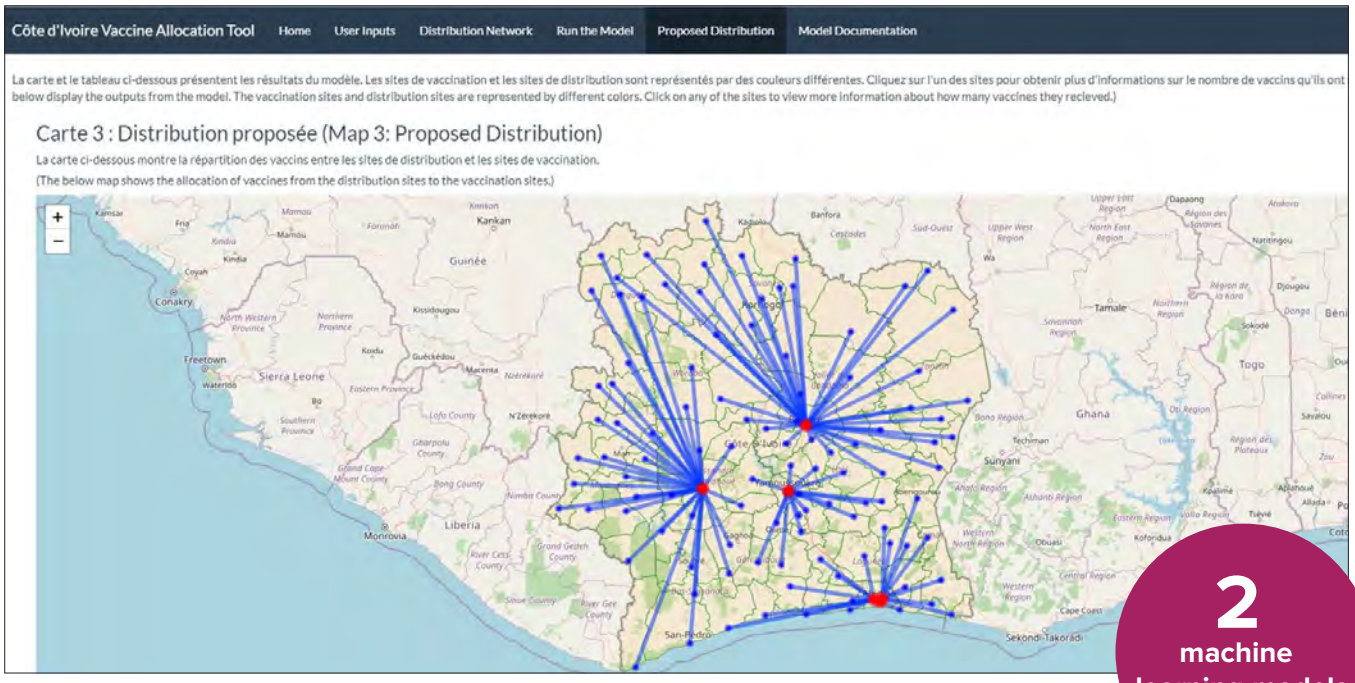
Despite significant advancements, the HIV community has made uneven progress in meeting the 95-95-95 targets and the COVID-19 pandemic has brought new challenges, requiring new ways of working toward meeting global health goals. Further, the U.S. government's ambitious global COVID-19 vaccination agenda demands innovations that bring efficiency, precision, and real-time data. To catalyze positive and equitable health outcomes in HIV and COVID-19, Data.FI leverages thought leadership and cutting-edge technologies across our extraordinary consortium of partners.

Together, we are working to create and source novel solutions and forge new strategic partnerships to address the challenges that impede countries from meeting their health goals. Some highlights from this past six months are provided below.

## DYNAMIC COVID-19 VACCINATION TOOL AND REAL-TIME COVID-19 VACCINE SENTIMENT TOOL

Côte d'Ivoire must rapidly vaccinate priority populations against COVID-19 across the country, while managing complex infrastructural, supply, and


A mural promoting safe drinking water and vaccination in Monrovia, Liberia. Photo by the European Union Civil Protection and Humanitarian Aid.



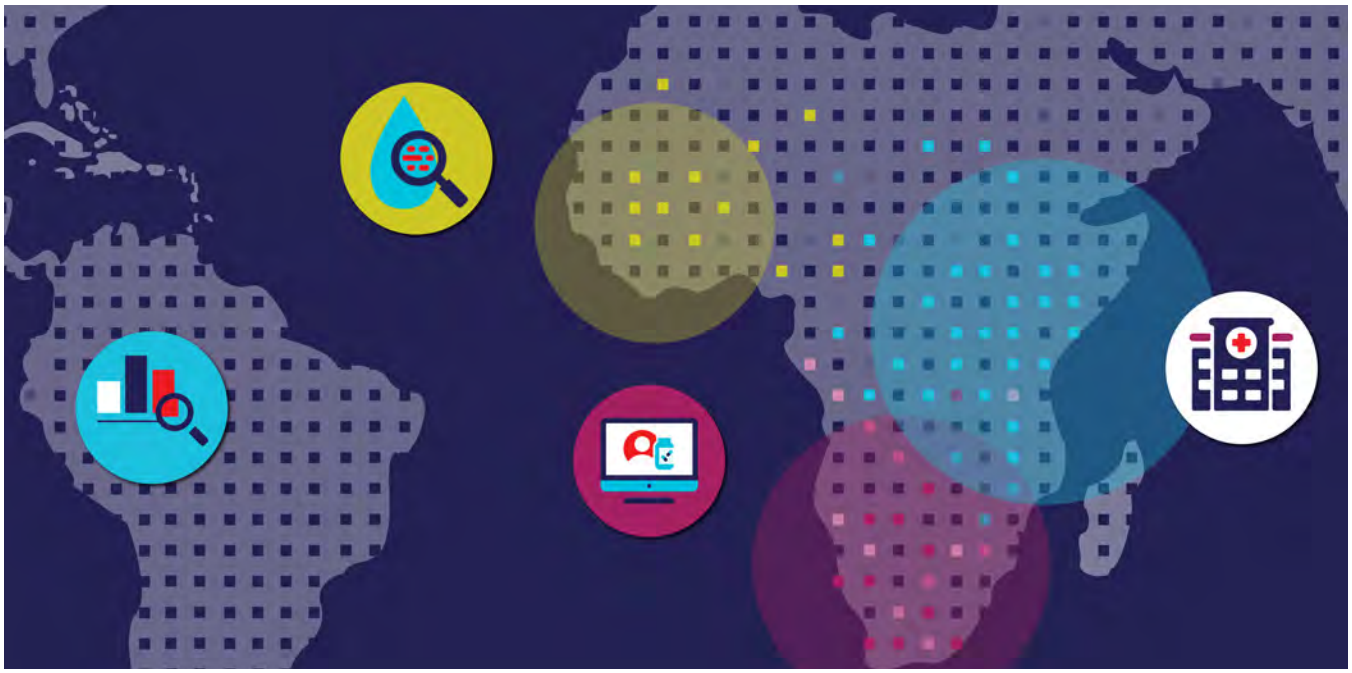

**2 machine learning models deployed**

Data.FI is working with with the Ministry of Health in Côte d'Ivoire to create an interactive vaccine allocation tool, shown here.

demand constraints. This requires detailed planning and targeted allocation of limited resources, with flexibility to adapt as conditions change and difficulties arise. To support the country to better allocate COVID-19 vaccines, Data.FI is creating an interactive tool that ingests data from multiple sources, calculates supply and demand-side constraints, and uses an optimization technique to generate vaccine allocations per site. The goal of this tool is to enable the country's Expanded Immunization Program (Direction coordination programme élargie de vaccination, or DCPEV) to **maximize vaccine coverage in priority populations and minimize any vaccine wastage.** The tool is currently being refined and will be tested before being finalized.

One of the greatest challenges to universal uptake of the COVID-19 vaccine is constantly shifting public sentiment towards COVID-19 vaccination, and related behavioral and social drivers of vaccine demand and uptake. Vaccine sentiment can evolve due to changes in vaccine mix and availability, convenience, perceived risk of COVID-19, emerging rumors, and shifts in trust in government and other leaders. To address this, **Data.FI is implementing a survey in Côte d'Ivoire using project resource partner Premise's network of lay data contributors who use mobile phones to capture real-time information on current public sentiment towards COVID-19 vaccination.** The use of Premise's platform will enable far more rapid results than traditional survey methods—allowing public health professionals in the country to better craft appropriate and timely COVID-19 vaccine messaging to increase vaccine uptake and save lives.

Women at a school in Mamakoffikro, Côte d'Ivoire. Data.FI is supporting integration of OVC and DREAMS data into one database in Côte d'Ivoire to reduce the risk for duplication of records of vulnerable children and their families and to strengthen information for national-level decision making. Photo by Carina Durand, Global Partnership for Education.



## ENGAGING THE PRIVATE SECTOR

PEPFAR has embraced a whole-of-market approach to put HIV treatment services on a more sustainable financial footing. To that end, in September 2021 Data.FI, in partnership with USAID's Office of HIV/AIDS (OHA), launched a $100,000 challenge to identify innovative market segmentation strategies that utilize novel data sources and analytical approaches. The **Innovative Data Methods for Market Segmentation of HIV Services Challenge aimed to identify market segments of people living with HIV/AIDS (PLHIV) who are willing and able to pay for HIV services.**

Data and analytics experts from Data.FI and OHA selected U.S.-based Fraym and South Africa-based Palindrome Data as the challenge winners from 32 submissions. Each of the winners were awarded $50,000 and conducted market segmentation analyses using data from Kenya and South Africa. Each developed profiles that incorporate demographic and geographic dimensions to understand the market size and characteristics of PLHIV willing and able to pay for private HIV treatment services. Both analyzed data using machine learning (ML) to identify characteristics that differentiate groups of clients for HIV services. These analyses can be used to advance PEPFAR's understanding of how to expand market diversification, facilitate private sector engagement, and maximize impact for epidemic control.

In August of 2021, USAID engaged Data.FI to support the Jamaican government's COVID-19 response. Working closely with the Ministry of Health and Wellness and with the multiple partners supporting the COVID-19 response, **Data.FI is providing technical support to private sector partner Health Connect Jamaica (HCJ)—the organization responsible for managing the administration of COVID-19 vaccines through a subset of private sector clinicians** in the country. Specifically, **Data.FI is adapting the open-source OpenLMIS (Logistics Management Information System) platform for the Jamaican private sector context** and providing technical guidance and support to HCJ on the most appropriate solution to tracking vaccines doses and vaccine administration. This technical support will be critical to ensuring that HCJ is able to successfully administer and track COVID-19 vaccines administered on the island.

## DEPLOYING MACHINE LEARNING MODELS TO ADDRESS INTERRUPTION IN HIV TREATMENT

In Mozambique, Data.FI deployed a ML model that predicts which clients are at greatest risk of interruption in HIV treatment (IIT). The software module has been installed at three sites of the USAID service delivery partner Efficiencies for Clinical HIV Outcomes project (ECHO). The module can now generate client risk scores of IIT in real time. It will be used by health workers to prioritize their long list of clients in need of community outreach to support treatment retention, thus maximizing the use and impact of their community outreach resources. As part of this intervention, Data.FI is carrying out primary data collection to learn from the deployment of this live ML model from the user perspective and will use EMR data to assess the extent to which use of the model outputs is leading to changes in IIT.

A woman farmer at home with livestock in Milange, Mozambique. Photo by ILRI/Stevie Mann.

A psychosocial support officer offers counseling to reinforce adherence to HIV treatment in Tete, Mozambique. Data.FI has deployed a machine learning model in Mozambique to identify clients at risk of interrupting HIV treatment. Photo by USAID/OHA.

DATA.FI IMPACT AREA

# Accelerating Data Analysis and Use

**USAID missions need frequent and high-quality data to monitor global health investments on a continuous basis for accountability and oversight, and to plan and manage the programs they support. Governments and health program managers require data to measure progress against targets, allocate limited resources to reach the populations most in need, rapidly course-correct if programs are underperforming, and determine whether they are addressing the most urgent needs of people affected by or at risk of HIV and COVID-19.**

We improve systems, analytic platforms, data sources, and institutionalize data use to support USAID, implementing partners (IPs), and local governments to glean insights from data on a range of HIV and COVID-19 services. Data.FI synthesizes data across multiple sources and develops user-centered decision-support tools and dashboard-enabled data visualizations to inform action. We support the institutionalization of processes and systems for continuous data review, and train staff so that they can proactively address challenges and make programmatic changes to achieve meaningful impact.

A member of the Regional Health Management Team from the Dar es Salaam Region shows antenatal care data to the Regional Medical Officer during a facilitated discusssion at an orientation meeting in February 2022 in Morogoro. Participants met to create an action plan for how to utilize the regional situation rooms. Photo by Data.FI Tanzania.

Mother holds child in northeast Nigeria. Photo by Samuel Ochai, European Union Civil Protection and Humanitarian Aid in Nigeria.

## PERFORMANCE IMPROVEMENT THROUGH DATA REVIEW

First established in Nigeria, Data.FI's epidemic control room (ECR)—or "situation room"—approach allows decision makers to access data across disparate sources in one technology-enabled platform to enable near real-time program quality improvement. Weekly analysis of performance against targets for priority indicators has improved transparency and enabled continuous feedback and learning for ongoing program adaptation, facilitating accountability for course corrections.

During this reporting period in **Nigeria, Data.FI continued to increase demand for accurate and timely data for decision making. These investments are resulting in growing interest to expand this approach to other disease areas.**

In 2020, Data.FI supported state governments to set up COVID-19 emergency operations centers (EOCs) in Adamawa, Akwa Ibom, Bauchi, Bayelsa, Cross River, Edo, Kano, Niger, and Oyo States, coordinating data reviews for strategic planning around the COVID-19 response. When funding for the EOCs ended in late 2020, data review activities at the EOCs were drastically reduced, but with USAID support in 2022, Data.FI successfully reactivated them across eight states. This means that state ministries of health (MOHs) and other critical stakeholders are now once again **holding routine weekly reviews of their state's COVID-19 surveillance data and making decisions based on their discussions of what they observe. This participatory, dashboard-enabled process allows them to identify outbreaks and address gaps in their COVID-19 response.**

**6**
**demonstrated instances of data use**

Data.FI training at a Data.FI-supported COVID-19 Emergency Operations Center in Kano. Photo by Data.FI Nigeria.


USAID/Nigeria Mission Director Anne E. Patterson joined FMWA Dame Pauline Tallen to initiate the National OVC Situation Room at the MOH. Photo by Data.FI Nigeria.

The director general of the Taraba State Agency for the Control of AIDS (TACA) visited the Akwa Ibom situation room to learn about Data.FI's approach to data review and the coordination structures that support a collaborative approach. Other participants included stakeholders supporting HIV care and treatment and OVC programs. Photo by Data.FI Nigeria.

During this reporting period, Data.FI worked with the Federal Ministry of Women Affairs (FMWA) to successfully institute the National OVC Situation Room to support orphans and vulnerable children (OVC) and their families throughout the country. Like the HIV situation rooms, the OVC situation room provides a centralized coordination structure for monthly data review meetings among OVC program stakeholders—ministry departments and agencies, IPs, development partners, and community organizations.

**Driven by the impactful experiences from the Akwa Ibom State situation room for HIV, the Akwa Ibom State Ministry of Health (SMOH) is exploring the use of its ECR to review data in other disease areas—tuberculosis, malaria, and neglected tropical diseases**—with the involvement of relevant stakeholders. In addition, Data.FI is now helping the National AIDS Control Agency (NACA) to set up a "Command Center" situation room at NACA offices and a situation room in Taraba State.


Fishing boats in Akwa Ibom, Nigeria. Photo by Data.FI Nigeria.

CLOSER LOOK

## Data Use and Quality Improvement to Save Mothers' and Childrens' Lives in Tanzania

In 2021, we expanded the use of our performance-oriented data review methodology with the launch of the **data use and quality improvement (QI) initiative in Tanzania.** In collaboration with UNICEF, and under the leadership of the President's Office Regional Administration and Local Governance (PORALG), Data.FI is operationalizing technology-enabled situation rooms for data review in selected regions and councils, leveraging Tanzania's Integrated Monitoring and Evaluation System (iMES) platform for data analytics and display, and institutionalizing a sustainable approach for data review and use by decision makers.

In weekly situation room meetings, Council Health Management Teams (CHMTs) from four councils—Chamwino District Council, Dodoma City Council, Kinondoni Municipal Council, and Temeke Municipal Council—used quality improvement methodologies to identify root causes and primary drivers of underperformance in the **number of women that attend an antenatal care (ANC) visit within the first 12 weeks of their pregnancy.** ANC booking before 12 weeks is important for detecting, managing, and treating pregnancy-related complications and supports women's decision making on the place and choice of delivery. QI tools such as the Driver Diagram were used to facilitate a participatory group problem-solving approach, ensuring that each CHMT members' focus area (such as supply chain, finance, human resources, laboratory and pharmacy services) was incorporated in designing the improvement initiative.


To date, Data.FI has formally handed over seven council-level situation rooms with equipment to PORALG, and documented how data were used to review performance, set performance goals, and prioritize actions. Here, Kinondoni CHMT members discuss top-line monitoring, evaluation, and reporting (MER) indicators for prevention of maternal-to-child transmission of HIV in the situation room in Kinondoni Municipal Council, Tanzania. Photo by Data.FI Tanzania.

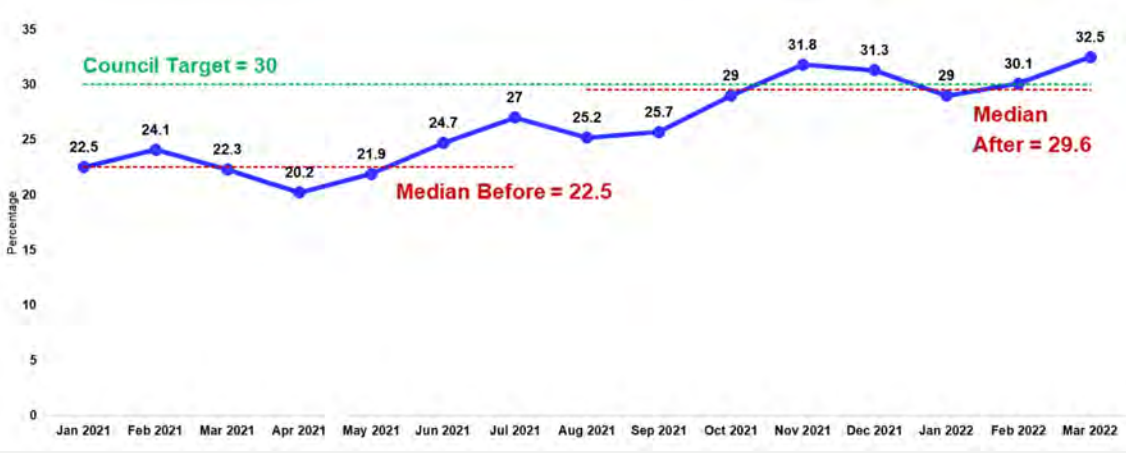
Situation room under construction in Chamwino District, Tanzania. Photo by Data.FI Tanzania.

Members of the Chamwino Council Health Management Team review data in the situation room established by Data.FI in the Dodoma Region. Photo by Data.FI Tanzania.

## Identifying and Addressing Root Causes to Improve Care

In August 2021, the CHMT in Kinondoni Municipal Council observed that the Council performance for early ANC booking was 25 percent, which is lower than the national target of 40 percent. It then set a performance objective of 30 percent for this indicator to be attained by June 2022. The CHMT identified root causes that contributed to the low rate of ANC booking before 12 weeks, including low awareness among women of the importance of early ANC, poor screening for suspected pregnancy among eligible women of childbearing age, and a limited number of urine pregnancy tests (UPTs) performed.

The CHMT then tested the change idea of strengthening linkage of women with UPT-positive tests from laboratory to ANC services to increase the rate of early ANC booking. They promoted screening for pregnancy among women of childbearing age and strengthened coordination among pharmacists, laboratory personnel, and ANC clinicians to improve referral processes from laboratory to ANC. As a result, the percentage of pregnant women attending an ANC visit within 12 weeks of their pregnancy increased to a high of 32 percent in November 2021, although progress has been uneven. CHMT members continue to review the data and explore how they can maintain progress in this critical area.




**Percentage of pregnant women attending first ANC visit before 12 weeks in Kinondoni before and after Data.FI-supported situation room interventions.**

## DECISION SUPPORT TOOLS

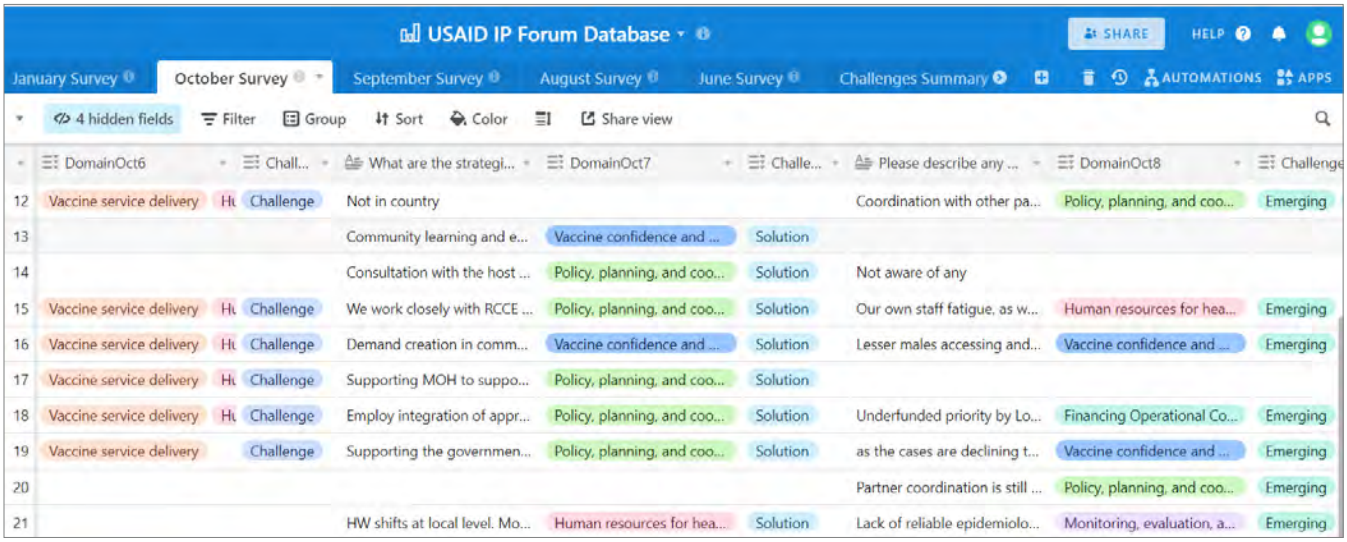
Decision support tools, such as dashboards and optimization models, help to transform data into digestible information for program planning, targeting, and resource allocation. Data.FI works with stakeholders to first understand priority questions, and then to define system architecture, map data sources, transform data, and create tools to meet identified needs—creating efficiencies using technology.

In **Côte d'Ivoire,** data on COVID-19 vaccination uptake and on vaccination side effects are being collected by health care workers daily using Excel spreadsheets and paper-based forms. These data are aggregated and shared with the national-level Ministry of Health and Public Hygiene (Ministère de la Santé et de l'Hygiène Publique, or MHSP) daily. Given the scale of the COVID-19 vaccine program in the country, and the need for timely data for decision making, **Data.FI is working with the MHSP and other stakeholders to develop an automated, scalable system that supports COVID-19 vaccine reporting, visualization, and analysis for decision making.** Data.FI has gathered data on the systems currently in use and held discussions with key stakeholders on the best way forward. They agreed on using the District Health Information Software Version 2 (DHIS2), the country's existing HIS, for COVID-19 vaccine reporting at the district level. Data.FI is now working to design dashboards and develop prototypes based on indicators of interest.

**359**
**data review meetings held**

In **Nigeria, Data.FI developed the first version of the Refining Evidence and Assumptions to Drive Yearly targets (READY) application.** Target setting for the HIV MER indicators is time-consuming for USAID/Nigeria. The READY app is designed to automate target setting for USAID and the Centers for Disease Control (CDC) partners based on parameters—like volume of facilities, HIV burden, surge states categorization, and saturation of state funding levels. The app then generates targets for age and sex disaggregates of MER indicators at facility, local government area (LGA), state, partner, and national levels—making the target-setting process easy and dynamic based on a projection methodology. Using

A woman carrying cassava, an important food staple in Côte d'Ivoire. Data.FI is working with the the MHSP and other stakeholders to develop an automated, scalable system that supports COVID-19 vaccine reporting, and data analysis and visualization. Photo by UN-REDD Programme.




| | DomainOct6 | Chall... | What are the strategi... | DomainOct7 | Challe... | Please describe any ... | DomainOct8 | Challenge |
|---|---|---|---|---|---|---|---|---|
| 12 | Vaccine service delivery | Challenge | Not in country | | | Coordination with other pa... | Policy, planning, and coo... | Emerging |
| 13 | | | Community learning and e... | Vaccine confidence and ... | Solution | | | |
| 14 | | | Consultation with the host ... | Policy, planning, and coo... | Solution | Not aware of any | | |
| 15 | Vaccine service delivery | Challenge | We work closely with RCCE ... | Policy, planning, and coo... | Solution | Our own staff fatigue, as w... | Human resources for hea... | Emerging |
| 16 | Vaccine service delivery | Challenge | Demand creation in comm... | Vaccine confidence and ... | Solution | Lesser males accessing and... | Vaccine confidence and ... | Emerging |
| 17 | Vaccine service delivery | Challenge | Supporting MOH to suppo... | Policy, planning, and coo... | Solution | | | |
| 18 | Vaccine service delivery | Challenge | Employ integration of appr... | Policy, planning, and coo... | Solution | Underfunded priority by Lo... | Financing Operational Co... | Emerging |
| 19 | Vaccine service delivery | Challenge | Supporting the governmen... | Policy, planning, and coo... | Solution | as the cases are declining t... | Vaccine confidence and ... | Emerging |
| 20 | | | | | | Partner coordination is still ... | Policy, planning, and coo... | Emerging |
| 21 | | | HW shifts at local level. Mo... | Human resources for hea... | Solution | Lack of reliable epidemiolo... | Monitoring, evaluation, a... | Emerging |

Data.FI developed a dynamic database using Airtable for USAID and M-RITE users to support their data needs for organizing the USAID COVID-19 Vaccine Technical Assistance Implementing Partners Forum and to document learning from country experiences in the global vaccine response.

the READY application for target setting will promote effective tracking of the HIV program for epidemic control in Nigeria. Data.FI is currently working on testing the application with the USAID team in country prior to full rollout.

**Data.FI is co-leading USAID's COVID-19 Vaccine Technical Assistance Implementing Partner Forum,** with USAID and the USAID-funded MOMENTUM Routine Immunization Transformation and Equity (M-RITE) project. This bidirectional platform for sharing of updates, experiences, and ideas across USAID and partners is designed to increase the effectiveness of USAID's COVID-19 vaccine investments. Data.FI's role is to support forum planning and provide valuable insights on how the vaccine response is rolling out globally, based on bimonthly participant surveys. Data.FI developed a dynamic database using Airtable to enable USAID and M-RITE to easily access information on the IP Forum, its participants, and all forum survey results. Data.FI has held two demonstration trainings on the database with the USAID and Vaccine Access and Delivery Initiative (VADI) teams and will soon offer a formal training on the system for USAID and M-RITE users.

**28**
**analytical solutions**

## BUILDING COUNTRY CAPACITY IN THE COVID-19 RESPONSE BY ACCELERATING DATA USE

In late 2021, Data.FI began work in Guatemala and Honduras to accelerate control of the COVID-19 pandemic through enhanced data review structures and data use.

In Honduras, we worked closely with the MOH (the Secretaría de Salud, or SESAL) to reactivate COVID-19 situation rooms that had been funded by the Pan American Health Organization (PAHO) in the two largest health regions in Honduras. We reviewed the national response plan to identify existing indicators and key information gaps for monitoring progress in the COVID-19 response and to gain a better understanding of challenges. Then, through a participatory in-person workshop with more than 30 key stakeholders from SESAL, we developed a logic framework and data use strategy. The comprehensive analysis made possible in the COVID-19 situation rooms, coupled with the focused methodology for incorporating QI techniques within the enhanced data review, is expected to contribute to improved case-detection and referral to care services.

In Guatemala, under the leadership of the Ministry of Health (Ministerio de Salud Pública y Asistencia Social, or MSPAS) and in collaboration with PAHO and the Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, Data.FI developed a logical framework to guide the national data use strategy for COVID-19 control, which includes a set of key indicators agreed upon with key stakeholders involved in the country's pandemic response. Using these key indicators, Data.FI initiated a COVID-19 situation room in the Health Area Directorate (Dirección de Área de Salud, or DAS) of El Progreso and provided technical expertise to launch five separate technical working groups (TWGs) for epidemiology, case management, laboratory, vaccination, and supply chain management.

As part of the health system strengthening recommendations issued by Data.FI, the project facilitated a review of national COVID-19 dashboards, which was led by the MSPAS Epidemiology and Health Information Systems Units (Sistema de Información Gerencial de Salud, or SIGSA). The outcome of this review process was a set of recommendations to improve the functioning of the dashboards and subsequent analytics. These efforts will serve to strengthen the overall health information ecosystem in Guatemala, and strengthen access to reliable, timely data for the COVID-19 response.

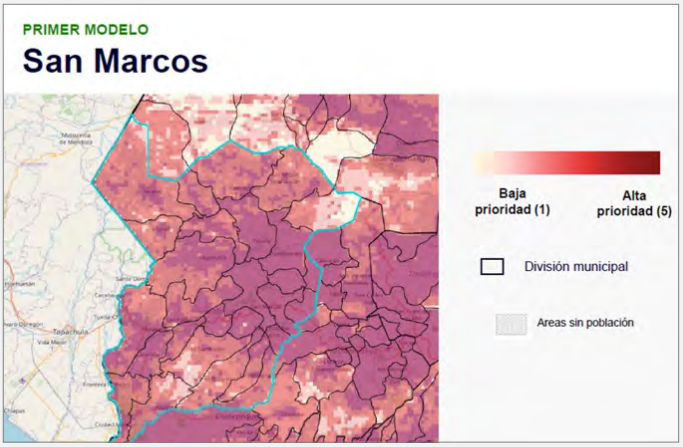
Woman receives a COVID-19 vaccine in Guatemala. Photo by Paulina Garbero for the Health, Education and Policy Plus (HEP+) Project.


Dr. Francy Mejia, technical advisor, Data.FI Honduras, facilitated the first data review meeting for the San Pedro Sula metropolitan health region as part of the national COVID-19 Situation Room Strategy. Photo by Data.FI Honduras.

## HIGH-IMPACT ANALYSES

**Data.FI supported Guatemala's COVID-19 Vaccination Committee to develop hyperlocal maps to inform the allocation of vaccines in the country.** The committee defined two strategies (1) urgent vaccination of populations with established interaction with the health system to ensure available vaccine is used before expiration and (2) strategic vaccination of the most vulnerable and hard-to-reach populations such as indigenous peoples in rural locations.

Data.FI conducted a geospatial analysis and developed two sets of maps, which are being used to promote the equitable distribution of the COVID-19 vaccine in Guatemala based on agreed upon indicators with MSPAS (e.g., population density, and access to health services).



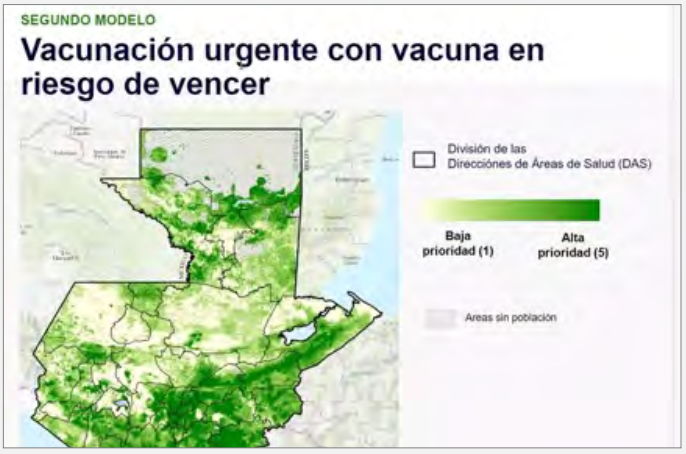

Using geospatial analysis techniques, Data.FI created this hyperlocal map showing how the long-term distribution of vaccines will benefit vulnerable communities in Guatemala.

Indigenous woman at a market in Guatemala. Photo by RS, courtesy of Flickr Creative Commons.


The Minister of Health of Guatemala, Dr. Francisco Coma, appeared on national television to discuss the country's efforts to accelerate its COVID-19 vaccine response, using hyperlocal maps developed by Data.FI.

The first set of maps focuses on how the long-term distribution of vaccines will benefit vulnerable communities in Guatemala, and the second set depicts distribution of vaccines about to expire. The vaccine allocation maps and Excel files were transferred to the MSPAS authorities, and are being provided to the leadership of the DAS to help them to carry out the time-sensitive distribution of vaccines among the municipalities.

**The Minister of Health used datapoints from the geospatial maps during a television interview that was broadcast nationwide to describe MSPAS's strategy to intensify vaccine distribution in Guatemala, especially among selected departments and municipalities where vaccine coverage rates were low.** The Minister also used the results of these analyses to develop an official memo from the DAS to expand vaccine distribution.




This map depicts the distribution of vaccines in Guatemala that are about to expire, with the darker green areas demonstrating those at greatest risk of expiration. This map will support the Ministry of Health to prioritize time-sensitive vaccine distribution.

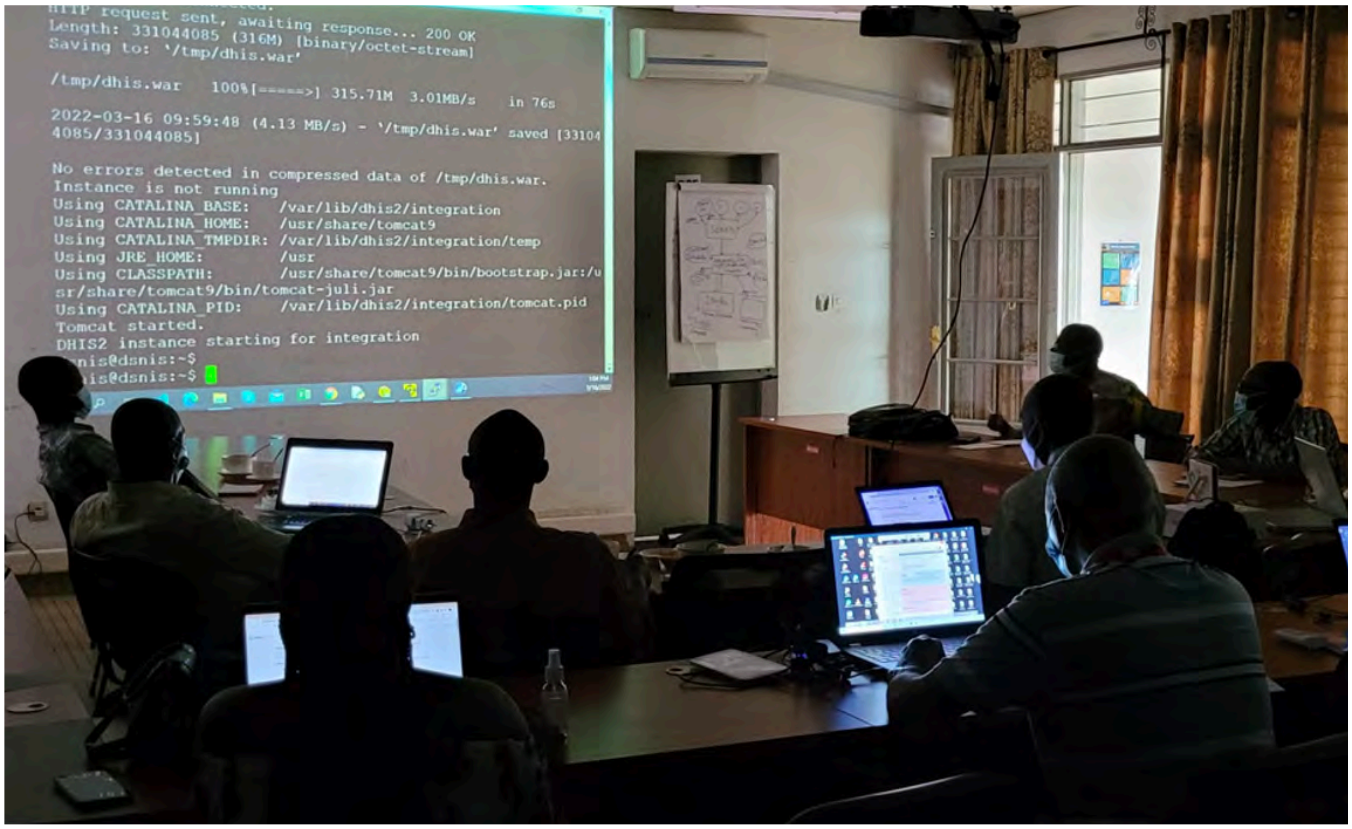
DATA.FI IMPACT AREA

# Optimizing and Scaling Health Information Systems and Digital Solutions

Data.FI optimizes information systems to improve client care at the site level, inform resource allocation at the planning level, and promote accountability. This requires a reorientation of source systems to meet client care management objectives, and the harmonization of reporting systems designed to capture the data needed and used to plan and improve programs and track investments. Data.FI works closely with local stakeholders to build and maintain systems that interface well within the existing ecosystem.

We do this by gathering requirements and collaborating closely with partners to support data sharing and interoperability across existing and emerging platforms.

COVID-19 has further brought to the fore the need for sustainable systems—systems aligned with the local context, governed by a coordinated stakeholder team in country, and built on open-source code. There is also a need to design systems more flexibly, with clear change management processes, to allow for agility in measurement now




Teams of Burundi SIDAInfo/DHIS2 administrators review programming code to align SIDAInfo with DHIS2 during a training on systems interoperability held in Bujumbura in March 2022. Photo by Data.FI Burundi/JSI.

and resilience to emerging pandemic threats in the future. This is the challenge and opportunity we are working to build on across sub-Saharan Africa, Central America, and the Caribbean.

## DEVELOPING AND ENHANCING SYSTEMS

Data.FI is at the forefront of supporting governments to develop, enhance, and sustain HIV and COVID-19 information systems to improve data capture and performance improvement.

**In Nigeria, Data.FI is supporting strong HIS governance processes and collaborative principles with the Health Informatics Community of Practice (HI-CoP).** This CoP was co-led by USAID/Nigeria and Data.FI over the past two years, and this year the CoP added the FMWA-coordinated OVC ICT Task team. The scope of the CoP includes the open-source LAMISPlus EMR and its associated mobile applications—LAMISLite and the Community Pharmacy ART Refill Program (CPARP) mobile app—and the Nigeria OVC Management Information System (NOMIS).

The enhancements to the LAMISPlus system arising from this collaboration have been leveraged for more than two years to promote a unified system architecture that promotes seamless data exchange, is scalable to ever-changing demands, and is a global good aligned to international information exchange standards to enhance service delivery and monitoring of the HIV epidemic. Data.FI also enhanced real-time visualizations in the second iteration of USAID's Automated Partner Performance Reporting (APPR) platform, a Comprehensive Access Review Dashboard (CARD) for USAID/Nigeria to support all aspects of its PEPFAR programming, and integration with the Nigeria National Data Repository (NDR) for granular programmatic analysis.

Data.FI's work over the last six months focused on building on the gains made to date on the APPR platform. This included the development and publishing of the line-lister application on the APPR platform to support uploading of deidentified patient

line-lists onto the platform. **This is an analytical solution to support the shift from aggregate data analysis to in-depth client-line data analysis and visualization to provide insightful evidence for decision making.**

We also worked closely with the USAID/ Nigeria tuberculosis (TB) program and provided technical support and mentorship to the TB Data, Impact Assessment, and Communications Hub (TB DIAH) project to successfully onboard TB data onto the APPR. **This will allow USAID and partners to have a more comprehensive dataset on HIV and TB comorbidities.**

**Data.FI/Burundi is supporting PEPFAR and the government of Burundi's goals of enhancing the primary HIV EMR in the country—SIDAInfo.**

**Scaled systems across 47 sites**

In FY21 Data.FI worked collaboratively with the SIDA/Info Unique Identification (UID) TWG to develop the web-based version of the original Access-based system during this reporting period. **This enhanced web based EMR, together with a biometric UID solution, now enables individual clients to have a unified record across all HIV service provision sites, improving quality of data and services delivered.** During this reporting period, we further scaled the enhanced system. This included organizing a training of trainers to improve central-level supervisors' skills in the use of the new SIDAInfo EMR so they could cascade training of site users and their supervisors within the eight provinces remaining for deployment in the country.


Serge Bisore, Burundi country director, Data.FI, and Alex Tumwesigye, a Data.FI DHIS2 specialist, discuss the architecture of SIDAInfo-DHIS2 interoperability during a training of SIDAInfo/DHIS2 administrator teams on systems interoperability held in Bujumbura in March 2022. Photo by Data.FI Burundi/JSI.


Participants learning together at a workshop for users of Burundi's HIV EMR, SIDAInfo. The March 2022 workshop was organized by Data.FI with USAID, RAFG, and RISE. Photo by Data.FI Burundi/JSI.

The project also continued to lead and coordinate the SIDAInfo technical support team, with the aim of transitioning the administration and the management of the EMR to the National AIDS Control Program (Programme National de Lutte contre le SIDA, or PNLS) and the Directorate of the National Health Information System (Direction du Système National d'Information Sanitaire, or DSNIS). To support collaboration, project management, and system maintenance, the SIDAInfo/UID TWG identified a group of 15 administrators (nine from the PNLS and DSNIS and six information technology staff from PEPFAR IPs) to be trained on the newly acquired SIDAInfo/UID maintenance management tools. The training will take place in late April 2022.

Rural area of Burundi. Photo by Counter Culture Coffee.

Chemist in in a laboratory in Arusha, Tanzania. Photo by Mitchell Mahar, International Food Policy Research Institute.

## ADVANCING NATIONAL DIGITAL HEALTH STRATEGIES THROUGH STRENGTHENING COVID-19 VACCINE TRACKING, SURVEILLANCE, AND LAB SYSTEMS

**In Honduras, Data.FI is supporting the MOH's Health Surveillance Unit (SESAL) to strengthen the country's COVID-19 response by updating case definitions for COVID-19 and associated surveillance data collection forms and electronic tools.** Improving the quality of the surveillance data will enable the Honduran government to better allocate its human and material resources equitably, as well as refine its pandemic control strategies and policies by sector and location. We are further supporting SESAL to increase the number of reports, modify existing reports, make minor configuration changes to data entry fields, and improve data validations available in SIMM-COVID—a Microsoft Access database developed through the USAID-funded Health Policy Plus (HP+) Project to manage inventory in laboratories. These updated reports will enable senior laboratory staff to have accurate information to support planning and management of COVID-19-related inventory.

Data.FI is enhancing case management systems in support of OVC and DREAMS programming.

In 2020 and 2021 **Data.FI developed the OVC Management Information System (MIS) in Zimbabwe—a harmonized case management database now in use by all PEPFAR OVC partners in the country.** Over the past year, Data.FI has deployed the OVC MIS in Zimbabwe across 23 sites, after organizing a training of trainers for staff in September 2021 to use the

system to pull reports on OVC_SERV (the number of beneficiaries served by PEPFAR OVC programs for children and families affected by HIV), HIV status, and viral load suppression. During this reporting period, Data.FI developed the terms of reference for, and engaged as part of the secretariat of the USAID-led OVC Strategic Information Working Group, which will be a governance mechanism to ensure strong and long-lasting oversight and maintenance of the system. Local system administrators are being trained to prepare and lead these meetings, which focus on resolving configuration requests, data cleaning, updating visuals available in the dashboards, and responding to requests for ongoing training and assistance.

**15**
**systems with updated PM documentation**

**In Nigeria, in collaboration with FMWA, Data.FI successfully conducted pilot testing of the enhanced National OVC Management Information System across six states supported by six US-government funded IPs**. In line with the country's national policy on data protection, which requires that client-level data be domiciled in data centers in-country, Data.FI worked with the National Information Technology Development Agency (NITDA) to identify a credible local cloud service provider to host central data warehouses for both LAMISPlus and NOMIS.

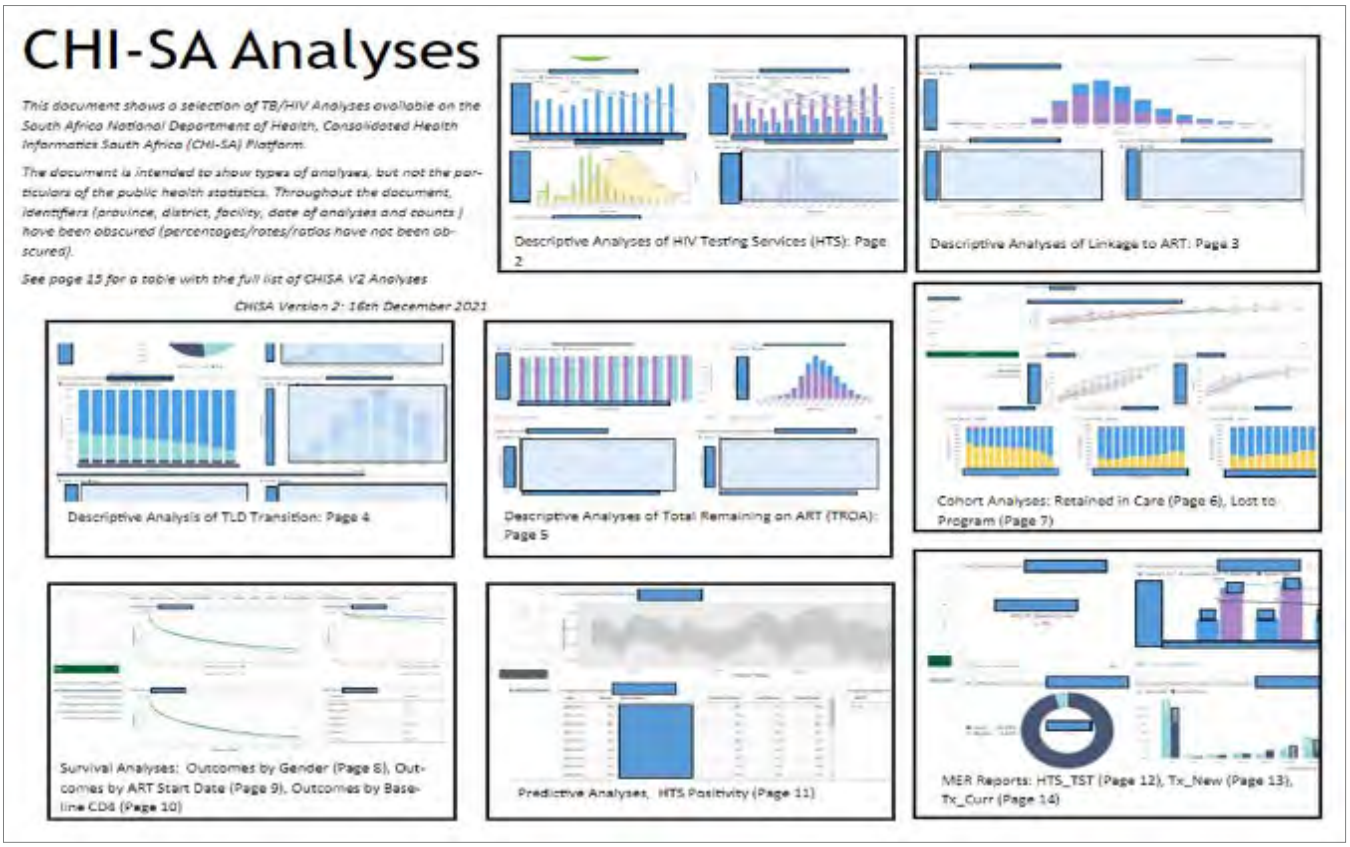
## DEPLOYED OVC MIS PROMOTES DATA USE

Community partners delivering critical OVC services are responsible for ensuring that community-level data are captured and reported accurately and in a timely fashion. Before the development of Zimbabwe's OVC MIS, it was not possible for community partners to quickly assess at the individual child level which OVC clients were missing services or required follow-up. The OVC MIS allows partners to run reports and generate line-lists of the children served. Using the OVC MIS has helped them create a culture of data use and made it possible to better serve children.

FACT staff member filing records in Zimbabwe. Photo by Tinotenda Kabayi, FACT/Zimbabwe.

> **"We can pull the names of beneficiaries with missing data or services and share this with the health facilities to act immediately. Live dashboards enable teams to see data gaps in real-time and make tracking OVC clients easy."**
>
> —Catholic Relief Services (CRS/Zimbabwe), Jointed Hands Welfare Organization

> **"The OVC MIS helps us to better target clients' needs using MIS reports and to pinpoint areas of service provision that are lagging behind. Having the data to inform decision making helps us to strengthen HIV services for children."**
>
> —HOSPAZ, Tsungirirai




The CHISA analytical platform integrates multiple datasets to create dashboards that facilitate decision making at facility, regional, and national levels of the healthcare system in South Africa.

In Côte d'Ivoire, we held two meetings with the National OVC Program (Programme nationale de prise en charges des Orphelins et autres Enfants rendues Vulnérables du fait du VIH/Sida, or PNOEV) and IPs to identify a common process for migrating existing OVC and Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) data into a new database. **The integration of OVC and DREAMS data into one database in Côte d'Ivoire with two interfaces will reduce the risk for duplication of records on beneficiaries across the two programs and strengthen information for national-level decision making.** PNOEV monitoring and evaluation (M&E) staff were trained on the data migration process and are now in the process of finalizing the migration.

## INTEGRATING INFORMATION SYSTEMS FOR ADVANCED ANALYTICS

The **"Consolidated Health Informatics South Africa" (CHISA)** system, previously known informally as the 'InfoHub,' **is an analytical platform integrating multiple datasets for analyses and visualizations**. It has been designed to provide a wide range of users with insights into client well-being across the HIV cascade. The analytics platform is built upon **a national data warehouse through which disparate HIS in South Africa can be linked,** allowing for data triangulation across different systems. Data.FI's work advancing CHISA in South Africa with the National Department of Health (NDOH) highlights how **analytic platforms that**

**pull in data from multiple sources** will catalyze a new era in program performance monitoring, improvement, and planning.

This analytic potential has been increasingly realized over the last six months, as we have focused on integrating outcomes and predictive-based analyses into CHISA, including:

- time to event (survival) analysis, using methods that range from univariate and multivariate analysis to determine probabilities of antiretroviral treatment (ART) retention
- Cox regression modelling for hazard ratios predicting outcomes of attrition (loss to follow-up and mortality)
- predictive analysis for HIV testing services (HTS) positivity, and predictive analysis for Total Remaining on ART (TROA)

Visualizations were also developed for PEPFAR MER indicators around HIV testing, ART initiation, active on ART, and viral load testing indicators. The platform now allows for gender and age disaggregation in all analytical use cases if the data are available in the source systems.

In collaboration with the NDOH, we also expanded the **CHISA data warehouse to include a patient longitudinal record schema.** This links a patient's record as they move across facilities anywhere in the country. It is used to power the deduplication report, which uses patient matching algorithms to track patient movements between health facilities, and to link patient records between disparate datasets.


A pharmacist helps a customer in Johannesburg, South Africa. Photo by James Oatway/IMF.

DATA.FI IMPACT AREA

# Improving Data Sources

**In the dynamic HIV and COVID-19 response efforts, USAID, IPs, the private sector, and governments need trusted data at their fingertips so that they can quickly pivot to meet their clients' needs. Quality data is crucial to support planning and meet performance targets.**

Data.FI builds smart systems that give decision makers confidence in their data. Improving data sources for digital health systems involves multilevel interventions appropriate to the country context. The steps include clearly defining indicators; deduplicating data; developing innovative ways to assess data quality; and ensuring that source systems are capturing current prevention, treatment, laboratory, vaccination, or commodity guidelines and data definitions. Data.FI works with stakeholders to rapidly assess and address data quality gaps and put in place practical, easy-to-use solutions to demystify the data quality improvement process, as well as to establish gold standard data quality and management practices to support IPs to responsibly manage data.


People walking on a street in Lower Casamance, Senegal. Photo by UN Women Africa.

## DATA QUALITY IMPROVEMENT

In 2020 and 2021, Data.FI supported the USAID/West Africa Region (WAR) Mission to strengthen analysis and use of data for decision making, improve the quality of high-frequency HIV reporting, and orient teams on global guidance related to deduplication of data and data security for key populations (KPs). During this reporting period, Data.FI was again engaged by USAID/WAR to build on this work and **further strengthen data quality among PEPFAR-funded IPs in the region.**

To better understand existing data quality systems and processes within PEPFAR-funded IPs, Data.FI conducted an assessment across eight countries—Benin, Burkina Faso, Ghana, Liberia, Mali, Senegal, Sierra Leone, and Togo. The assessment used the data quality assurance, data quality improvement, and data use components of the **PEPFAR Strategic Information Capacity Assessment (PSICA) tool, a validated tool developed by USAID/OHA and Data.FI that assesses an IP's strategic information system.** The assessment also included several open-ended questions to identify priority data quality issues and suggestions for improvement.

Findings showed that most IPs surveyed have strong data quality assurance and improvement processes, but face external challenges to strengthening data quality due to the ongoing use of paper-based reporting systems, staff turnover and staff capacity, and electricity and internet shortages impeding electronic reporting systems. They are also challenged by limited and inconsistent management and political support to strengthen data quality. In response, Data.FI is organizing a **West Africa Community of Practice for Data Quality to share best practices and lessons learned in improving data quality in the region.** As part of the CoP, IPs will have the option to develop data quality improvement action plans and will share progress over time in achieving their objectives with fellow participants.

**30**
**digital data quality checks**


A nurse in Akwa Ibom, the state in Nigeria with the highest prevalence of HIV, takes a patient's blood pressure in a local clinic. Photo by Data.FI Nigeria.

During this reporting period **Data.FI Nigeria successfully conducted data quality assessments (DQAs) on four HIV indicators** (HTS_TST_POS, TX_CURR, TX_ML, TX_RTT) **across 39 facilities in seven USAID-supported states throughout the country.** The Data.FI team and health facility staff reviewed M&E systems, identified best practices, and developed joint action plans and recommendations with the IPs to improve existing systems for better reporting of PEPFAR MER 2.5 indicators in subsequent funding cycles.

The assessment of the M&E systems across all facilities documented that M&E structures, functions, and capabilities, indicator definitions and reporting guidelines, data collection and reporting forms and tools, and links with the national reporting system were areas of strength for most facilities. They found that improved data management processes and the increased use of data for decision making would enable facilities to further improve data quality and strengthen their systems for more responsive service delivery. As a result of the assessment, a comprehensive DQA report was produced and will be used to inform USAID and IPs on the quality of data generated from the systems and identify areas to invest in improvements.

Data validation being conducted in the General Hospital Minna by Seyi Abolarin, strategic information specialist, Dada Adegoke, data analyst, and Bridget Okosa, data analyst, of Data.FI Nigeria. Photo by Data.FI Nigeria.

Data.FI is emphasizing the use of quality data for planning processes in Burundi. Data.FI, in collaboration with the National AIDS Control Agency (the Conseil National de lutte contre le SIDA, or CNLS), is using Spectrum modeling for HIV projections and strategic planning. This is leading to renewed interest among health departments (DSNIS and PNLS) to improve data quality review processes at different levels. Business rules have been reviewed and updated in line with the new HIV case management guidelines, and monthly data quality analysis meetings were initiated, bringing together different stakeholders to identify data quality issues. Reports from these meetings are then sent to the district level for follow-up action. Data.FI is supporting this effort technically, through training and coaching of the PNLS M&E team and HIV partners to use DHIS2 and data analysis tools to identify data quality issues.

**6**
**partners with improved data quality**

## ANOMALY DETECTION

Anomaly detection in machine learning refers to a collection of algorithms that learn patterns in the data and then automatically identify atypical data points. Data.FI built an R-based tool using Recommender Systems and Time Series methods to identify anomalies in PEPFAR MER datasets that contain continuous and temporal data. The tool will accelerate, automate, and standardize key aspects of data reviews and DQAs, reducing the LOE needed for manual data review and accelerating DQAs. The Data.FI Anomaly Finder can rapidly and systematically pinpoint anomalies, flag likely erroneous data entries, and improve data quality—helping analysts identify the values where they need to investigate more or conduct a root cause analysis to correct underlying issues. The tool and its methodology were presented in January 2022 at USAID/OHA's Center of Excellence meeting and are now being used in several countries to support data quality efforts.

# Engaging Stakeholders with Communications Outreach

Data.FI connects with global and local partners through multiple communication platforms. Audiences include groups working to accelerate and maintain HIV and COVID-19 epidemic control, such as development agencies, donors, in-county entities, USAID collaborating agencies and projects, universities and research institutes, and news media.

## EMAIL CAMPAIGNS

Data.FI shared project results and lessons learned through multiple channels, including targeted email campaigns.


Reached **56,724** individuals in **20** targeted email campaigns

**Five Ways that Remote DQAs Improve Insights into the Patient Experience During the COVID-19 Pandemic**

Traditional data quality assessments (DQAs) are often limited in geographic scope due to the nature of in-person data collection. Remote data quality approaches, including remote DQAs, by contrast, can expand geographic reach and facilitate a more targeted, precision-based

## LISTSERVS AND E-NEWSLETTERS

Listserv and e-newsletter announcements reached **18,250+**


USAID
FROM THE AMERICAN PEOPLE

INNOVATION +IMPACT
E-NEWSLETTER

CENTER FOR INNOVATION AND IMPACT
USAID | Global Health

JANUARY 2022

FEATURE

PEOPLE-CENTERED METRICS FOR HIV RESOURCE LAUNCHED

Partnering with Leapfrog to Value and Data.FI, CII and USAID's Office of HIV/AIDS (OHA) recently released a resource called 'Putting People-Centered Metrics for HIV Into Practice' CII's Senior Advisor, Monisha Ashok, and OHA's Health Science Specialist, Emily Harris, worked to apply a value-based care and human-centered design approach to develop metrics that matter most to patients living with HIV, in an effort to deliver and incentivize patient-centered care and treatment. This included not only clinical metrics (e.g. viral suppression) but also quality of care (e.g. privacy) and quality of life (e.g. social support) metrics that motivate patient behavior. The metrics builds on OHA and CII's ongoing partnership to promote value-based, human-centered health care.

The metrics and operational guidance are being validated in a HIV program-context by Data.FI in sub-Saharan Africa this year. CII and USAID/India have also worked with Leapfrog to Value and World Health Partners (WHP) to apply a similar value-based care approach to patient-centered measurement, delivery, and payment models for TB in India.

## SUCCESS STORIES AND BLOGS


ICTworks

5 Additional Ways to Create Digital Development Sustainability

By Guest Writer on December 23, 2021

Build for Sustainability

Success stories on blog channels reached **60,750+** (cumulatively)

## SOCIAL MEDIA ENGAGEMENT

Data.FI LinkedIn page viewed **59,517** times


Data.FI Project
1,203 followers
1mo •

We celebrate awesome women in Tanzania on Interna
Day! Data.FI Tanzania is working to improve staff productivity
health services, and is working with the President's Office Regional Ad ...see more

All figures describing dissemination reach are cumulative (October 1, 2021—March 31, 2022). These figures are conservative and do not include reach estimates for USAID e-newsletters that published summaries of Data.FI work. The USAID Global Health Twitter account @USAIDGH, with **199,408** followers, cited Data.FI's human resources for health solution.

DATA.FI IMPACT AREA

# Strengthening Local Partners and Governance

Data.FI aims to strengthen host country capacity to lead and sustain the national HIV and COVID-19 response through the development and use of robust and resilient HIV and COVID-19 information systems and digital solutions. We work with MOHs and their partners to develop and build open-source technology solutions to provide impartial, evidence-based advice on policies and protocols—such as systems interoperability and data security—and work side-by-side with government counterparts to transfer leadership skills in data review, interpretation, and action planning.

## STRENGTHENING GOVERNMENT HIS LEADERSHIP

Data.FI works in close partnership with government to strengthen their capacity to steward their health response and the digital ecosystem that supports it.


Nursing staff wait outside the Steve Biko Academic Hospital in Pretoria, South Africa. Photo by James Oatway/IMF.


Rehema Kassim, district quality advisor with Data.FI Tanzania, creates an objective statement during the August 2022 Chamwino Council Design workshop in Dodoma. Photo by Data.FI Tanzania.

**In South Africa, Data.FI is working closely with the NDOH to transition the support and maintenance of CHISA,** a powerful analytics platform that includes longitudinal and cohort HIV data. Building on the capacity-building and sustainability plan developed during the Country Operational Plan 2020 (COP20) period, the Data.FI South Africa team is working to ensure the ongoing capacitation of the NDOH. Data.FI is also verifying that all current technical and analytical product and use case documentation is uploaded onto the NDOH Confluence site. We held a transition and visioning workshop in February 2022 to take stock of transition readiness from both a project and donor perspective. A more in-depth workshop will be held with the NDOH in the coming months.

**88**
**people trained**

During this reporting period, Data.FI also continued work to transition the Knowledge Hub to the NDOH. The **Knowledge Hub** is an **e-learning platform** that offers online courses and webinars for public and private-sector health providers in **South Africa** on everything from management of drug-resistant TB and case management of malaria to clinical care for clients with HIV and viral hepatitis. Data.FI collaborated with NDOH's Human Resources Directorate (HRD) Unit and the ICT team to advance the tasks necessary to transition the Knowledge Hub server hosting to the NDOH environment, including setting up the designated server environment to the specifications and bandwidth needed, testing the environment, progressing with setting up the domain name and infrastructure needed for the system email configurations, and more.

Data.FI also successfully completed an **exercise to develop a fully comprehensive budget for maintaining the Knowledge Hub** and related programmatic activities **to serve as a reference and tool for the NDOH to use for future funding requests.** The budget is currently being refined.

**In Burundi, Data.FI is collaborating with multilateral donors and IPs to support the MOH to review the National Strategic Plan (2018–2022) and to develop the new one (2023–2027).** A review workshop on the current strategic plan was held in November and culminated in a report which will inform the upcoming National Strategic Plan (2023–2027). Our role is to ensure that the new strategic plan considers new strategies for the HIV response recommended by PEPFAR, and that quality data inform the strategy.

**9**
**digital health coordination structures supported**

A young woman farmer carrying her child in Burundi. Photo by Walter Zerla.

**In Burundi we also worked with the Programme de Gestion d'Informatique du Système de Santé (PROGISSA), a new structure that is coordinating eHealth within the MOH to ensure the HIV information system applications and software are integrated in the overall HIS architecture in the country.** To further strengthen information system governance in the country, we revitalized the DHIS2 Task Force, whose main role is to unify data sources, and ensure a harmonized reporting system and interoperability with other systems. The task force's terms of reference were updated, and the first meeting was held in January 2022.

## STRENGTHENING GOVERNMENT LEADERSHIP FOR THE COVID-19 VACCINE

COVID-19 post-introduction evaluations (cPIEs) are country-led facilitated processes developed by the World Health Organization (WHO) that give countries the opportunity to periodically review their progress with COVID-19 vaccine introduction, identify early learning, and make improvements. The review includes key stakeholders from central and regional levels, such as the MOH, WHO, UNICEF, and other partners.

In Tanzania, the COVID-19 vaccine rollout has lagged in comparison to other countries in the region. Reasons for this include a high dropout rate between first and second doses, a shortage of insulated containers used for transporting vaccines at health facilities, and inadequate community health worker support for sensitization. **To strengthen the government's COVID-19 response, in February 2022 Data.FI supported a mini-cPIE workshop in Tanzania to examine the available COVID-19 vaccine data and develop recommendations for improving the government vaccine program.** Findings and recommendations were collated into a first draft of a report, which is currently under government review and will serve as a roadmap to strengthen its COVID-19 vaccine response.

A Pamuhacha HIV/AIDS Prevention Trust case manager at the at Madzorere Clinic in Zvimba District, Zimbabwe, verifies ART registers and identifies any gaps in handling cases for HIV-positive children, caregivers, and other vulnerable children referred for HIV testing at the facility. Photo by Rumbidzai Mashayahanya, Hospice and Palliative Care Association of Zimbabwe (HOSPAZ).

An adverse event following immunization (AEFI) is any untoward medical occurrence which follows immunization, and which does not necessarily have a causal relationship with use of the vaccine. According to WHO, if these events are not rapidly and effectively dealt with, they can undermine confidence in a vaccine and ultimately have dramatic consequences for immunization coverage and disease incidence. Effective spontaneous reporting of AEFIs is the first step to making sure that vaccine products are safe and are being safely administered.

**To support country COVID-19 vaccine responses, Data.FI has been working in Nigeria and El Salvador to document the current practices for recording, reporting, sharing, and using data on AEFIs.** Over the past few months, the team has completed the assessment protocol. One consultant per country was hired and trained on conducting key informant interviews and liaising with government counterparts. The consultants are now ready begin data collection following Institutional Review Board approval (Nigeria) and government authorization (El Salvador).

# Advancing Gender Equality

**In support of Data.FI's project objectives, our gender equality goal is to improve health outcomes among persons of all genders and ages through better use of gender data. Our work is grounded in evidence that gender data are critical to attainment of program targets as well achievement of equitable health outcomes and gender equality.**

In 2022, we began updating our Gender Equality Strategy to reflect expansion of the project's COVID-19 portfolio, the December 2021 update of Data.FI's results framework and monitoring, evaluation, and learning (MEL) strategy, and refreshed U.S. government policies and strategies on gender equality, women's empowerment, diversity, equity, and inclusion. As part of this process, we are reviewing gender strategies within all our work plans and will hold a project-wide gender training during the next period.

During the current reporting period, we advanced the use of gender data in several key areas.

Father with children in Panama City, Panama. Photo by Martha de Jong-Lantink.

**Gender data refers to information pertaining to the dynamics between HIV and COVID-19 and gender equality, gender equity, gender norms, gender-based violence, and sexual diversity and inclusion.**

**Accelerating use of data on gender-based violence (GBV) for PEPFAR monitoring and planning.** GBV has implications for almost every aspect of an individual's health and well-being, yet data on GBV service needs and provision are lacking. Although PEPFAR has recognized the need to strengthen and monitor services (e.g., through the MER indicator, GEND_GBV), systematic GBV data collection and use are typically underprioritized.

Within Nigeria's APPR system, Data.FI developed a dashboard to track GEND_GBV and GBV custom indicators and supported the analysis and generation of quarterly GBV reports for USAID's COP planning and the Mission's routine enhanced site management processes. The GBV dashboards track indicators such as the percentages of individuals screened for GBV and who disclosed experience of GBV, and the percentages who were provided post-GBV care as well as referred for GBV services. These indicators are further disaggregated by age and sex. The dashboard was updated with Fiscal Year 2021 Quarter 1 GBV custom indicators data and used for data review by the USAID gender program during the reporting period.

**18** analytical solutions using gender data


## ELIMINATING VIOLENCE AGAINST GIRLS

Data.FI Nigeria is a member of the National Strategic Knowledge Management TWG on GBV and recently participated in its first quarterly, one-day meeting to sensitize stakeholders on methods and results of DQAs conducted on GBV datasets across selected states. The Spotlight Initiative—a global initiative of the United Nations with support from the European Union to eliminate all forms of violence against women and girls—is currently establishing GBV situation rooms to promote routine review of GBV data and use of results for better decision making. Data.FI's role is to support harmonization of GBV indicators and integrate or link them to FMWA's OVC Situation Room supported by Data.FI.

School girls in Nigeria. Photo by Global Fund for Children.

**Improving data quality and analysis to advance girls' education and HIV prevention.** Also in Nigeria, the Akwa Ibom State government and partners have placed an increased emphasis on the girl child to ensure that girls are given high priority in education. Data.FI is working closely with the SMOH, the Joint United Nations Programme on HIV/AIDS (UNAIDS), and the Nigeria FMWA and other stakeholders in the state to ensure that all OVC beneficiaries supported by USAID IPs are enrolled in school. The custom indicator, OVC_EDU, is being closely monitored to ensure that the gap between boys and girls ages 5–17 currently enrolled in school is reduced. Data.FI's weekly data quality checks and analyses have guided data reviews held during ECR meetings to inform action plans and course correction.

**24**
**indicator reference sheets developed**

**Promoting the systematic use of sex- and age-disaggregated data within HIS platforms.** Routine collection of quality sex-and age-disaggregated HIV data have improved over the past decade, yet program managers often fail to routinely "dig into" these data to explore gender-related issues. In South Africa, Data.FI has included age and gender disaggregation in all analytical use cases within the integrated CHISA platform (to the extent possible based on the data ingested from the source systems) to promote data review, interpretation, and dialogue regarding sex and age differentials, as well as service delivery solutions. Additionally, gender disaggregations are a key component of the planned re-platforming of the HIV/TB Information System (THIS), where the capacity to add a third gender category is being explored in line with a proposal led by the South African National Aids Council (SANAC).

Young schoolgirls in Honduras. Photo by Paul Hart courtesy of Flickr Creative Commons.


Logisticians and pharmacy professionals provide supportive supervision at the Geda Health Center in Oromia Regional State, Ethiopia. Photo by Yosef Wakwoya, USAID GHSC-PSM Project.

**Advancing analytics for estimating the sizes of KPs to inform resource allocation.** Planning efforts for strengthening HIV services for KPs are often constrained by the paucity of data on the number of persons within a given KP, particularly at subnational levels. Data.FI continued its work in **Namibia** over this reporting period to explore the use of small area estimation methods and other critical inputs, such as census and programmatic data to estimate the number of men who have sex with men, female sex workers, and transgender people at regional levels. During the reporting period, Data.FI worked with the Mission and IPs to incorporate additional data and review estimates resulting from the different methods. The Mission used these size estimates during COP22 planning to help direct resources to geographic locations where they were most needed.

# Looking Forward

**We write this report as we pass the two-year mark since WHO declared the COVID-19 pandemic, and as we close the project's third year. Looking back, what stands out to me is Data.FI's ability to adapt, innovate, and problem solve in constrained circumstances. As priorities shift due to emerging threats and political changes in the countries where we work, Data.FI evolves to deliver high-impact services, working hand-in-hand with local governments and partners to build on what exists and to implement their vision.**

Over the last six months, notable achievements include the establishment of a set of new HIV, COVID-19 and broader health systems-strengthening activities across Latin America and the Caribbean, transitioning an entire information system project in Eswatini (in just three weeks), and the inclusion of outcome-level and predictive analytics in CHISA. We have also evaluated and expanded our **diversity, equity, and inclusion activities** on the project, which has led to a refreshed gender strategy and improved recruitment and procurement practices.


Women near a kiosk promoting masks for COVID-19 prevention in Lagos, Nigeria, where the pandemic has had a large impact on people and the economy. Photo by the International Monetary Fund.

A young girl attends class at the Tim Hines School in Tegucipalga, Honduras. Photo by Carolina Valenzuela, Global Partnership for Education.

Into this next performance period, we look forward to continuing to help **USAID meet objectives outlined in the PEPFAR Country/Regional Operational Plan Guidance, the U.S. COVID-19 Global Response and Recovery Framework,** and the **Initiative for Global Vaccine Access** (Global VAX). Data.FI is already **accelerating equitable access to safe COVID-19 vaccinations** (COVID-19 Framework Objective 1) though the application of our COVID-19 vaccination allocation tool in Côte d'Ivoire, and our vaccine information systems and data use support in Guatemala, Honduras, Jamaica, and Nigeria.

In the coming months we look forward to expanding this support to Global VAX in existing Data.FI countries and extending to new countries (Botswana, Eswatini, Malawi), working in collaboration with host country governments and USAID to improve how data are managed and visualized. We will also **conduct vaccine hesitancy surveys in a set of USAID priority countries,** providing critical data to governments to support both vaccine allocation and risk communication messaging. This work is helping governments maximize vaccine coverage in priority populations and minimize vaccine wastage.

**COVID-19 has expanded the interest and investment level in HIS strengthening**—the development of integrated, responsive and flexible systems to prevent, detect, and respond to pandemic threats (COVID-19 Framework Objective 2). Our project work across health areas is oriented to **building resilient public health assets** that

can support broader global health security. In line with COP22 priorities and broader USAID policy, Data.FI's approach to system enhancement is to **bolster local governance structures, simplify architecture, and build in transition plans for system maintenance** from the outset to ensure that investments are sustainable.

In Guatemala and Honduras, we are enhancing governance structures for COVID-19 information systems. **New governance structures will improve surveillance, logistics, laboratory, and other digital systems** utilized for the COVID-19 emergency, including—in Honduras—DHIS2, which will be used for COVID-19 digital passports. In Eswatini, Data.FI will improve the governance structures for the national client management information system, establishing the foundation for system transition to government.

Through implementation, Data.FI's key role in supporting USAID to meet commitments to advance global pandemic preparedness has been solidified. We are helping to build resilient and flexible information systems and data review structures that leverage previous investments and can meet and withstand emerging threats. We look forward to further scaling our tested solutions and co-creating innovative, efficient approaches with USAID, host country governments, and local partners to save lives.

—**Jenifer Chapman,** Data.FI Project Director

A woman waits at a bus stop in Eswatini. Photo by Ashleigh Ozment.

# Annexes

Much of Burundi remains rural. Just over 1 percent of the population has electricity, and only 50 percent of children go to school. About 1 in 15 adults in Burundi have HIV/AIDS, according to the World Population Review. Photo of children in Burundi by Walter Zerla.

# Annex 2. Project Indicator Results

| Indicator | Target - LOP | Achieved - LOP Apr 2019 - Mar 2022 | Achieved SAPR 2022 Oct 2020 - Mar 2022 | Burundi | Côte d'Ivoire | Nigeria | South Africa | Tanzania | Zimbabwe | Mozambique | COVID-19 Vaccine IP Forum | Value-Based Care | Mozambique IIT | Market Segmentation | Core Local Partner Transition | Guatamala | Honduras | West Africa Region Data Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome 1: Accelerated data use** | | | | | | | | | | | | | | | | | | |
| **1.1 SI_USE**<br>Number of data use cases that document use of data for performance improvement | 80 | 44 | 6 | | | 2 | | 4 | | | | | | | | | | |
| **1.1 SI_USE GENDER DISAGGREGATION**<br>Number of data use cases that use gender data | N/A | 4 | 4 | | | | | 4 | | | | | | | | | | |
| **Outcome 2: Advanced Analytics** | | | | | | | | | | | | | | | | | | |
| **2.1 DATA_ANALYSIS**<br>Number of analytical solutions | 337 | 175 | 28 | | | 12 | 3 | 4 | | | 4 | | | 2 | | 1 | 1 | 1 |
| **2.1 DATA_ANALYSIS GENDER DISAGGREGATION**<br>Number of analytical solutions that include gender data | N/A | 18 | 18 | | | 12 | 1 | 4 | | | | | | 1 | | | | |
| **Outcome 3. Optimized and scaled health information sub-systems** | | | | | | | | | | | | | | | | | | |
| **3.1 HIS_INTEROP***<br>Number of instances of health information systems supported by the project that demonstrate interoperability or compliance with interoperability standards | 51 | 19 | 2 | 1 | | 1 | | | | | | | | | | | | |
| **3.2 HIS_PM***<br>Number of information systems, applications, or modules supported by the project with updated key project management documentation for software development | 204 | 59 | 15 | 1 | 2 | 6 | 4 | | | | 1 | | | | | | 1 | |
| **3.3 HIS_SCALE***<br>Number and percentage of program sites with new or upgraded project-supported information systems operational as intended within the reporting period | 85% | 89% | 78% | 78% | | | | | | | | | | | | | | |
| | 2371 | 618 | 47 | 47 | | | | | | | | | | | | | | |
| **3.4 HIS_ALIGN**<br>Number of systems or modules developed or improved upon by Data.FI that include an assessment of the HIS ecosystem in requirements documentation | 38 | 16 | 7 | | | 6 | 1 | | | | | | | | | | | |
| **Outcome 4. Strengthened HIV data sources** | | | | | | | | | | | | | | | | | | |
| **4.1 DATA_CHECKS**<br>Number of digital data quality checks for key PEPFAR indicators developed and introduced | 116 | 61 | 30 | 3 | | 27 | | | | | | | | | | | | |
| **4.1 DATA_CHECKS GENDER DISAGGREGATION**<br>Number of digital data quality checks for key PEPFAR indicators developed that include checks for gender data | N/A | 27 | 27 | | | 27 | | | | | | | | | | | | |

## Project Indicator Results continued

| Indicator | Target - LOP | Achieved - LOP Apr 2019 - Mar 2022 | Achieved SAPR 2022 Oct 2020 - Mar 2022 | Burundi | Côte d'Ivoire | Nigeria | South Africa | Tanzania | Zimbabwe | Mozambique | COVID-19 Vaccine IP Forum | Value-Based Care | Mozambique IIT | Market Segmentation | Core Local Partner Transition | Guatamala | Honduras | West Africa Region Data Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.2 SI_QUAL**<br>Number of partners/subnational units supported with Data.FI data quality interventions that demonstrate improved data quality | 155 | 46 | 6 | 3 | | 3 | | | | | | | | | | | | |
| **Outcome 5. Strengthened local partners** | | | | | | | | | | | | | | | | | | |
| **5.1 CAP_DATA**<br>Percentage of supported local organizations that have been assessed using the U.S. Agency for International Development (USAID)/Office of HIV/AIDS (OHA) Data Non-U.S. Organization Pre-Award Survey (NUPAS) tool (or a similar one) | N/A | N/A | 0% | | | | | | | | | | | | | | | |
| | N/A | 6% | 0% | | | | | | | | | | | | | | | |
| **5.2 CAP_MER**<br>Percentage of supported local organizations meeting 80 percent of assigned PEPFAR MER target contributions in the reporting period | N/A | N/A | 0% | | | | | | | | | | | | | | | |
| **5.3 CAP_NUPAS**<br>Percentage of supported local organizations that have undergone a Non-U.S. Organization Pre-Award Survey (NUPAS) or NUPAS-like assessment | N/A | N/A | 0% | | | | | | | | | | | | | | | |
| **Outcome 6. Innovative partners and methods promoted** | | | | | | | | | | | | | | | | | | |
| **6.1 INNOV_ANALYSIS**<br>Number of analytical solutions that apply artificial intelligence/machine learning techniques | 38 | 8 | 3 | | | | 1 | | | | | | | 2 | | | | |
| **6.1 INNOV_ANALYSIS GENDER DISAGGREGATION**<br>Number of analytical solutions that apply artificial intelligence/machine learning techniques that include gender data | N/A | 2 | 2 | | | | 1 | | | | | | | 1 | | | | |
| **6.2 INNOV_PARTNER**<br>Number of private sector and other non-traditional partners engaged by the project | 6 | 1 | 0 | | | | | | | | | | | | | | | |
| **6.2 INNOV_PARTNER GENDER DISAGGREGATION**<br>Number of private sector and other non-traditional partners engaged by the project that are women-led businesses | N/A | 0 | 0 | | | | | | | | | | | | | | | |
| **6.3 INNOV_PM**<br>Number of analytical solutions that apply artificial intelligence/machine learning techniques with updated key technical documentation | 28 | 2 | 2 | | | | 1 | | | | | | 1 | | | | | |
| **6.4 INNOV_DEPLOY**<br>Number of instances of machine learning models deployed and/or tools developed for ongoing use | 10 | 2 | 2 | | | | 1 | | | | | | 1 | | | | | |

## Process Indicator Results

| | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 |
|---|---|---|---|---|---|---|
| | **Proportion of benchmarks that were completed within one month of deadline** | **Percentage of annual expiring obligation expended in each financial year** (USD amount expended/ expiring obligation) | **Number of activities with a signed data-sharing agreement** | **Number of digital health coordination structures supported by Data.FI** | **Number of data systems assessed by project** | **Number of data review meetings where performance data are reviewed supported by Data.FI activities** |
| **Target - LOP** | 75% | 99% | 40 | 20 | 13 | 1286 |
| **Achieved - LOP Apr 2019 - Mar 2022** | N/A | N/A | 10 | 13 | 6 | 985 |
| **Achieved SAPR 2022 Oct 2020 - Mar 2022** | N/A | N/A | 2 | 9 | 0 | 359 |
| **Burundi** | | | | 2 | | |
| **Côte d'Ivoire** | | | | | | |
| **Nigeria** | | | | 1 | | 116 |
| **South Africa** | | | | | | |
| **Tanzania** | | | | | | 224 |
| **Zimbabwe** | | | | 1 | | 16 |
| **Mozambique** | | | | | | |
| **COVID-19 Vaccine IP Forum** | | | 1 | | | |
| **Value-Based Care** | | | | | | |
| **Mozambique IIT** | | | | | | |
| **Market Segmentation** | | | 1 | | | |
| **Local Partner Transition** | | | | | | |
| **Guatemala** | | | | 5 | | |
| **Honduras** | | | | | | 3 |
| **West Africa Region Data Quality** | | | | | | |

**N/A - indicator reported annually**

## Process Indicator Results continued

| | 0.7 | 0.8 | 0.9 | 0.9 | 0.9 | 0.10 |
|---|---|---|---|---|---|---|
| | Number of indicator reference sheets developed or improved upon | Number of curricula developed by Data.FI | Number of individuals completing a training conducted by Data.FI (by sex of participant) | Number of individuals completing a training conducted by Data.FI (Female disaggregate) | Number of individuals completing a training conducted by Data.FI (Male disaggregate) | Number of applications of Data.FI project-branded tools, analytical approaches |
| Target - LOP | 133 | 56 | 6348 | N/A | N/A | 90 |
| Achieved - LOP Apr 2019 - Mar 2022 | 117 | 22 | 1636 | N/A | N/A | 18 |
| Achieved SAPR 2022 Oct 2020 - Mar 2022 | 24 | 3 | 88 | 28 | 60 | 3 |
| Burundi | | | 66 | 20 | 46 | 1 |
| Côte d'Ivoire | | | 10 | 3 | 7 | |
| Nigeria | 15 | | 12 | 5 | 7 | |
| South Africa | | | | | | |
| Tanzania | 9 | 3 | | | | |
| Zimbabwe | | | | | | |
| Mozambique | | | | | | |
| COVID-19 Vaccine IP Forum | | | | | | |
| Value-Based Care | | | | | | |
| Mozambique IIT | | | | | | |
| Market Segmentation | | | | | | |
| Local Partner Transition | | | | | | |
| Guatemala | | | | | | |
| Honduras | | | | | | 1 |
| West Africa Region Data Quality | | | | | | 1 |

**N/A - indicator reported annually**

# Annex 3. Data.FI Products

| Final Product | Publication Date by Quarter |
|---|---|
| **HIV Core-Funded** | |
| **Mozambique IIT** | |
| Machine-Learned Risk of Interruption in Treatment Among Antiretroviral Treatment Clients in Mozambique: Report on the Development and Deployment of a Module to OpenMRS | Q2 |
| Mozambique Patient ART Risk Score Model Card | Q2 |
| Data.FI Training on Use of Interruption in Treatment Module Risk Scores | Q2 |
| **Safety Monitoring** | |
| COVID-19 Vaccine Safety Monitoring in Nigeria and El Salvador: Study Protocol | Q2 |
| **Willingness to Pay** | |
| Final global and country-specific profiles | Q2 |
| **HIV Field-Funded** | |
| **Mozambique** | |
| Data Portal | Q2 |
| **Nigeria** | |
| Data Quality Assessment in Nigeria, Fiscal Year 2021, Quarter 4: USAID Nigeria Implementing Partners | Q2 |
| COVID-19 Baseline Emergency Operation Center Assessment Report | Q1 |
| Identifying High-Risk Groups to Improve HIV Case Finding in Nigeria | Q2 |
| **West Africa Region** | |
| Rapid Assessment of Data Quality and Data Use of PEPFAR Implementing Partners in the West Africa Region | Q2 |

| Final Product | Publication Date by Quarter |
|---|---|
| **COVID-19 Funds** | |
| **Côte d'Ivoire COVID-19** | |
| Vaccination contre la COVID-19 en Côte d'Ivoire : analyse des systèmes et outils existants d'allocation des vaccins et de visualisation des données (TR-22-53 FR) | Q1 |
| **COVID-IP Forum** | |
| USAID COVID-19 Vaccine Technical Assistance Implementing Partner Forum Database | Q2 |
| USAID COVID-19 Vaccine Technical Assistance Implementing Partner Forum Mid-Year Review of Pulse Survey Findings and Forum Participation (June 2021 – January 2022) | Q2 |
| USAID COVID-19 Vaccine Technical Assistance Implementing Partner Forum October Pulse Survey Results PowerPoint Presentation | Q1 |
| USAID COVID-19 Vaccine Technical Assistance Implementing Partner Forum January Pulse Survey Results PowerPoint Presentation | Q2 |
| USAID COVID-19 Vaccine Technical Assistance Implementing Partner Forum March Pulse Survey Results PowerPoint Presentation | Q2 |

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## FOR MORE INFORMATION

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