Data.FI Semi-Annual Performance Report

October 2020–March 2021

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Data.FI
Data for Implementation

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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 activity leads and field staff who reported on progress and generously shared their insights, ideas, and photos.

Cover photo: By Data.FI, Right to Care, in Malawi, where Data.FI is supporting local partners in all stages of the data life cycle—assessing electronic medical records data, supporting data entry, and building capacity to use quality data.

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

AGYW	adolescent girls and young women
AI	artificial intelligence
APPR	Automated Partner Performance Reporting system
ART	antiretroviral treatment
CDC	Centre for Disease Control (Nigeria)
CHISA	Consolidated Health Informatics South Africa
COP	Country Operational Plan
CoP	community of practice
Data.FI	Data for Implementation Project
DATIM	Data for Accountability, Transparency and Impact
DHIS2	District Health Information Software, Version 2
DREAMS	Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe
DQA	data quality assessment
DQS	Data Quality Composite Score tool
EA	expenditure analysis
eCMS	electronic case management system
ECR	epidemic control room
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
eLMIS	laboratory information management system
EMR	electronic medical records
EOC	emergency operations center
FMWA	Federal Ministry of Women Affairs (Nigeria)
GBV	gender-based violence
GIS	geographic information system
HI-CoP	health information community of practice
HIS	health information system(s)
HOP	Headquarters Operational Plan
HRH	human resources for health

IIT	interruption in treatment
IPs	implementing partners
KP	key populations
KPIC	key populations unique identification code
LGA	local government area
LTFU	lost to follow-up
M&E	monitoring and evaluation
MEL	monitoring, evaluation, and learning
MER	monitoring, evaluation, and reporting
MFFES	Ministry of Women and Family and Childhood and Seniors (Côte d'Ivoire)
ML	machine learning
MOH	Ministry of Health
MOHSS	Ministry of Health and Social Services (Namibia)
NAIS	Nigeria HIV/AIDS Indicator and Impact Survey
NDOH	National Department of Health (South Africa)
NDR	National Data Repository
NiMS	National Integrated Specimen Referral Network Management System
NOMIS	National OVC Management Information System
OHA	Office of HIV/AIDS
OVC	orphans and vulnerable children
PEPFAR	United States President's Emergency Plan for AIDS Relief
PIRS	performance indicator reference sheet
PLHIV	people living with HIV
PNC ITS-HIV/SIDA	Programa Nacional de Controlo de ITS, HIV/SIDA (National AIDS Control Program, Mozambique)
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)

POA	Prioritization and Optimization Analysis
PSICA	PEPFAR Strategic Information Capacity Assessment
QePMS	Quantum Electronic Patient Monitoring System
RISE	Reaching Impact, Saturation, and Epidemic Control project
SIGDEP	Système d'Information et de Gestion, Dossier Electronique du Patient (Information and Management System, Electronic Patient Records, Côte d'Ivoire)
SIR	susceptible-infected-removed
SMOH	State Ministry of Health (Nigeria)
TB	tuberculosis
THIS	TB/HIV Information System
TOT	training of trainers
TWG	technical working group
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development

IN MEMORIAM:

We are grateful to have worked with Fredrick Wamala, who served as project manager for Data.FI/Uganda with IMC Worldwide and shared his wonderful photographs with us for this report. Fredrick died in May 2021 from complications of COVID-19 in Kampala, Uganda, one of the more than three million people lost to the pandemic globally. The Data.FI family extends our heartfelt condolences to his family and friends.

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 that serve public health goals and protect clients' rights—from streamlining information needs to building sustainable and scalable data systems that support continuity of client care and robust analysis. 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.

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. The project 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, 2020–March 31, 2021), Data.FI implemented work in 19 countries and provided support to USAID at the central level. This report summarizes our work during the first six months of Fiscal Year 2021.

Catalyzing Innovation to Find 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, finding new ways to reach HIV epidemic control and mitigate the impact of COVID-19 through improved use of data.

Data.FI is focused on improving continuity of care. In **Uganda**, Data.FI is using a "privacy by design" unique identification approach to develop a mobile and web-based application to identify key populations to safely access HIV services, and support systems to retain clients in care. In **Burundi**, Data.FI is leading a biometric unique identification initiative for HIV clients accessing treatment and care services—the first of its kind in the country. The biometric system will ensure clients accessing multiple health facilities are counted only once, and their medical records are available to clinicians so they can avoid an interruption in HIV treatment.

In **Mozambique** and **Nigeria**, Data.FI applied a machine learning (ML) model to predict interruptions in treatment using de-identified electronic medical record (EMR) data, combined with artificial intelligence-enhanced satellite imagery and other publicly available data. These types of insights can be gained in near real time by service delivery partners, once the model is deployed in the EMR systems, allowing partners to focus resources on those who need adherence support most.

Accelerating Data Analysis and Use

Data.FI ensures that the end-user and decision maker is at the forefront in 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.

Under the **West Africa Regional Support** activity, Data.FI worked with USAID/PEPFAR-supported implementing partners (IPs) in Burkina Faso, Ghana, Liberia, Mali, Senegal, and Togo to improve PEPFAR reporting and to apply lessons learned from implementing weekly epidemic control rooms in Nigeria. In Burkina Faso, these action-oriented data review meetings have been institutionalized.

Data.FI builds user-focused decision support tools. Data.FI developed a **human resources for health** (HRH) optimization solution to support PEPFAR teams in strategically allocating HRH to achieve program targets. In **Mozambique** we are developing a data analytics platform that combines data across the HIV care continuum. This tool will incorporate functionalities for deep-dive analyses and data interrogation, allowing the government and partners to triangulate health data across disparate data sources, enabling more insightful analytics to drive decision making.

Data.FI is conducting high-impact data analyses for USAID. Data.FI applied ML techniques to estimate population size and conducted vulnerability mapping of adolescent girls and young women in Uganda, Tanzania, Haiti, and eSwatini in support of **DREAMS** (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) programming. We also developed methods for analyzing the cost and impact of different **orphans and vulnerable children** (OVC) service delivery models, and the contribution of OVC programs to clinical indicators; analyses were conducted in Tanzania and Nigeria, and Botswana, respectively.

Optimizing and Scaling Health Information Systems and Digital Solutions

Data.FI optimizes HIS to improve continuity of care and generate data for epidemic and program performance monitoring, following best practices in the software development lifecycle.

Data.FI is enhancing and scaling EMRs. In **Nigeria**, Data.FI is leading a cross-partner community of practice to optimize an integrated open-source EMR system. Data.FI released LAMISPlus v1.2 during the reporting period and conducted a training of trainers and user acceptance testing in 20 USAID-supported health facilities. In **Burundi**, we supported interoperability between the HIV EMR (SIDAInfo) and the District Health Information Software Version 2 (DHIS2). We are also in the process of replatforming SIDAinfo to be online and networked across country sites, as well as interoperable with a biometric unique identification (UID) server. Data.FI completed the initial development and launched at 11 health facilities during this reporting period. In Namibia, Data.FI supported scale-up of the Quantum Electronic Patient Monitoring System (QePMS), extending the EMR system to an additional 166 facilities.

In **Zimbabwe** we are harmonizing data capture across six implementing partners in preparation for the country's first integrated OVC case management system. In **Nigeria**, Data.FI is working in close collaboration with the government and partners on the Nigeria OVC management information system (NOMIS). This period, Data.FI held a bootcamp with stakeholders from 12 organizations to build consensus on a NOMIS enhancement strategy. In Côte d'Ivoire, we made OVC and DREAMS databases interoperable to track layering.

Data.FI is integrating client records across systems in support of advanced analytics. In this reporting period, Data.FI completed and demonstrated Version 1 of **South Africa's InfoHub**—a national data warehouse that serves as a mechanism through which disparate HIS in South Africa can be linked, providing users with insights into client well-being across the HIV cascade.

Data.FI is building digital solutions for knowledge management and e-learning. In **Tanzania**, Data.FI developed a Data Portal platform to house data reported by USAID-supported IPs in Tanzania on various health areas. In **South Africa**, Data.FI is supporting the National Department of Health in building the Knowledge Hub, an e-learning platform that offers online courses and webinars for public and private-sector health providers.

Improving Data Sources

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

Data.FI is developing and deploying efficient and fit to purpose data quality improvement strategies. We developed a simple **data quality composite score** (DQS) method that uses aggregate data to calculate three facets of data quality—completeness, coherence, and consistency. The Excel-based DQS tool, developed initially within our Nigeria program, is now being adapted and applied in other Data.FI countries, including Côte d'Ivoire.

We are working to improve data quality in a number of countries. For example, in **Burundi**, Data.FI is helping to conduct a data quality audit at 224 sites in the country—which serve 80 percent of people living with HIV on antiretroviral treatment in Burundi. We also developed a virtual data quality assessment methodology, which we will be using in the next reporting period to remotely validate the quality of COVID-19 response performance data

Data.FI is also standardizing measures. We have continued our work developing reference sheets for **COVID-19** indicators, including a suite of COVID-19 vaccine indicators currently underway. We also supported the USAID's Office of HIV/AIDS DREAMS team to standardize a set of custom indicators, indicator reference sheets, and a reporting tool. We are further exploring new metrics related to quality of life and care experience for clients, applying a **value-based care** lens to the HIV field.

Strengthening Local Partners

In line with USAID's local partner transition goals, 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.

Data.FI is strengthening collaborative enhancements to HIS and stewarding government leadership. In **Côte d'Ivoire**, Data.FI assisted the government in setting up a technical working group with partners carrying out DREAMS and OVC activities to build consensus around the functionality of the OVC database. In Nigeria, in collaboration with other partners, Data.FI supported states to establish eight emergency operations centers (EOCs) for COVID-19. Data.FI also provided technical support to build government capacity to manage the EOCs, training a total of 107 state officials.

Data.FI is also building IP capacity in strategic information. In Malawi, Data.FI is supporting a mentorship process that builds the capacity of two PEPFAR-funded USAID partners to effectively use the country's two EMR systems. Initially facility staff could not clean their own data; now staff at over 90 percent of the USAID-supported facilities are cleaning their own data.

To support USAID's goals of building the capacity of local partners, Data.FI co-created with USAID/OHA the PSICA Tool—a strategic information capacity assessment tool that can be used by local partners. Data.FI used the PSICA tool to assess a group of eight local partners from six countries (Democratic Republic of the Congo, Haiti, Kenya, Malawi, Tanzania, and Zimbabwe). Additionally, Data.FI developed an online training course for local partners on PEPFAR strategic information and DQAs. Nearly 110 participants from 29 local organizations in more than 13 countries have attended these sessions to date.

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.

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 serve public health goals and protect clients' rights**—from transforming routine data into visualizations that highlight systems performance, to building sustainable and scalable data systems that support continuity of client care and robust analysis. Data.FI works across 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 provide **rapid insight for decision making**, using advanced analytics supported by informatics—technologies fit to purpose. We help USAID and partners diagnose performance and public health challenges to best focus resources. We combine

Street scene in Kibuli on the outskirts of Kampala, Uganda. Photo by Fredrick Wamala, Data.FI, IMC Worldwide

traditional President's Emergency Plan for AIDS Relief (PEPFAR) data with non-traditional data sources, such as satellite imagery and commercial data, to fill data gaps and inform interventions. We apply advanced modelling techniques to illuminate trends and patterns, empowering users with the information they need.

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. 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. We leverage our existing network of in-country relationships to build government trust, coordinate stakeholders, and expand the pool of local partners able to respond to the HIV and COVID-19 pandemics.

PROJECT SCALE

Data.FI is a five-year global project (2019–2024) funded by 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, 2020–March 31, 2021), Data.FI implemented work in Botswana, Burundi, Côte d'Ivoire, Eswatini, Haiti, Malawi, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Uganda, the West Africa Region (Burkina Faso, Ghana, Liberia, Mali, Senegal, Togo), and Zimbabwe. This report summarizes our work.

REPORT STRUCTURE

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

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

An update on the implementation of the project's gender strategy and communications outreach is also provided. A Financial Summary, Project Indicator Results, and a list of Data.FI Products are provided in appendices.

We create solutions that can be scaled.

Impact at the Systems Level

Data.FI worked in 19 countries in this reporting period to improve HIV and COVID-19 outcomes. The map below outlines major achievements across our field-supported programs.

NIGERIA

- EMR optimization conducted collaboratively, including LIMS-EMR integration
- Documented improvements across the clinical cascade with implementation of epidemic control room methods
- Improved data quality in National Data Repository and Automated Partner Performance Reporting system (high-frequency reporting database) following uptake of Data Quality Scores

UGANDA

- OVC and AGYW size estimations provided—methods transferred to Eswatini, Haiti, Mozambique, Tanzania
- UID for KPs (KPIC) based on "privacy protection by design" developed and scaling

TANZANIA

- Developed knowledge management system for USAID

BURUNDI

- Supported interoperability between DATIM, DHIS2 and EMR
- Optimizing EMR for better tracking of clients across sites

COTE D'IVOIRE

- Developed server version of HIV EMR allowing for automated transfer of individual records across sites
- OVC and DREAMS databases made interoperable to track layering

MALAWI

- Strengthened EMR utilization of USAID service delivery IPs

NAMIBIA

- QePMS (EMR) assessments and scale-up to 166 sites. All HIV treatment sites in Namibia are now using QePMS.

ZIMBABWE

- Harmonized data collection tools across six IPs
- OVC and DREAMS integrated case management information system development

SOUTH AFRICA

- Version 1 of InfoHub, a national data warehouse, launched
- Supported Knowledge Hub development
- Machine learning, client-record deduplication solution deployed for National Department of Health across 20M records

MOZAMBIQUE

- Developing a dashboard for government that integrates health data from multiple sources

*Countries receiving Data.FI support through HOP funds are in light blue.

DATA.FI IMPACT AREA

Catalyzing Innovation to Find Breakthrough Solutions

Data.FI leverages thought leadership and cutting-edge technologies across our extraordinary consortium of partners to create and source novel solutions to the challenges that impede countries from meeting their health goals. A persistent challenge for governments, donors, and implementing partners (IPs) is ensuring continuity of treatment to achieve HIV epidemic control. Service providers need access to high-quality data to distinguish clients who have interrupted their treatment from clients who have simply changed providers (and whose record is now updated at a different point of care).

Ideally, data should encompass the client's entire care journey—from testing sites to the health facility to the laboratory and to the pharmacy or equivalent dispenser. The lack of a full client data record can lead to delays in identifying and reinstating clients who have interrupted treatment. This becomes even more important as multi-month dispensing is scaled across countries, which means providers have less frequent touch points with clients. High-quality data and decision aids can help identify clients at high risk of treatment interruption. Further, in more mature HIS contexts, countries may be able to employ predictive models within EMR systems or data warehouses to forecast treatment interruption at the client level.

In this section we share innovations in improving continuity of care—specifically, our work in developing unique client IDs, and in predicting treatment interruption. Our work to interoperate EMRs with other sub-systems is discussed in a later section on HIS.

Boda-boda (motorcycle taxi) stand in Kampala, Uganda. Photo by Fredrick Wamala, Data.FI, IMC Worldwide

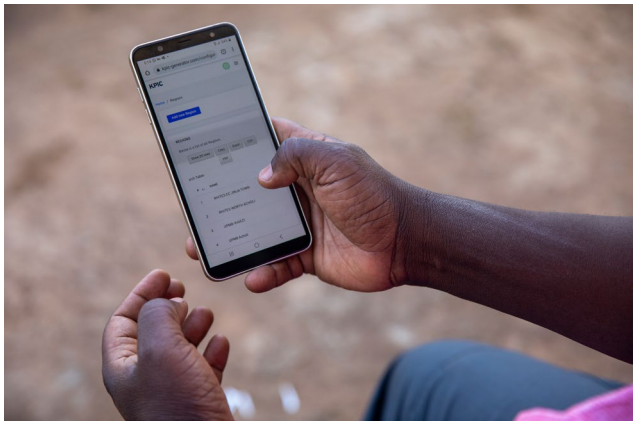
UNIQUE CLIENT IDENTIFICATION INITIATIVES

Data.FI is enhancing continuity of care through unique client identification solutions.

In **Uganda,** Data.FI is using a **"privacy by design" unique identification approach** to develop a mobile and web-based application **to identify key populations** (KP) **to safely access HIV services**, including female sex workers, transgender persons, people who inject drugs, people in prisons and closed settings, and men who have sex with men. The KP unique identification code (KPIC) does not contain any personally identifiable information and can be widely and securely used without the need for device management and expensive security infrastructure, and without identifying KPs who could face legal problems and jail time if their identities were revealed. It also supports KP groups who are transient or may access HIV services at multiple facilities—reducing the risk of double counting—and supports systems to retain clients in care.

As this unique identification solution was rolled out over the past six months, the project simultaneously strengthened knowledge among USAID, IPs, KP service providers, and facilities on the importance of data protection and privacy, and on the importance of such protections to improving access and use of HIV services. Thus far, we have conducted training in five regions across 15 facilities on the use of the KPIC. These trainings emphasized how to mitigate data protection risks, especially at service entry points in the community where mobile devices, which are used to generate IDs, can be used for both work and personal purposes, shared between multiple persons, and be easily lost or stolen.

> **"We're trying to provide confidence that KPs can still receive HIV services and be a member of a vulnerable group without having concern about being stigmatized or tracked down."**
>
> —Kelly Church, Data.FI, IMC Worldwide

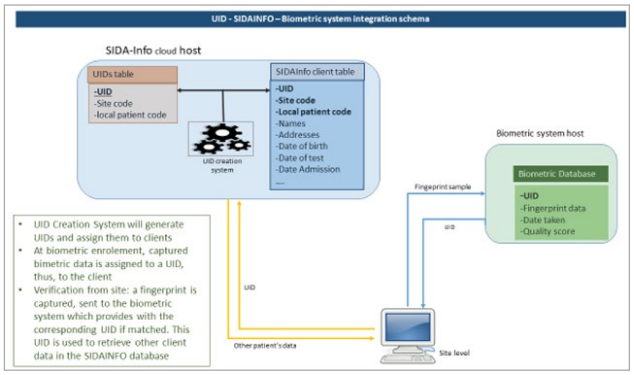


Data.FI has developed a mobile and web-based application with a unique identification approach for key populations, to facilitate their safe access to HIV services. Photo by Fredrick Wamala, Data.FI, IMC Worldwide

Participants in a training for HIV service personnel conducted by Data.FI in Uganda on the use of the new key populations unique identification code. These trainings emphasized how to mitigate data protection risks for people living with HIV, especially at service entry points in the community. Photo by Fredrick Wamala, Data.FI, IMC Worldwide

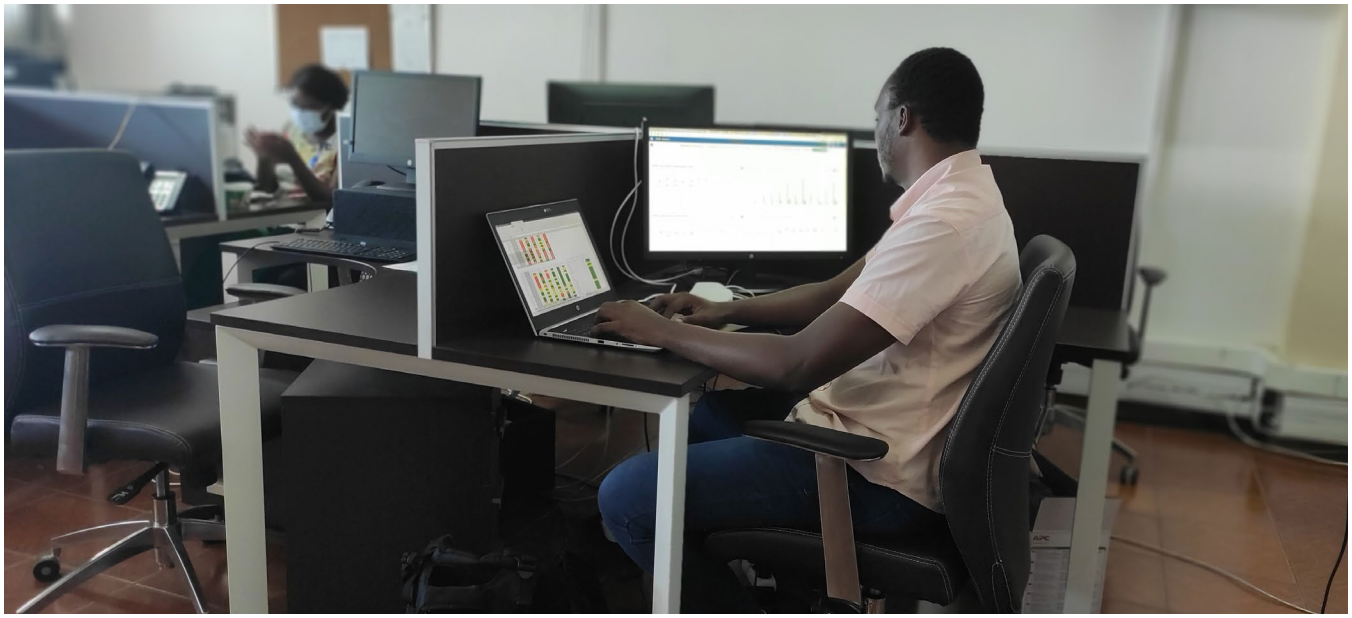
In Burundi, Data.FI is the primary digital partner of an ambitious biometric unique identification initiative for HIV clients accessing treatment and care services—the first of its kind in the country. This work is spearheaded through a government-led technical working group (TWG), which is also shepherding the transition of the HIV EMR to an upgraded, web-based version. These two integrated solutions ensure that clients can be easily tracked if they need to transfer to a new health facility, and that the service provider at the receiving facility will have their most up-to-date medical record on hand.

The biometric system will also ensure more accurate counting of clients currently in treatment and clients experiencing an interruption in treatment (IIT). With this information, government and partners can maximize available client tracing resources by focusing on clients who have had an IIT (vs. those who have transferred to another networked facility). Prior to deploying this digital solution, Data.FI undertook a risk assessment and actioned a series of risk mitigation strategies to ensure that the solution was ethically sound and would not compromise the information of people living with HIV (PLHIV) in Burundi.



Screenshot from the biometric unique identification system in Burundi designed to support continuity of care for HIV clients.

Photo by Health Policy Plus



In Mozambique, Data.FI is working closely with the Ministry of Health (MOH) to develop, implement, and sustain an interactive dashboard leveraging data from several data sources and programmatic areas to support decision making. Photo of João Machiana, a Data.FI, Jembi senior developer embedded within the MOH in Maputo. Photo by Data.FI, Jembi Health Systems, Mozambique.

PREDICTING CLIENTS LIKELY TO INTERRUPT TREATMENT

Data.FI is using machine learning to strengthen continuity of care.

In **Mozambique** and **Nigeria**, Data.FI applied a machine learning (ML) model to predict interruptions in treatment using de-identified EMR data, combined with artificial intelligence (AI)-enhanced satellite imagery and other publicly available data. In Mozambique, the model showed high predictive power by identifying which clients were at greatest risk of IIT compared with historical client outcomes. **A client's past behavior, including timeliness of attendance at past appointments and clinical history (e.g., past laboratory results), were the two most important categories of variables for the model's predictions.** These types of insights can be gained in near real time by service delivery partners, once the model is deployed in the EMR systems, allowing partners to focus resources on those who need adherence support most, moving countries closer to achieving the second HIV 95-95-95 goal.

Data.FI is now moving to this next phase of work, deploying the predictive model in the EMR system at a number of facilities in Mozambique to generate client risk scores of IIT in real time, which will be used by health workers to support client continuity of care.

This work represents an effort to leverage a variety of underutilized data sources and novel ML techniques to inform differentiated care at the client level to improve adherence to HIV treatment. The data sources used, the modelling techniques, and ultimately the delivery mechanism to provide predictions in real time to decision makers are novel.

HIV testing supplies in a rural clinic in South Africa. Photo by Elizabeth T. Robinson, Data.FI, Palladium

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 need data to measure progress against targets, allocate resources to reach the right populations, rapidly course-correct if programs are underperforming, and determine whether they are addressing the most urgent needs of people affected by HIV and COVID-19.

The objective of all of Data.FI's measurement and digital systems work is to improve performance by enhancing the data value chain—improving systems, analytic platforms, data sources, and stakeholder analysis and use of data. We help PEPFAR and local governments glean insights from data on a range of HIV services, synthesizing data across multiple sources, and we develop 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.

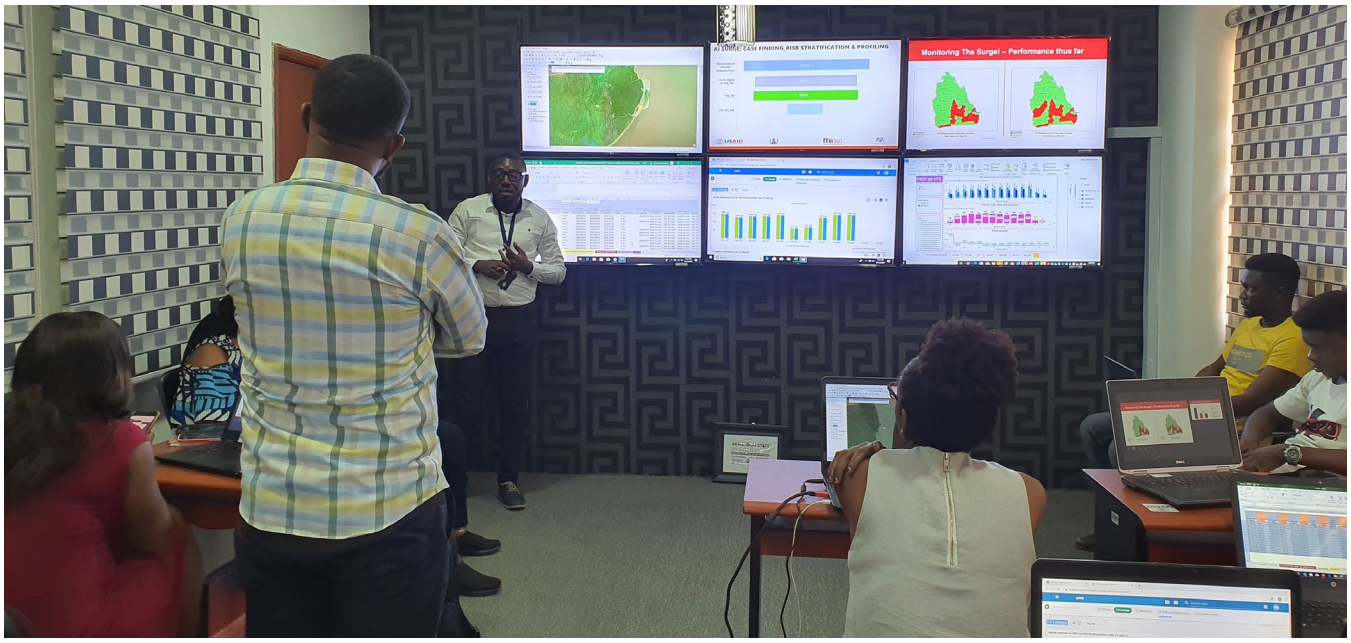
Health facility, Mali. Photo by Mary Newcombe, courtesy of Flickr Creative Commons.

Being able to understand where nurses, doctors, laboratory technicians, and other staff are currently working—and where they could be placed to maximize HIV outcomes—is of paramount importance as we get close to epidemic control in many countries. Photo of nurses during a World Bank-supported training program in Liberia by Dominic Chavez, World Bank, courtesy of Flickr Creative Commons.

91
data review meetings held

ROUTINE DATA REVIEW STRUCTURES

Under the **West Africa Regional Support** activity, Data.FI worked with three PEPFAR-supported USAID IPs in six countries to adapt and apply our "Epidemic Control Room" (ECR) intervention from Nigeria to the broader West African context. Working with IPs in Burkina Faso, Ghana, Liberia, Mali, Senegal, and Togo, we supercharged existing data review meetings through training in data analysis and mentorship in **action-oriented data review meetings**. Data.FI worked with IPs in each of the six countries to develop standard visualizations for key indicators of interest and trained data review meeting facilitators at the national level to critically interrogate the data with participants at the subnational level. These improvements included making data review meetings shorter, more participatory, and focused on priority indicators. Data.FI emphasized the importance of inviting a broader range of MOH stakeholders, as well as health facility staff, to help identify solutions to address poor performance as identified in data reported. In Burkina Faso, the stakeholders in these action-oriented data review meetings institutionalized country ownership of the processes. They now facilitate discussions where they **interpret data, apply root cause analysis, and track progress to meeting targets**. One output of this work was a final report that provides transferrable recommendations on data review processes that promote improved data quality and use.



Weekly epidemic control room meetings using data visualization through dashboards were first held in the offices of the State Ministry of Health in Aka Ibom, Nigeria, and are now conducted both virtually and in person. Photo by Data.FI, Palladium, Nigeria.

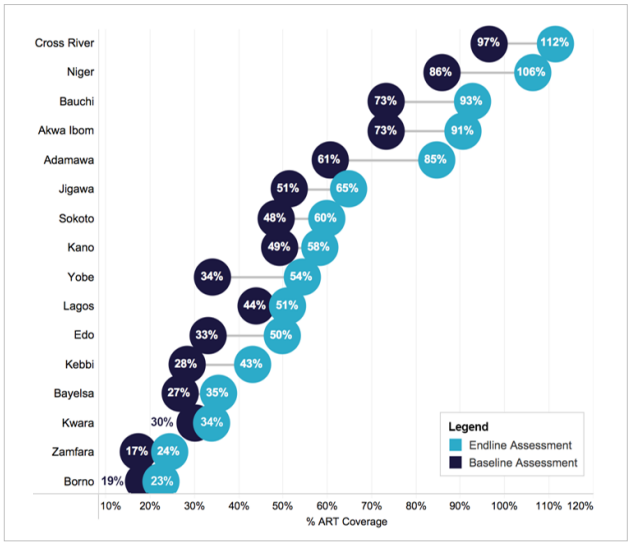
In Nigeria, building on existing data use frameworks, Data.FI continues to implement an **innovative model for participatory review of key HIV indicators that strengthens strategic information capacity by engaging multiple actors.** The ECR approach implemented by Data.FI allows decision makers to access data across disparate sources in one place to enable near real-time program quality improvement. Weekly analysis of performance against priority targets has improved transparency and enabled continuous feedback and learning for ongoing program adaptation, facilitating accountability for course corrections.

In this period, Data.FI provided support to the National AIDS Control Agency to set up a National HIV/AIDS Control Room as a regular venue for national data review meetings. Data.FI also published and shared a series of data use briefs that reported the changes in key HIV indicators before and after performance issues were surfaced and discussed in ECR meetings. The briefs, shared by the Mission with USAID teams, activity managers, and IPs, track achievements and **document data use cases, demonstrating the value of routine data use** for improved programming.

7 instances of data use

> **"There is a lot of accountability. Different stakeholders talk week in, week out. Every partner is made accountable, and the different steps are delegated to different partners, not the whole group."**
>
> —Ayator Nelson Ngusha, Data.FI/Nigeria

Improvements in ART coverage in the states supported by USAID-funded IPs

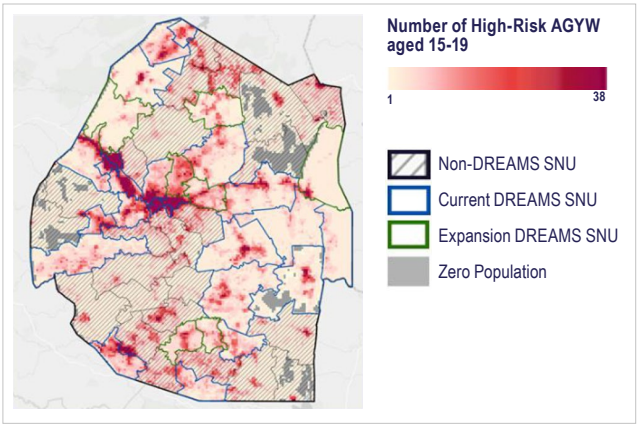


DECISION SUPPORT TOOLS

Data.FI creates practical, easy-to-use 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 through the use of technology.

In **Mozambique**, the National HIV/AIDS Program (PNC ITS-HIV/SIDA) previously relied on platforms such as District Health Information Software, Version 2 (DHIS2) and Microsoft Excel for data warehousing and analysis. Recognizing the limitations of these solutions for data exploration and analysis of complex data sets, USAID/ Mozambique asked Data.FI to support the development of a data analytics platform to **incorporate data across the HIV care continuum**, including HIV care and treatment, HIV testing, prevention of mother to child transmission, psychosocial services, and antiretroviral treatment (ART) commodity data. This tool will incorporate functionalities for deep-dive analyses and data interrogation, allowing stakeholders to **triangulate health data across disparate data sources** (e.g., comparing commodity consumption data with service delivery data), enabling more insightful analytics to drive decision making. We are building a foundation that will enable more advanced analytics and scale-up in the future.



Heat maps illustrating the population density of at-risk AGYW in Eswatini can be used by program managers to target programs and plan services efficiently. Map by Data.FI partner Fraym.

14
applications of project-branded tools and analytic approaches

At left, Amisse Momade, a senior M&E advisor with Data.FI, Jembi seconded to the MOH in Maputo, analyzing paper-based monitoring and evaluation (M&E) forms with MOH colleagues. Photo by Data.FI, Jembi Health Systems, Mozambique.

CLOSER LOOK

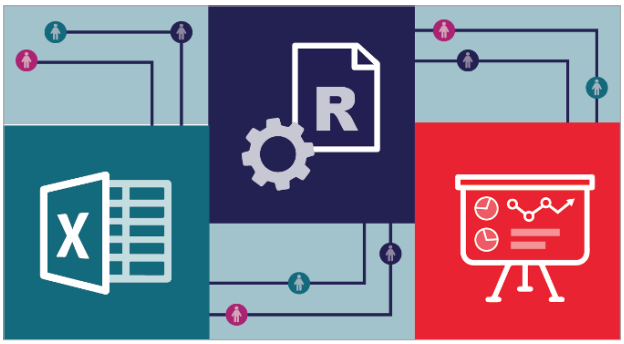
Designing with a Sustainability Lens

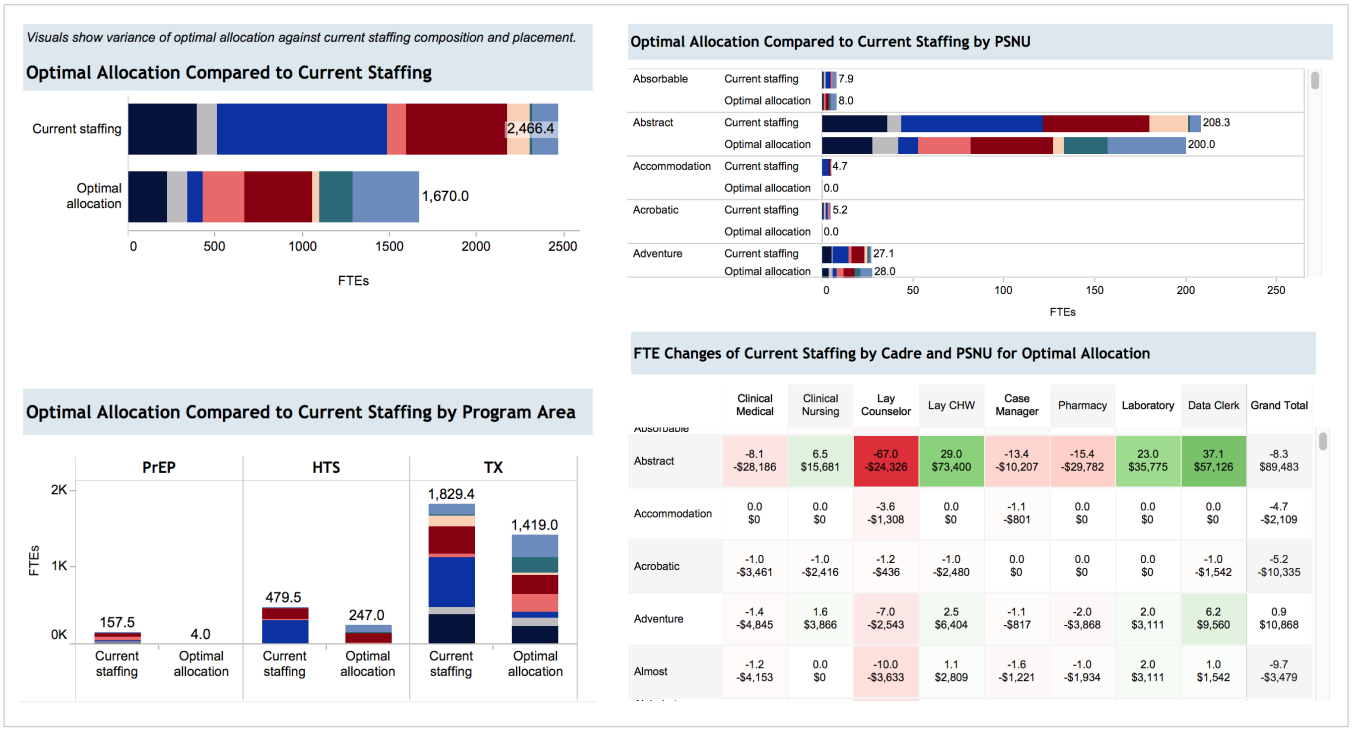
How Data.FI works with governments and partners when developing or improving decision-support tools, is key to their sustainability. In Mozambique, for example:

- *We developed a charter to formalize the project's engagement* with the Mozambique MOH. The charter outlines the roles and responsibilities of actors involved in the transition between platforms, including the **design and development of the informatics architecture**, and the development of an interactive dashboard.
- *We established a Data Systems Strengthening TWG* that meets regularly, with membership from PNC ITS-HIV/SIDA, the MOH, and USAID/Mozambique. The TWG provides government-led oversight in the development of the data analytics platform. Regular TWG meetings have **enhanced collaboration and accountability** among the parties involved to arrive at a **sustainable solution.**
- *We work collaboratively* with the MOH and USAID to define and **prioritize analytical questions** and reporting needs, and **iteratively co-create dashboards** that are reflective of these needs and preferences. Engaging in discussions about priority data visualizations provides opportunities to further clarify and ensure alignment on programmatic indicators.
- *We leverage existing data visualizations and information products,* assessing what has worked well and what more is needed to meet user needs, **ensuring that available data are accessible** for planning and program management.
- *We build in sustainability by design* to ensure transition to countries. We engage closely with the MOH to understand their resources and **capacity to analyze and visualize data**, and design system architectures and embed governance features that **align with the capacity of the MOH** and the broader HIS ecosystem.

Adequate facility-based human resources are essential for achieving all three of PEPFAR's 95-95-95 targets. Data.FI was asked by USAID's Office for HIV/AIDS (OHA) to work closely with them and the Touch Foundation to develop a **human resources for health (HRH) optimization planning solution** that shows decision makers how various staffing structures may impact program performance. The HRH Solution compares PEPFAR's current funding for staffing (by HIV cadre and geographic location) to specific program targets, flagging potential misalignments and allowing users to explore potential performance gains through reassignment of existing staff or reallocation of resources. This solution supports HRH planning for USAID operating units and USAID/OHA during annual PEPFAR planning for Country Operational Plans (COPs). After extensive testing, USAID applied the HRH Solution in ten countries between December 2020 and March 2021.

> "Understanding how many and where different health care cadres are needed for countries to achieve their achieve HIV program targets, analyzing the gaps, and optimally allocating staff to fill them will help to maximize PEPFAR investments for epidemic control."
>
> —Susan Settergren, Data.FI, Palladium





Sample dashboard from the Human Resources for Health Optimization Planning Solution showing optimal staffing allocation compared to current staffing by program area, priority subnational unit, and by cadre.

A dispensary in South Africa. Photo by Arne Hoel, World Bank, courtesy of Flickr Creative Commons.

HIGH-IMPACT ANALYSES

Data.FI is conducting high-impact data analyses and creating **interactive data visualizations** to support USAID decision making. These include targeted analyses that drive understanding of specific performance gaps, help inform target-setting, and illuminate how different components of PEPFAR programming align to achieve impact.

It is important for countries to have up-to-date estimates of the status of the HIV epidemic for country planning, impact measurement, and advocacy. Every year, national programs and the United Nations Joint Programme on HIV/AIDS (UNAIDS) use the latest country data to prepare current and future estimates of key HIV indicators (such as HIV mortality, incidence, and prevalence).

In **Burundi**, Data.FI is contributing to the national HIV estimation process by supporting workshops for the Spectrum TWG and developing plans for how outputs from the Spectrum model will be used to create targets at the national and district level. Data.FI is working closely with the National AIDS Control Program (Programme National de Lutte contre le SIDA, or PNLS) to **align these targets for routine monitoring of key HIV indicators** and integrate them into the PNLS DHIS2 dashboard, where they can be regularly reviewed to assess program performance.

34 analytical solutions

Data.FI supports USAID missions and their partners to better analyze, visualize, and use their data to inform annual COP processes. In Nigeria, Data.FI supported USAID to **develop data-informed facility-level targets** for major HIV care and treatment indicators (e.g., HTS_TST, TX_NEW, TX_CURR) based on overall COP21 targets. These targets help facilities understand their service delivery goals and monitor their performance. Additionally, these facility-level targets were used as inputs for the Prioritization and Optimization Analysis (POA) HRH analysis to **inform allocation decisions of human resources in Nigeria**.

Data.FI also conducted in-depth analyses of key performance indicators across all program areas, including orphans and vulnerable children (OVC) and gender, triangulating program data with data from the Nigeria HIV/AIDS Indicator and Impact Survey (NAIS) to better understand service coverage and gaps.

To better understand the contribution of prime vs. subpartners in meeting program targets for COP planning globally, Data.FI analyzed project expenditures and results under different partnership models using two data sources—PEPFAR **expenditure analysis** (EA) data and PEPFAR monitoring, evaluation, and reporting (MER) data. The analysis, conducted in Tanzania and Nigeria, demonstrated that standardized EA and MER datasets can be used to help understand the contribution of different types of project partners to results.

The IT team for Burundi's HIV EMR, SIDAInfo, with members from PNLS, the RISE project, and Data.FI work with staff from the Association Nationale de Soutien aux Séropositifs et Malades du SIDA (ANSS) in Kirundo to deploy a web-based version of SIDAInfo. Photo by Data.FI, JSI, Burundi.

Data.FI also worked with the USAID/OHA to develop a method for measuring the **contribution of community-based programs to clinical program outcomes** using available community program custom indicator data and required MER clinical program indicator data. We demonstrated the utility of this method in Botswana.

Results from this activity will be used by the PEPFAR **Botswana** team to inform **strategies to improve linkages and integration** of community and clinical HIV services and programming. OHA will use the results to apply the methods and lessons in its support to other operating units to conduct similar analyses. To this end, a guidance document was also developed on the methods for use by operating units in their preparations for COP21 and during other planning processes.

CLOSER LOOK

Which AGYW Are Most At Risk?

Under the Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) activity, funded through Data.FI's Headquarters Operational Planning (HOP) Bridge Funds, we applied consortium partner Fraym's novel AI/ML software to integrate risk data from population-based surveys with satellite imagery to create localized population information at a 1km square resolution in Eswatini, Haiti, and Mozambique. Data.FI applied this approach to develop risk profile maps that visually represent the density and location of adolescent girls and young women (AGYW) at risk for HIV and estimate the size of these populations—allowing USAID and partners to better understand the current reach of their DREAMS programs and better allocate resources to reach AGYW most in need of HIV prevention services. This approach was also applied in **Tanzania** and **Uganda** in support of COP21 planning discussions to inform program targets, monitor the coverage of DREAMS interventions, and prioritize new districts for the DREAMS program.

> "Understanding the human geography and the characteristics and practical decisions that can be made when you know where people are, as opposed to knowing how many people are in an administrative division is enormously valuable.
>
> We can use geospatial data to figure out where the health facilities are, where the HIV testing sites are, and where the DREAMS coordinators are going to the field. We can then plot those sites on spatial maps, and then see if there are places on these maps where resources are being allocated inefficiently."
>
> —Quinn Lewis, Data.FI, Fraym

Nearly half of the population in Uganda is under age 15. In this photo, Precious, age 9, and her older sister, Shabiba, age 13, are on their way to school. They care for their two younger siblngs, Mack, age 3, and Massy, age 1. Photo by Livia Barton, Global Partnership for Education, courtesy of Flickr Creative Commons.

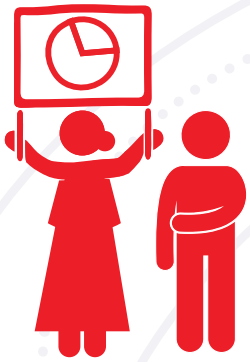
Innovations that Scale

In 2020, Data.FI was asked by USAID to develop and test solutions to improve client outcomes, PEPFAR project performance, and COP planning. Through seven HOP Bridge Fund activities, Data.FI developed three new tools, six analytical approaches, and three curricula that have not only demonstrated utility, but are now being replicated and scaled in the countries where we work. Some examples are provided below:

Optimizing Human Resources for Health

Together with Touch Foundation, Data.FI developed an HRH optimization planning solution, to support USAID operating units and OHA with HRH planning during COP.

The tool was used by 10 countries during COP21. We are now refining and expanding the capabilities of this digital solution—modifying and adding features to meet new planning priorities.



Risk Profiles to Guide Resource Allocation

Data.FI applied consortium partner Fraym's novel AI/ML software to develop risk profile maps that visually represent the density and location of AGYW considered at risk for HIV and to estimate the size of these populations.

Three USAID missions have been able to use these maps and analyses to better understand the current reach of their DREAMS programs and better allocate DREAMS resources to reach AGYW most in need of HIV prevention services.

Powerful Analyses that Capture Performance

Data.FI conducted high-impact analyses to guide USAID programming, developing a new methodology that can be applied globally, in response to the following questions:

- What is the relationship between partnership models and partner contributions to results and expenditures?
- What is the contribution of PEPFAR-supported community-based programs to PEPFAR clinical targets?

Analyses were conducted in Nigeria, Tanzania, and Botswana to inform COP21 decisions, and methodological guidance was produced for global use.

ML/AI to Predict Treatment Interruption

In Mozambique and Nigeria, Data.FI partner macro-eyes applied a ML model to predict which clients were likely to interrupt ART using de-identified EMR data, combined with AI-enhanced satellite imagery and other publicly available data.

We're now deploying this proof-of-concept model within facility-based instances of OpenMRS in Mozambique in partnership with the USAID-funded service delivery project ECHO. The model will be integrated into the EMR system in 4–8 health facilities. Health workers will receive a routinely updated line list of clients identified by the model as at risk of treatment interruption, for immediate follow-up.

Strengthening Local Partners

With USAID/OHA, Data.FI co-created the PEPFAR Strategic Information Capacity Assessment (PSICA) Tool—a tool that can be used by local partners that have recently transitioned to a prime USAID partner role, or those that will soon be transitioning. We also developed an online blended data quality and quality improvement training to support local partners' growth in PEPFAR reporting; participants from 13 countries have attended the course.

We will run two additional courses: one in French and one in English. In FY21, we expect to train a total of 230 local PEPFAR partner staff across multiple countries.

Enhancing Data Quality and Accelerating Data Use

Working closely with PEPFAR-funded USAID IPs across West Africa, we:

- Tested and refined simple and powerful HIV analyses for performance data review meetings, focusing on key HIV indicators
- Created a user-friendly Excel-based Data Quality Composite Score (DQS) tool to give a snapshot of data quality by partner and subnational unit
- Developed two curricula on holding effective data review meetings and on using the DQS tool

These slide decks, trainings, and associated analytical approaches are currently being adapted for use in performance data review and data quality review meetings in Burundi and Côte d'Ivoire

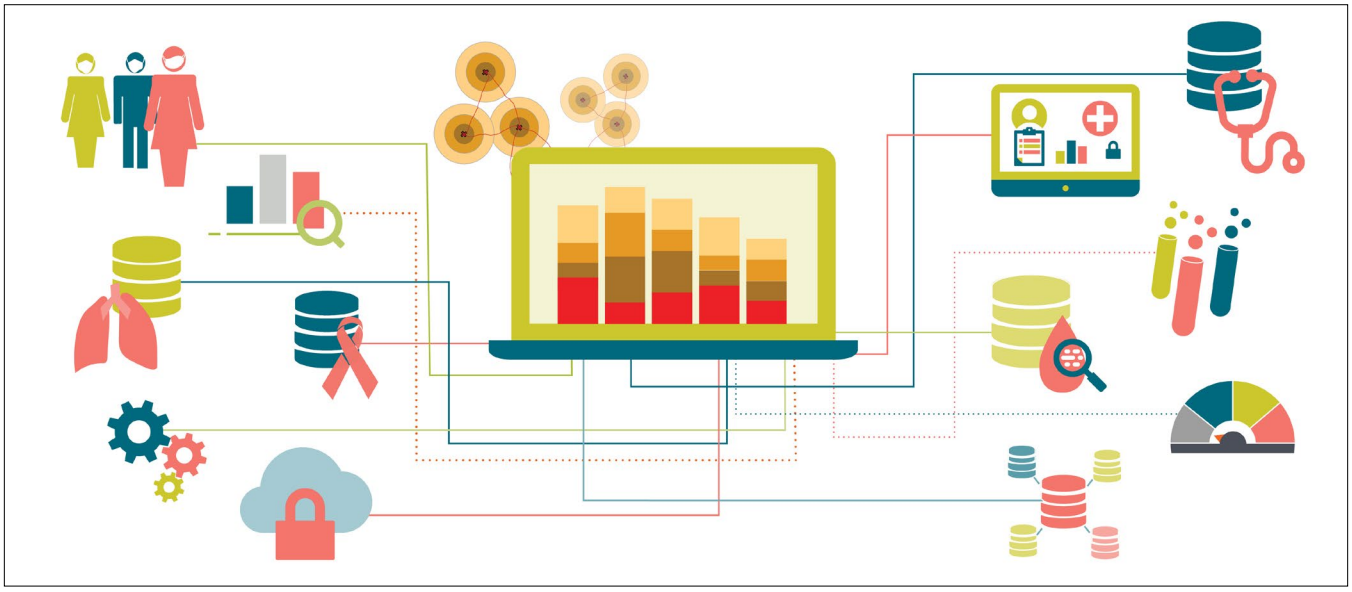
DATA.FI IMPACT AREA

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, including EMRs, to meet client care management objectives, and a harmonization of reporting systems designed to capture only what data are needed and used to plan and improve programs and track investments. Going forward, in the wake of COVID-19, there is a need to design systems more flexibly with clear change management processes to allow for agility in measurement. COVID-19 has also underlined, yet again, the need for sustainable systems aligned to the local context, governed by a coordinated stakeholder team in country, and built on open-source code.

Data.FI is partnering with governments and IPs at all levels to harmonize, optimize, and scale existing information systems. Data.FI meets countries where they are—with HIS at varying levels of maturity and scale. We optimize sub-systems, such as EMRs, for improved client care management and to meet reporting requirements. In cases where system maturity allows, we **enhance case management systems** to share information between laboratory, dispensing, supply chain, and community systems.

A data manager at the Nung Udoe Primary Health Centre in Ibesikpo/Asutan Local Government Area (LGA) in Akwa Ibom, Nigeria, working on data entry. Photo by Data.FI, Palladium, Nigeria



A systems-level approach to country digital health transformation is essential to global health resilience. Fragmented data impede action at the systems level, which is why interoperability of systems is key to achieving health goals.

Enhanced EMR systems allow for more seamless implementation of differentiated care models and **advanced analytics to better monitor the epidemic.** The project builds consensus among stakeholders on common standards for system alignment, supports improved HIS data policies and governance, and facilitates a sustainable HIS ecosystem in which HIV information systems operate. This work involves people-centered solutions, with the project serving as a neutral facilitator, bringing together stakeholders and contributing technical know-how to improve and align systems.

DEVELOPING AND ENHANCING SYSTEMS

Data.FI is enhancing and interoperating case management systems to better support clients.

Data.FI is currently optimizing case management systems in Nigeria, Burundi, Zimbabwe, and Côte d'Ivoire. We are building new system components, interoperating EMR systems with other systems, such as laboratory and OVC systems, and improving system governance.

In Nigeria, Data.FI is leading a cross-partner **community of practice** (CoP) **to optimize an integrated EMR system**, LAMISPlus—ensuring alignment across testing, treatment, laboratory, pharmacy, and commodity information systems and interoperability with the National Data Repository (NDR). Data.FI released LAMISPlus v1.2 during the reporting period and conducted a training of trainers (TOT) and user acceptance testing in 20 USAID-supported health facilities. Full deployment of LAMISPlus is expected to commence in Quarter 3 of FY21. Integration of LAMISPlus with the laboratory information management system (eLIMS) was also finalized during the reporting period, with the design of an interoperability layer with the National Integrated Specimen Referral Network Management System (NiMS) ongoing.

A next step in Nigeria is to enhance other case management source systems, including the Nigeria OVC management information system (NOMIS)—which was first developed as a data collection, rather than case management system. Data.FI is continuing our practice of building from what exists, collaboratively. In 2020, Data.FI completed an assessment of the current software and provided recommendations to reorient NOMIS, improving its usability and scalability and **strengthening standardization and data security.**

14 instances of updated documentation for software development

Data.FI utilized its bootcamp approach in collaboration with the Federal Ministry of Women Affairs in an event that engaged stakeholders from a dozen organizations to enhance the National OVC Management Information System (NOMIS). Photo by Data.FI, Palladium, Nigeria

In February 2021, in collaboration with the Federal Ministry of Women Affairs (FMWA), the custodian of the system in-country, Data.FI held a **bootcamp** with stakeholders from 12 organizations to build consensus on a NOMIS enhancement strategy. During the bootcamp, participants finalized a charter for a National Health Informatics Community of Practice (HI-CoP), enhancing both knowledge exchange and engagement among stakeholders. At the time of reporting, Data.FI had completed user requirements gathering, system architecture, and workflows. The NOMIS 3.0 system architecture is leveraging the **modular architecture and data exchange standards** adopted in the country's LAMISPlus application and the interoperability layer is based on the NDR requirements for data exchange.

One of the key tenets of Data.FI's work is **supporting government decision making** on key considerations **through the software development lifecycle,** including hosting, data access, and platform choice. In Nigeria, Data.FI built confidence and consensus on using a cloud-based server for NOMIS, which will allow direct upload of OVC program data from service delivery points to a central national repository housed with the FMWA.

We are also building an **OVC case management system in Zimbabwe** intended to harmonize data collection across six IPs for the first time. During the reporting period, we started configuring the system with the meta data, data elements, and scripted indicators. Pivoting our approach to the COVID-19 context, we have conducted user acceptability testing virtually through a series of stakeholder meetings, which provided an opportunity to strengthen indicator interpretation.

In **Burundi,** Data.FI is enhancing SIDAInfo—the national EMR system—collaboratively with two USAID-funded IPs, developing a web-based version to replace the current Access version. Data.FI completed the initial development and launched it at 11 health facilities during this reporting period. As part of our work leading the development of a biometric unique identification system, Data.FI coordinated the process to interoperate the unique ID server (M2SYS) with SIDAInfo.

> **"Data.FI has proven to be highly responsive on the OVC management information system activity, which will give us insight into granular OVC-related data to improve program design and management, particularly for children living with HIV. They have been proactive in engaging with USAID and IPs, meet deliverable deadlines, and provide excellent communication and organization."**
>
> —Sara Miner, Strategic Information Advisor, USAID Contractor, Zimbabwe

DESIGNING AND BUILDING SYSTEMS FOR SUSTAINABILITY

To ensure sustainability and country ownership, documentation is key. At Data.FI we value ensuring that everything from system architecture, software development code, data exchange workflows, data dictionaries, and user guidance is documented and accessible.

- In **South Africa**, each chart and dashboard developed for the analytics platform of the InfoHub is well documented on Confluence—including the metrics, the analysis questions, the rationale, and how filters work. On the InfoHub as a whole, Data.FI has produced extensive documentation covering the technology, software, and hosting considerations; interoperability architecture; and system administration guidance. In all cases, files are kept as part of the record with government clients and other stakeholders to ensure sustainability and transparency.
- In **Nigeria**, Data.FI has curated robust documentation for LAMISPlus, the LAMISPlus-eLIMS integration, and NOMIS—including CoP charters, user requirements, work breakdown structures, database schema, system architecture, system workflows, and mock-ups.

Passengers on a commuter bus in Bulawayo, Zimbabwe, observe social distancing while waiting to board a bus. Photo by KB Mpofu, International Labour Organisation, courtesy of Flickr Creative Commons.

DATA ALIGNMENT AND EXCHANGE

Data.FI is improving and interoperating reporting systems to support program efficiency and accountability.

Prior to Data.FI activities in **Côte d'Ivoire,** individual client data on ART were only available in facility registers. At the district level, only aggregated data—transcribed to DHIS2 from paper reports per facility—were available. Databases for OVC and DREAMS interventions were not linked to show the full coverage of OVC services, meaning managers could not determine if beneficiaries were receiving duplicate services.

Data.FI is working with the National Program for Orphan and Vulnerable Children (PNOEV) and IPs to update existing OVC and DREAMS databases to incorporate priority indicators and additional system features that will improve functionality. This will streamline the process for monitoring OVC and DREAMS program performance, **reduce parallel reporting**, and **increase accessibility and use of the OVC and DREAMS data**. In this quarter, Data.FI assisted the Ministry of Women and Family and Childhood and Seniors (MFFES) to extract OVC and DREAMS data from all 74 data coordinating mechanisms managed by IPs, social centers, and small local NGOs.

> **"I have worked on OVC programming in Côte d'Ivoire since 2007, but working on Data.FI with an emphasis on the OVC information systems has enabled me to better comprehend the enormous needs of orphans, vulnerable children, and their families and the challenges to addressing those. Even as a pediatrician, I didn't absorb that. Since the program began to collect data on orphans in 2007, those data have given visibility to this vulnerable group. Each year since then, the program has devoted more funds to meet the needs of these orphans. That is satisfying to me—that the program recognizes these needs."**
>
> –Leontine Gnassou, Country Director, Data.FI/Côte d'Ivoire

National governance and stakeholder engagement is critical to success. In Burundi, we are supporting enhancements to SIDAInfo that allow for aggregated data exchange with DHIS2 and the M2SYS server that supports the fingerprint unique ID system. Further, Data.FI supports data alignment activities in Burundi annually between DHIS2 and DATIM to enable direct data exchange between the two systems. This means that data housed in systems managed by the MOH can be shared directly with the PEPFAR information system to reduce duplicative data entry and parallel reporting structures.

Data.FI co-published guidance documents, such as user manuals, for Côte d'Ivoire's newly integrated OVC and DREAMS databases.

Photo of a National AIDS Control Program (PNLS) and Data.FI training on DHIS2 in Burundi by Data.FI, JSI, Burundi.

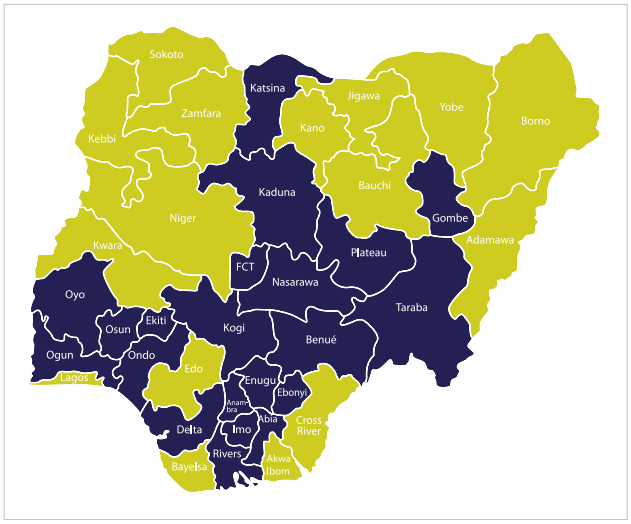
SCALING SYSTEMS

Scaled systems to 313 sites

In this reporting period, Data.FI **supported scale-up of the Quantum Electronic Patient Monitoring System (QePMS),** an improved EMR system, to 166 facilities in **Namibia**. Data.FI, through local partner IntraHealth Namibia, completed the national rollout of QePMS in December 2020 to 359 facilities in total, building on successes to scale the system to two regions at the end of FY20.

In Burundi, Data.FI **rolled out the national EMR system**, SIDAInfo, to 11 sites.

In Nigeria, after LAMISPlus testing was completed, Data.FI **scaled the enhanced system** to 31 facility sites across nine IPs (FHI 360 SIDHAS, FHI 360 SHARP TO2, FHI 360 EpiC, Jhpiego, Chemonics SHARP TO1 and TO3, Heartland Alliance, and Society for Family Health) in Adamawa, Akwa Ibom, Bauchi, Bayelsa, Borno, Cross River, Edo, Jigawa, Kano, Kebbi, Kwara, Lagos, Niger, Sokoto, Yobe, and Zamfara states.



Data.FI scaled LAMISPlus, the enhanced EMR system, to 31 facilities in 16 states in Nigeria.

Justice Haikela, IT technician, sorts client files at Tsandi Hospital, Omusati Region, one of the 359 HIV treatment sites in Namibia now using the QePMS, scaled with support from IntraHealth/Namibia and Data.FI. Photo by IntraHealth/Namibia.

Sheetekela Immanuel, data clerk at the Ongwediva Health Center, Oshana Region, Namibia, processes client records using the QePMS. Photo by IntraHealth/Namibia.

INTEGRATING INFORMATION SYSTEMS FOR ADVANCED ANALYTICS

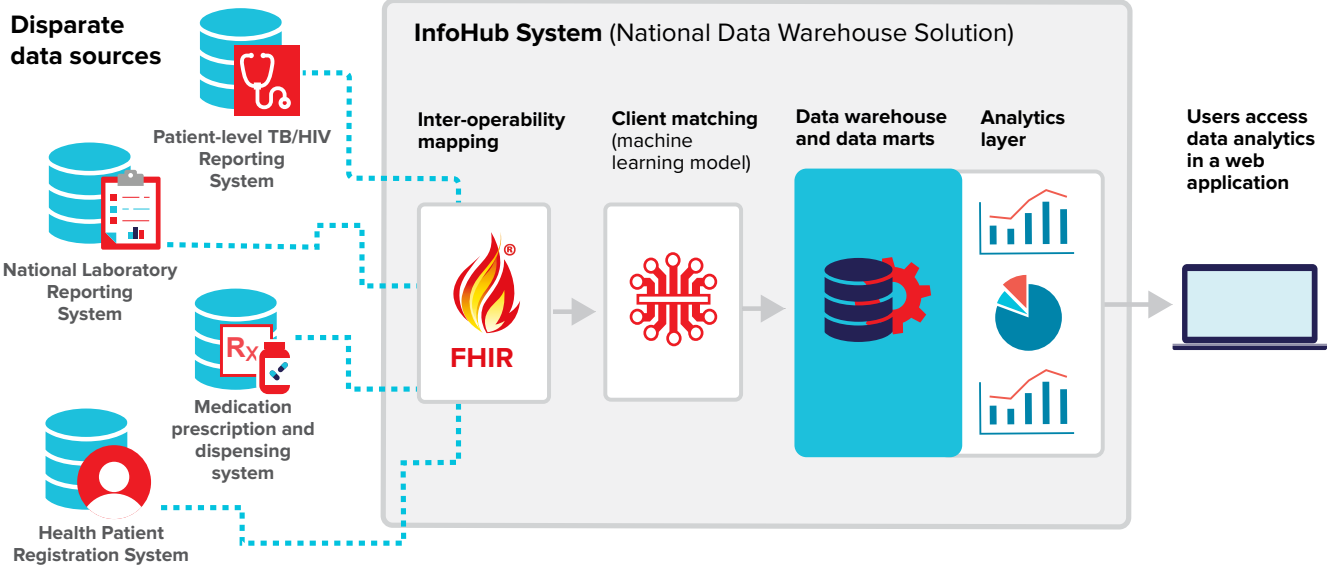
Data.FI is integrating client records across systems in support of advanced analytics

The InfoHub, formally called "Consolidated Health Informatics South Africa" (CHISA), is a national data warehouse that serves as a mechanism through which disparate HIS in South Africa can be linked. An analytical platform built into the warehouse allows for data triangulation across different systems, providing users with insights into client wellbeing across the HIV cascade. Data.FI's work in advancing the InfoHub 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 and improvement, and planning.**

In this reporting period, Data.FI completed and demonstrated version 1 of InfoHub to the NDOH and USAID. Currently, InfoHub is interoperable with the Tuberculosis (TB)/HIV Information System (THIS) repository maintained by the NDOH; and interoperability with the National Institute for Communicable Diseases system is under development. Finalized dashboards include:

- Cross-sectional analyses across the HIV cascade
- TB analytics (in support of World Health Organization reporting)
- Predictive analytics for HIV positivity and total remaining on ART
- PEPFAR MER reporting

Street scene in Durban, KwaZulu Natal, South Africa, where HIV prevalence is an estimated 27 percent among adults ages 15-49. (Kharsany ABM et al. JAMA Network Open. 2019;2(11):e1914378). Photo by Elizabeth T. Robinson, Data.FI, Palladium.



In South Africa, Data.FI is supporting the National Department of Health to implement a national HIV data architecture and warehouse solution, the Consolidated Health Informatics Solution South Africa (CHISA), called the InfoHub, shown above.

HIV testing by the TB/HIV Care Association in South Africa. Photo by CDC Global, courtesy of Flickr Creative Commons.

These dashboards, and the analyses depicted, align to an InfoHub Analytics Framework developed by Data.FI and agreed with all stakeholders. The framework outlines priority use cases and analyses across the HIV cascade by primary use (e.g., reporting, planning), and documents the rationale, methods, and considerations for each analysis. The extensive work that went into determining user requirements and documenting a framework for analyses—to ensure that stakeholders receive what they need, and not superfluous or excess information—has been critical to success so far.

The InfoHub will evolve as new data needs are identified and data sources are ingested; however, it is expected that V1 will be scaled by the NDOH this fiscal year. As a next step, the NDOH will lead stakeholder engagement meetings at the national and provincial levels. Following this, V1 is expected to be released across nine provinces. The buy-in to the existing platform is a testament to the strong relationship between Data.FI and the NDOH.

> **"The team managed to save the InfoHub initiative in such a short time (a matter of a few months). They have been a wonderful team to work with. Responsive, competent, and so very passionate about the work they are doing."**
>
> – Tiwonge Mkandawire, Health Systems Strengthening Team Lead, USAID/Southern Africa

DIGITAL SOLUTIONS

Data.FI is building digital solutions for knowledge management and e-learning.

In **Tanzania**, Data.FI developed a **Data Portal** platform with two modules: (1) a system for USAID to house data reported by USAID-supported IPs in Tanzania on various health areas, including HIV, maternal and child health, family planning, and malaria, and (2) a searchable system to manage and store in one central place all routine performance reports, abstracts, and manuscripts generated by USAID IPs.

Data.FI's task was to design the document management module to categorize and catalogue such documents for easy and fast retrieval. Now in beta version, the module supports role-based access to materials submitted to USAID in Word, PowerPoint, Excel, and PDF formats with distinct roles and privileges for authors, reviewers, and approvers. USAID can now track documents of various types uploaded by authors and reviewed and approved via several steps set in place through a workflow, which allows comments to be logged centrally and avoids version control issues. Once completed and operationalized, version 1.0 of the document manager will automate this process. The data reporting module of the portal is also in beta version. Next steps for both modules are user acceptance testing, fixing bugs, and responding to requests for enhancements.

People debark from a ferry outside of Ifakara in south-central Tanzania. Nationally, Tanzania has made significant gains in the scale-up of its ART programs. Photo by Frans Peeters, courtesy of Flickr Creative Commons.

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 HIV-positive clients and viral hepatitis. Given the pandemic, there is a huge demand for the hub's e-learning materials on COVID-19—including on clinical case management and infection control, COVID-19 laboratory tests, and adult primary care.

Data.FI is playing an important role providing online courses, in-service training, and interactive webinars via the Knowledge Hub to support mentorship and knowledge development of frontline healthcare workers delivering clinical care. This past quarter, more than **26,500 healthcare workers completed training through the online platform to serve as COVID-19 vaccinators** for healthcare workers nationally. The country's goal is for 300,000 to take the online training.

> **"All over the country healthcare workers are better able to respond to the needs of their clients because of the Knowledge Hub."**
>
> — Caleb Wang, Regional Training Center Manager, Northdale Hospital, KwaZulu Natal, South Africa

The Molweni Clinic in peri-urban eThekwini in KwaZulu Natal has about 2,700 people on ART. There are 13 nurses at Molweni who have completed COVID-19 vaccination training.

The Qinelani clinic (red roofs in this aerial image) lies deep in the rural UMzinyathi District of KwaZulu Natal, South Africa, more than 10km from a tar road. The clinic serves about 570 people on ART. One staff member at the clinic has been trained on COVID-19 vaccination.

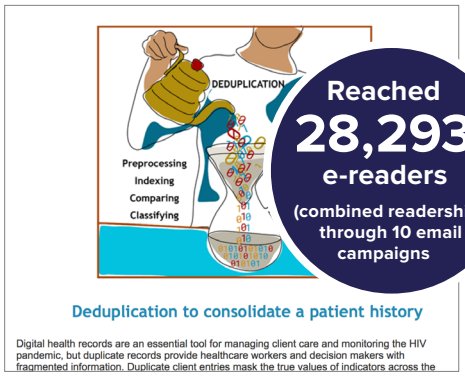
With donor funding for system management ending in 2021, there is an urgent need to transfer full hub ownership to the NDOH. Upon request from USAID, Data.FI is working to provide technical support to the overall Knowledge Hub system, increase demand and use of hub resources, and eventually transition sole ownership of the system to the NDOH. Our primary focus, working with NDOH's Human Resources Directorate, has been to ensure the hub can be **institutionalized within the department** with adequate human and financial resources to maintain the system.

To this end, Data.FI has developed a framework for the creation of Knowledge Hub courses that identifies the process steps and the stakeholders needed to **guide the transition strategy**. The framework streamlines how users—including content creators—understand, engage, and leverage the platform for course hosting, webinars, and sharing integral public health resources. To ensure that everything can be transitioned smoothly, Data.FI is putting the needed documentation in place as a reference—from server maintenance to course development. Data.FI is also working to ensure that content development is continually supported in the future.

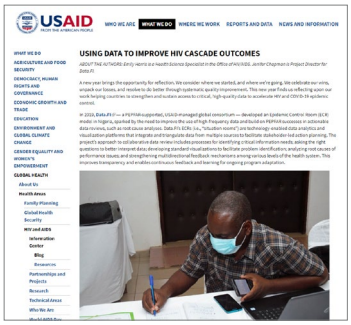
Engaging Audiences with Communications Outreach

Data.FI is ramping up engagement with audiences through multiple communication platforms. Readers include development agencies, donors, in-country entities, USAID collaborating agencies and projects, universities and research institutes, and news media.

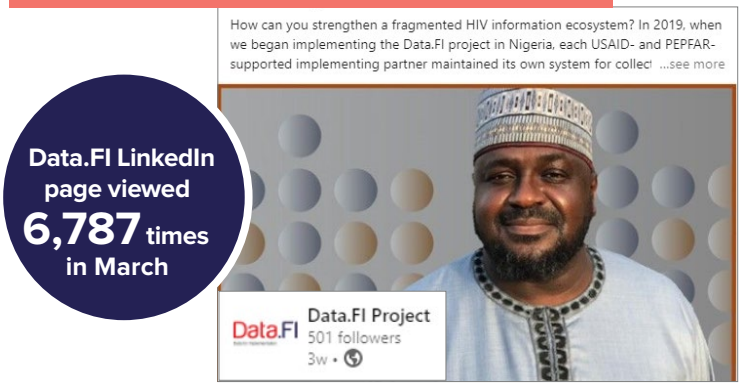
EMAILS ON INNOVATIONS



BY-LINED BLOGS



FIELD PERSPECTIVES AMPLIFIED VIA SOCIAL MEDIA



DATA.FI IMPACT AREA

Improving Data Sources

In the fast-paced HIV response, USAID, IPs, and governments need trusted data at their fingertips so that they can quickly pivot to meet their clients' needs. Yet, when decision makers lack trust in the available data, they cannot be sure which interventions are making a difference and may hesitate to make program changes that could ultimately save lives. Or decision makers may assume that they are meeting HIV performance targets, but ultimately lack the quality data to support their assumptions.

Data.FI builds smart systems that instill confidence among decision makers in their data. Improving data sources for digital health systems involves multilevel interventions to enhance data quality in a manner appropriate to the country context. The steps include clearer indicator definitions; deduplicating data; data quality assessments; and ensuring that EMRs are capturing current treatment 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.

An Uyo LGA M&E officer at the Uyo Base Primary Health Centre removes client folders during one of the joint visits to the center by Data.FI and the State Ministry of Health. Photo by Data.FI, Palladium, Nigeria.

Data.FI staff conduct a data validation exercise outside of a facility in Akwa Ibom, Nigeria. Photo by Data.FI, Palladium, Nigeria.

DATA QUALITY IMPROVEMENT

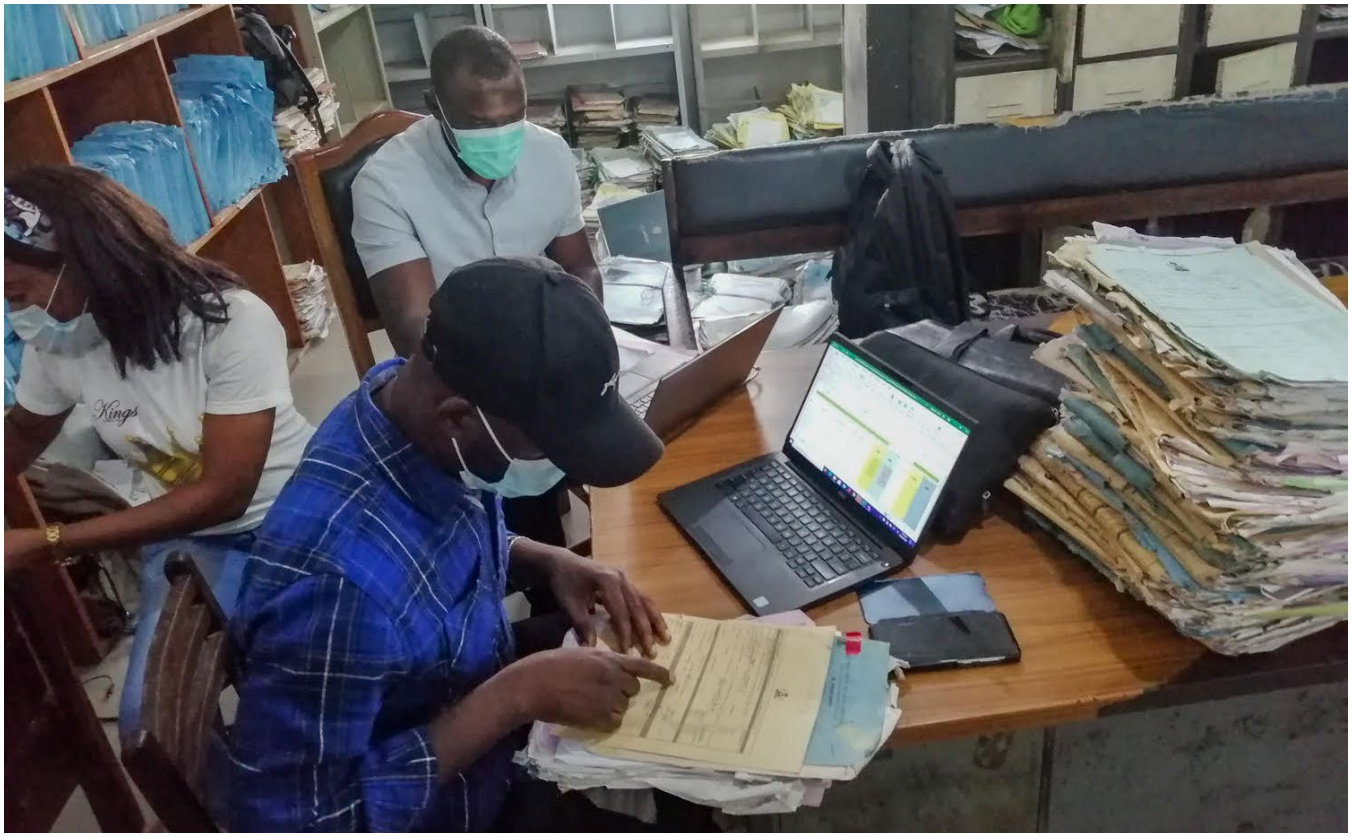
Data.FI is deploying efficient and fit-for-purpose data quality improvement strategies.

There are many approaches to improving data quality, including routine data quality support and larger non-routine data quality assessments that support a broader understanding of the quality of key performance indicators through site-level verification.

In **Burundi**, Data.FI is supporting both the routine and periodic assessment of data quality in service of the Programme National de Lutte contre le SIDA et les IST (PNLS/IST). Data.FI/Burundi submits monthly reports to PNLS and IPs that pinpoint data quality issues and suggest ways to address them.

During a PEPFAR partner meeting in December 2020, Data.FI shared an analysis comparing the national HIV statistics from DHIS2 and DATIM that highlighted discrepancies between these sources. Of particular importance was low completeness of HIV program data in the national DHIS2, at less than 80 percent at the reporting deadline. Data.FI provided partners with a monthly data quality analysis along with **actionable site-level recommendations** for them to address the discrepancies. By February 2021, DHIS2 data completeness for HIV program data for the October–December 2020 period increased to 100 percent. This harmonization achievement ensures that PEPFAR and PNLS have access to the same data. In addition, this Data.FI support is improving collaboration among IPs by facilitating review of HIV program performance on an ongoing basis.

This year Data.FI is also part of a cross-partner and cross-donor data quality assessment (DQA) TWG that is supporting the PNLS to conduct a data quality audit at 224 sites in the country—which serve 80 percent of PLHIV on ART in Burundi. Data.FI worked closely with PNLS, UNICEF, the World Health Organization, the Global Fund to Fight AIDS, Tuberculosis and Malaria, Enabel (the Belgian Development Agency), and other PEPFAR IPs to develop a robust DQA methodology. Data.FI is now leading the data collection training, including developing data collection tools and designing training materials. Data.FI will be primarily responsible for working with the PNLS on analyzing data and presenting findings. Data.FI will also be supporting the PNLS and partners to take action to improve data quality, informed by the results of the DQA.



In collaboration with USAID, Data.FI staff members Evans Ondura and Ayator Nelson Ngusha conduct a folder audit during a data quality assessment at General Hospital Ikot Ekpene in Akwa Ibom State, Nigeria. Photo by Data.FI, Palladium, Nigeria.

Innovations in DQA methods. To support USAID in validating the quality of reported COVID-19 response performance data, Data.FI developed a fully virtual DQA methodology—maximizing in-country IP staff and technology. All assessment interviews and data validation will be conducted remotely, using Zoom, Skype, WhatsApp, and telephone. For record reviews, we are using electronic sources where possible. For paper records, we will view/validate these using video conference platforms. Thoughout implementation, we will assess this approach for application in other contexts and for other emergency responses.

10
partners/subnational units demonstrated improved data quality

Agile, **easy-to-deploy data quality assessment solutions** that show change over time are needed to rapidly diagnose problem areas and help focus limited resources on low-performing sites in between more substantive data quality assessments. Through the project's experiences strengthening data quality across partners in Nigeria, **Data.FI developed a methodological intervention—a simple data quality composite score method**. The approach uses aggregate data to calculate three facets of data quality—completeness, coherence, and consistency—using an Excel-based tool.

The DQS tool is now being adapted and applied in other Data.FI countries. For example, in Côte d'Ivoire we conducted a data quality desk review using the adapted DQS tools and held data review meetings on OVC indicators at 15 regional social service centers and at the central level. The tool and discussion around assessment findings revealed significant confusion with OVC indicators—which we are now working closely with the government and partners to address.

OVC PROGRAM DATA

Data.FI Is Improving Monitoring Systems, Care Management, and Data Quality for OVC programming

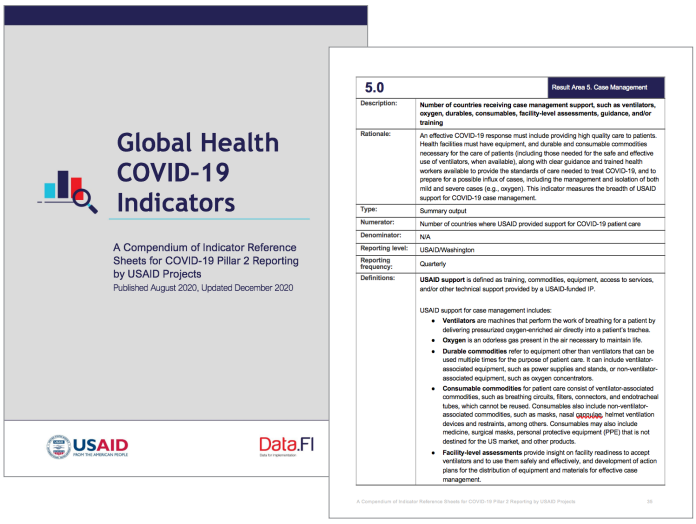
- In Nigeria, Data.FI is working in close collaboration with the government and partners on enhancing the Nigeria OVC management information system (NOMIS).
- In Côte d'Ivoire, Data.FI worked with the National OVC Program to finalize two indicator reference sheets for OVC. To emphasize these indicator definitions, Data.FI held regional and national data review meetings and conducted supportive supervision in 15 social centers.
- In Zimbabwe, Data.FI is creating an individual-level monitoring system for OVC data, where new indicators will be used to monitor OVC who are HIV-positive, including their viral load.
- In Nigeria, Data.FI conducted ad hoc analyses of OVC custom indicators, supported analyses for COP21 planning, and reviewed new OVC tools through participation in review forums set up by the USAID-funded ACHIEVE project.
- Data.FI is supporting USAID/OHA to develop implementation guidance for partners developing or adapting electronic case management systems (eCMS) within OVC programs.

Improving OVC program performance

Data.FI collaborated with OVC and HIV treatment IPs in Akwa Ibom State, Nigeria to conduct desk reviews with facility validation to address discrepancies in the number of OVC ages 0–14 currently on treatment. Data.FI analyzed and visualized the pediatric treatment data reported by the IPs, convened meetings with the IPs for feedback on the facility validation process, then developed visualizations of the outcome of the data reconciliation process. This work informed planning by the IPs—the Center for Clinical Care and Research Nigeria (CCCRN), FHI 360, and Reaching Impact, Saturation, and Epidemic Control (RISE)—for activities to achieve pediatric ART saturation, including to establish a bilateral referral system. Data.FI's support contributed to significant improvements in the TX_CURR data gap reported by OVC and HIV treatment IPs, which decreased from 3,150 clients to only 47.

Girls in Côte d'Ivoire. Photo by Direct Relief, Courtesy of Flickr Creative Commons.

Health worker prepares to transport vaccines at Osan Air Base, Korea. Photo by Jordan Garner, Courtesy of Flickr Creative Commons.



Data.FI is supporting USAID's Bureau of Global Health's COVID-19 response by co-creating harmonized indicators for the emergency response.

IMPROVING MEASUREMENT

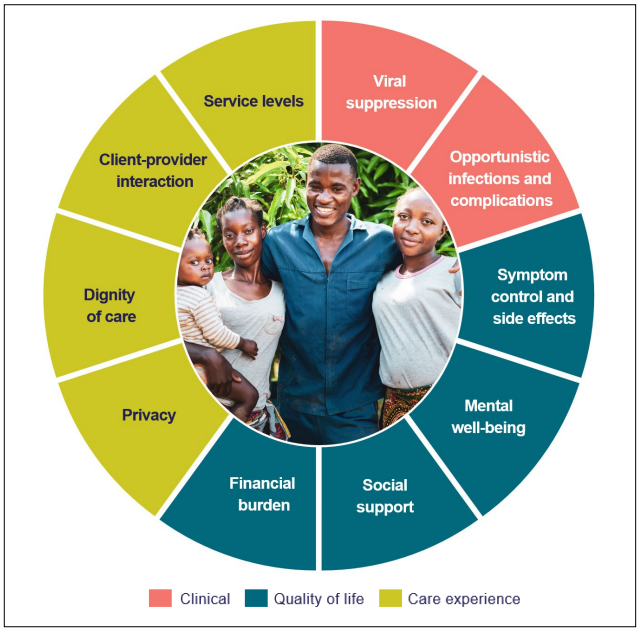
Data.FI is improving accountability by strengthening how performance is measured.

Over the past six months, we have continued our work to support improved or new detailed performance indicator reference sheets (PIRS) so that USAID and partners have indicator definitions that can be easily referenced to ensure that the data reported are consistent and can be compared across partners and countries. Building on our work co-creating the **first-ever set of COVID-19 indicators for IPs** supported by the USAID Bureau for Global Health, we are now developing a suite of COVID-19 vaccine indicators to support quantification of results and accountability in this critical global response. We also supported the USAID/OHA DREAMS team to standardize a set of custom indicators, indicator reference sheets, and a reporting tool.

> **"Just noting with thanks the great work Data.FI did supporting working with major partners for the COVID-19 supplemental funding early in the response to ensure we had good PIRS, and glad to see Data.FI's continued engagement in this area."**
>
> —Marc Cunningham, Senior Advisor for M&E, Maternal, Neonatal and Child Health, USAID

We are also exploring new metrics related to quality of life and care experience for clients, **applying a value-based care lens to the HIV field.** Routinely measuring these outcomes will provide an opportunity to improve clinical practice delivery and support innovations that target improvements in quality of life. While quality of life is an important outcome for clients in and of itself, it is also an important determinant of whether clients stay in treatment. This incorporation of the client's perspective in their routine care both at the client level and the programmatic level is an innovative step.

Human-Centered Outcomes for HIV



Based on findings during a landscape assessment and key informant interviews, Data.FI synthesized the following parameters for determining a set of metrics to measure what matters most for people living with HIV.

General Hospital of Beni, North Kivu Region, DRC. Photo by Vincent Tremeau/World Bank, Courtesy of Flickr Creative Commons.

DATA.FI IMPACT AREA

Strengthening Local Partners

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 information systems and digital solutions.

We work with ministries of health and their partners to develop and build open-source technology solutions such as South Africa's InfoHub, to provide impartial, evidence-based advice on policies and protocols, such as systems interoperability and data security; and work side-by-side government counterparts to transfer leadership skills in data review, interpretation, and action planning.

We are also working with local digital health and technology partners for systems and software development and deployment, curriculum development and training, and analytics. These partnerships often involve assessing and strengthening local partners' organizational as well as technical capacity with the aim of expanding the availability of local resources to promote sustainable, country-led solutions for achieving and maintaining epidemic control.

During this reporting period, Data.FI worked with stakeholders in Ghana to strengthen their mastery of PEPFAR data analysis and review processes. In this photo, fisherman repair nets in Cape Coast, Ghana. Photo by Willemstrom, courtesy of Flickr Creative Commons.

Data.FI conducted a training of trainers on the use of upgraded OVC and DREAMS databases in Côte d'Ivoire. Photo by Data.FI, JSI, Côte d'Ivoire.

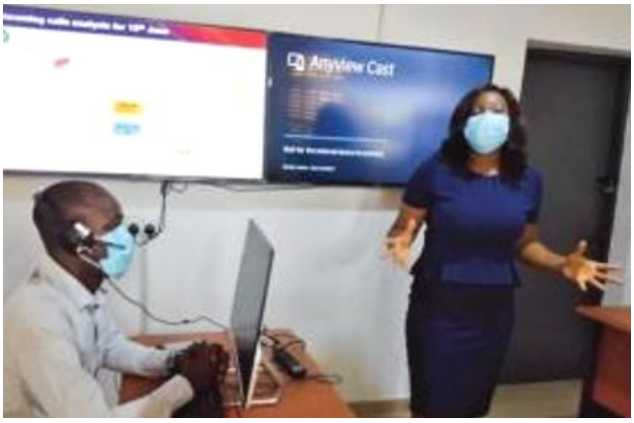
STRENGTHENING GOVERNMENT LEADERSHIP

Data.FI is strengthening government HIS leadership.

In Côte d'Ivoire, Data.FI assisted the PNOEV to set up a TWG involving partners carrying out DREAMS and OVC activities. Participants in the TWG began working collaboratively to configure additional technical requirements and improve the use of new functionalities of the OVC database. In November 2020, the project organized a national virtual meeting for stakeholders to collaboratively develop a solution to remaining technical challenges, such as how to incorporate new OVC indicators and automate reports in the OVC program and DREAMS databases. The meeting approach itself embodied the solution to transitioning to the new system: **collaborative problem-solving focused on data quality and performance.** PNOEV staff, USAID team members, and M&E officers from partners such as Save the Children, Health-Hope Côte d'Ivoire (SEV-CI), and the International Rescue Committee (IRC)—used Trello to **document requirements for software enhancement,** a best practice for **collaborative design.** Through PNOEV's leadership and the supportive supervision provided by Data.FI, stakeholders are directly contributing to the elaboration and validation of a national plan for management and administration of the databases.

Emergency Operations Centers to Support the COVID-19 Response

Working in collaboration with the Jhpiego's RISE project and FHI 360, Data.FI **supported the Nigerian government's COVID-19 response across nine USAID-supported states**. Data.FI supported state governments to set up functional 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. Strategic information consultants



Strategic information consultant making a presentation during the virtual commissioning ceremony of Edo State EOC.

Data.FI facilitating a capacity-building session on EOC management at the Akwa Ibom State EOC in Uyo.

A training session at the EOC in Kano State, Nigeria. Photos by Data.FI/Nigeria.

embedded in each state participated in data review meetings at the EOCs with state COVID-19 response teams, state ministries of health, partners supporting the response, and other stakeholders. Data.FI set up the EOCs and specifications for needed equipment, which RISE procured, and Data.FI built stakeholder capacity to run the EOCs. This included trainings data analysis, developing daily and weekly briefs and **using geographic information system (GIS) data**. In November 2020, Data.FI held trainings in support of the COVID-19 EOCs in Akwa Ibom, Cross River, Kano, Niger, Edo, and Oyo states, training a total of 107 state officials (67 males, 40 females).

The Data.FI team also supported the government to monitor the effect of lockdown on key COVID-19 indicators. Data.FI conducted weekly **analyses of COVID-19 data by triangulating Google mobility data**, which tracks percentage changes and deviation from the normal on factors such as working from home and visits to parks, supermarkets, and pharmacies, **with Nigeria Centre for Disease Control (CDC) data** on COVID-19 testing outcomes, to highlight the effect of social distancing strategies implemented by the government. A dynamic dashboard was developed for state governments to track trends across different states.

Further, in collaboration with state teams, Data.FI projected essential supply requirements for the COVID-19 response applying **epidemiological modelling**. To institutionalize and sustain the use of the modelling tool by the states, Data.FI conducted a three-part virtual training series on the COVID-19 susceptible-infected-removed (SIR) model.

155
attended sessions on COVID-19

CLOSER LOOK

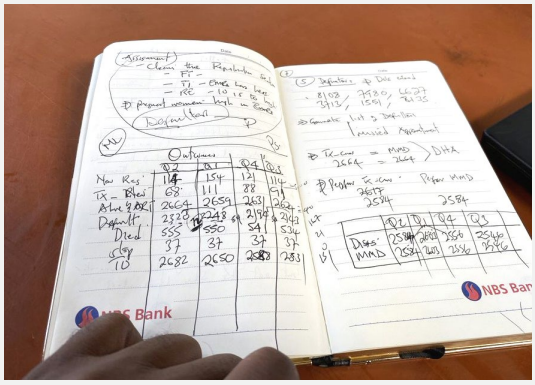
Strengthening Partner Capacity

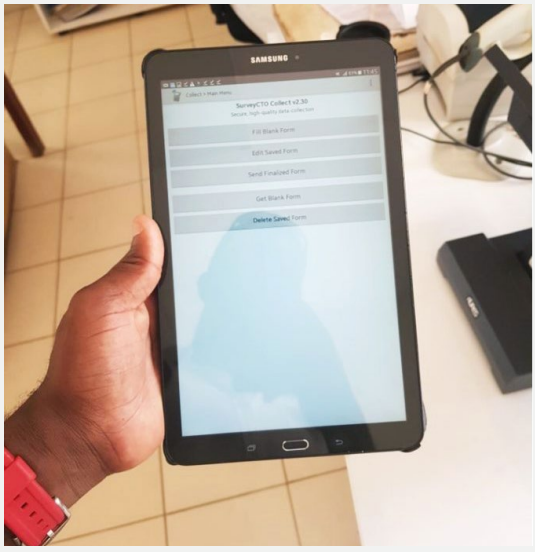
In **Malawi,** Data.FI is leading a mentorship process that builds the capacity of two PEPFAR-funded USAID partners, Partners in Hope and Baylor, to effectively use the country's two EMR systems. This **process supports the partners in all stages of the data life cycle**—assessing the data, supporting data entry, and ultimately, building capacity to use quality data.

Data.FI conducted TOT workshops for Baylor M&E officers and training for Partners in Hope data clerk mentors on EMR data cleaning, extraction, and use. Workshops were followed by joint site visits to facilities with IPs, MOH staff, and Elizabeth Glaser Pediatric AIDS Foundation/ Malawi (EGPAF), an IP responsible for the development, implementation, and maintenance of the EMRs across both Centers for Disease Control- and USAID-supported facilities in Malawi. During these visits the trained trainers took the lead in mentoring facility-based teams in data access and use through **collaborative review of actual facility data** with "light touch" support from Data.FI. The site visits provided an opportunity to measure the success of the Data.FI trainings and the capacity of the M&E officers to mentor others in their district.

> **"Because IP facility staff are entering the data, they're directly influencing good quality data. At the end of the day, we want our partners to completely take charge of the EMRs at facility level and use the data for decision making and reporting."**
>
> –Chimango Munthali, Data.FI, Right to Care

A facility-based team at Kabudula Community Hospital, Malawi—led by the M&E director of Partners in Health and supported by a Data.FI technical advisor—validates tuberculosis preventive treatment (TB_PREV) reports in the EMR. Photo by Data.FI/Malawi.





Many of the M&E officers who participated in the TOT workshop have started taking the lead in building the capacity of facility-based data handlers, including MOH team members at the facility level. **Facility-based IP staff are** now **leading data cleaning and reporting processes**. Initially facility staff could not clean their own data; now staff at over 90 percent of the USAID-supported facilities are cleaning their own data. IPs, eHealth managers, and M&E officers took a leading role in the facility mentorship sessions during recent site visits. Their participation is critical for institutionalization and sustainable implementation of the EMRs.

Top: Chimango Munthali, Data.FI's senior technical advisor, discusses data cleaning with facility-based and district M&E team members during a mentorship visit at a high-burden site supported by Baylor in Lilongwe District, Malawi.

Middle: Chimango Munthali sketches out a simple trends analysis focusing on outcomes for TX_CURR (number of adults and children currently receiving ART) and interruption in treatment (LTFU) indicators while mentoring facility-based staff on data cleaning.

Bottom: Tablets are used by IPs to send data and reports for different programs within the HIV cascade from facilities to a centralized database.

Photos by Data.FI, Right to Care, Malawi.

STRATEGIC INFORMATION CAPACITY

For many local organizations, receiving direct PEPFAR funding is an opportunity: partners can increase qualified staff, expand much-needed services, and strengthen enduring organizational systems. This funding, however, comes with extensive requirements, not only in terms of financial management and contractual compliance, but also around the use of strategic information and results reporting. Particularly for newly established primes, these requirements can present a steep learning curve, while simultaneously implementing complex programs with ambitious targets to improve HIV outcomes.

659 individuals completed a training conducted by Data.FI

To address this challenge, Data.FI developed an online training course for local partners on PEPFAR strategic information, data quality, and quality improvement. The innovative, blended digital course offers 22 asynchronous lessons that allow participants to learn at their own pace, along with two live, synchronous sessions aimed at reinforcing key concepts and skills from participants' asynchronous learning. Trainees are given the opportunity to connect with subject matter experts during virtual office hours, contextualizing their learning with one-on-one technical assistance. Nearly 110 participants from 29 local organizations in more than 13 countries have attended these sessions to date. We anticipate reaching 120 additional participants in the coming reporting period with sessions in both English and French.

To support USAID's goals of building the capacity of **local partners** working in strategic information, Data.FI co-created with USAID/OHA the PSICA Tool—a strategic information capacity assessment tool that can be used by local partners that have recently transitioned to a prime USAID partner role, or those that will soon be transitioning. Data.FI used the PSICA tool to assess a group of eight local partners from six countries (Democratic Republic of the Congo, Haiti, Kenya, Malawi, Tanzania, and Zimbabwe).

> **"The whole reason we do M&E and strategic information, is to gather information to see if what we're doing is working. Are we reaching the right people? Are we reaching enough people? Is there retention? How do we use this information to put in place systems that support high-quality services and enable clients to get the best care possible?"**
>
> — Rebecca Furth, Data.FI, JSI

Data.FI held a welcome session with USAID and partners to introduce the online training course on strategic information and assessment of local partner capacity.

Gender Strategy Update

Although PEPFAR MER indicators require sex and age disaggregation, and the quality of these data has improved immensely over the past decade, data are not routinely reviewed by sex, and few projects truly "dig in" to their data to explore gender-sensitive issues. This is a missed opportunity for programmatic improvement. Gender-disaggregated data can point out differences and disparities in women's and men's, and girls' and boys' access to and use of HIV and COVID-19 services that must be addressed in order achieve health and social outcomes equitably, as well as program targets. Review and interpretation of the data can facilitate dialogue on the causes of observed differentials as well as service delivery solutions. For example, men's relatively low uptake of HIV testing services at some service delivery points can prompt managers to explore why (e.g., limited geographic access, hours of operation, stigma, gender-discriminatory treatment, etc.) and then look for solutions or reallocate resources to where they are most needed.

Our five priority gender objectives are to promote the **availability and use of gender data** to improve and tailor services for all populations; ensure that **health information subsystems allow for the recording of sex- and age-disaggregated data**; support **data governance**

A staff member at a health facility fills out an HIV testing register in Akwa Ibom State, Nigeria. Photo by Data.FI, Palladium, Nigeria

Gender-disaggregated data is essential for identifying disparities in women and men's health and to tailor services to meet the most urgent challenges and improve program performance. Photo of young girls in Senegal by Christophe Durpaire, courtesy of Flickr Creative Commons.

policies and practices that address the importance of gender data, prioritize actions to ensure data privacy and protection among vulnerable groups; **improve the sources and quality of gender clinical data** to inform clinical practice; and **strengthen the leadership capacity of women and girls and gender and sexual minorities** within the HIV data ecosystem.

Data.FI is building digital solutions that mitigate gender-based discrimination and violence

In Nigeria, Data.FI is working with the Mission to **incorporate gender-based violence (GBV) indicators in regular IP reporting** and in dashboards on the Automated Partner Performance Reporting (APPR) platform housing HIV data. Review of GBV indicator data in December 2020 showed that in Adamawa and Cross River states, provision of GBV screening services at HIV testing and treatment sites remained low, despite GBV prevention being a component of USAID-funded HIV prevention and care programming. The Data.FI team met with RISE, the USAID IP supporting services in these states, to review HIV and GBV data on a weekly basis. Data.FI also worked with the RISE gender focal person to **identify potential barriers that contribute to poor GBV screening**, particularly at the time of index testing, and to elicit suggestions for improvement, which RISE then put in place. The end line analysis of trends in the number of HIV index testing clients screened for GBV (using data from December 01, 2020 to February 19, 2021) found that 56 percent of clients receiving index testing services were screened for GBV. This reflected a 51 percentage-point increase, compared to the five percent of index testing clients screened for GBV at baseline (using data from September 30 to November 30, 2020). That said, end line values ranged from 22 percent to 89 percent across sites. We are now working with RISE to identify factors contributing to this variability.

NEW GENERATION

Women Trained in Data Management and Strategic Information

Data.FI is committed to empowering women to advocate for the capture and use of gender-sensitive data, and to become leaders in the data and digital health space. Data.FI is contributing to the development of a more gender-inclusive workforce through its efforts training a new generation of women in data management and strategic information.

- In **Namibia**, Data.FI trained 99 staff at facility and district levels to manage and implement QePMS, the enhanced HIV EMR system; 64 training participants (65%) were women.
- In **Malawi**, Data.FI held a training for M&E officers and data clerks for 98 staff, 48 of those trained (49%) were women.
- In **Uganda**, Data.FI held a training on the KP unique identification application for 86 participants; 39 of those trained (45%) were women.
- In **Nigeria**, Data.FI held trainings for 107 state officials managing data for COVID-19 emergency operations; 40 (37%) were women.

Photo of a Nigerian schoolgirl by the Global Fund for Children, courtesy of Flickr Creative Commons.

Developing and strengthening information systems for gender-focused data, such as we are doing in Nigeria, can lead to improved quality of care and better HIV and COVID-19 client-level outcomes, particularly among vulnerable populations. This, in turn, can help prevent HIV infection—e.g., through safety planning, HIV post-exposure prophylaxis, and improved self-efficacy—and **facilitate treatment access, adherence, and viral suppression** among those living with HIV. Better client-level GBV data similarly provides an opportunity to improve protection and care of vulnerable persons.

The distribution of new HIV infections is disproportionately affecting key populations, such as sex workers, transgender people, gay men and other men who have sex with men. Discrimination and social exclusion elevate their risk of HIV infection. Illustration by Denise Todloski.

CLOSER LOOK

Addressing High Rates of HIV among AGYW in Akwa Ibom, Nigeria

Targeting AGYW for HIV programming is a critical component of national prevention strategies, to ensure that AGYW are empowered to make decisions about their health and have access to quality healthcare services.

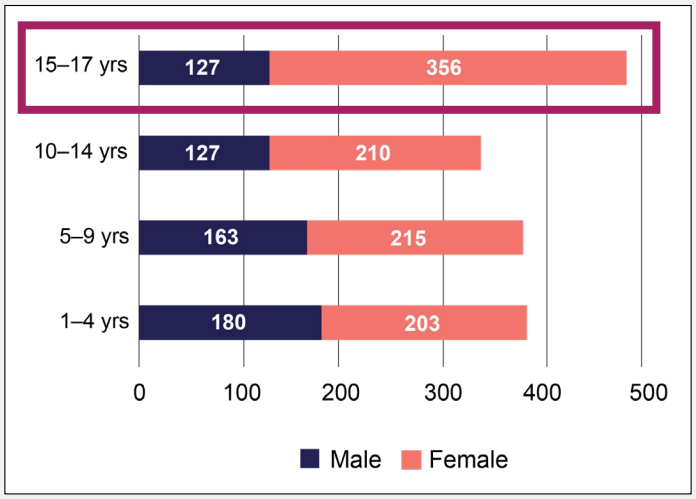
In 2020 for the first time, age- and gender-specific visualizations on the number of OVC ages 0–17 years with known, reported HIV-positive status were presented by Data.FI to stakeholders participating in the weekly ECR meetings in Akwa Ibom State. An analysis among adolescents ages 15–17 showed a wide discrepancy by gender; for every male testing positive for HIV, four females tested positive.

In February 2021, the State Ministry of Health (SMOH) and other key stakeholders created a joint committee to investigate in depth the gender margin in HIV-positive diagnoses between males and females. The committee has successfully mobilized resources for AGYW-specific interventions.

This effort by the SMOH demonstrates the impact of data analysis and review with a gender lens on reaching populations in need of services, and how robust government leadership can guide this change. Data.FI will play a crucial role in monitoring the AGYW program over the next year to ensure that analysis and visualizations are provided monthly so that the government and stakeholders can make meaningful progress in preventing infections among AGYW.

Girls in Ta Kuti village, Nigeria. Photo by Arne Hoel, World Bank, courtesy of Flickr Creative Commons.

HIV-positive adolescents in Akwa Ibom by sex



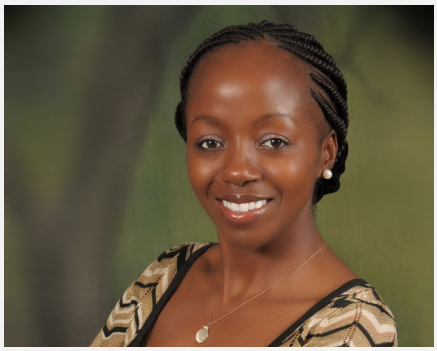
> **"There is a need to refocus attention to HIV infection in children and particularly adolescents to achieve epidemic control in Akwa Ibom State and Nigeria as a whole. To achieve this, all hands must be on deck to ensure HIV infection is prevented among this group and those infected are identified and linked with care and treatment."**
>
> – Dr. Idayat Uthman, National Program Officer and UNAIDS Representative in Akwa Ibom State

WHY IT MATTERS TO HAVE GENDER DIVERSITY IN LEADERSHIP ROLES

Reflections from female leaders in digital health and MEL on the Data.FI project

"Gender diversity is critical to fuel the creativity and innovation needed in digital health. Women are greatly underrepresented in leadership roles in technical areas such as monitoring, evaluation, and learning (MEL) and digital health. Women face challenges balancing family roles and the demands of technical and management leadership roles—widening the leadership gap. We need to promote work-life balance."

– Rose Nzyoka



Rose Nzyoka, Data.FI Country Manager for Mozambique

"We need to ensure women understand gender issues to thrive professionally and be empowered. I encourage more and more women to take an interest in monitoring and evaluation, especially in data analysis, so that through their leadership, they can bring about changes by increasing women's involvement in health and education."

– Leontine Gnassou

Data.FI Côte d'Ivoire Country Director Léontine Gnassou, JSI, receiving thanks from an educational charity in Abidjan for her work keeping children in school. Léontine says that "Every meeting or workshop to develop an application or tool presents an opportunity for the project to reinforce capacity. We don't go and impose something on participants. We ask them what they want, and how they want to do it, and we use our expertise to guide them to a better outcome."

"The future of humanity will be determined by scientific, health, and technological progress—which can only be achieved when women and girls are empowered to be co-creators, co-owners, and co-leaders of science, technology, biomedical health sciences, biomedical engineering, and digital health. Innovation is best served by a diverse team, and both cultural and gender diversity should become a key focus for all businesses. Women's inclusion and empowerment in digital health means bringing in a different and complementary point of view that has the potential to produce a higher impact for society."

– Christy Mulinder

Christy Mulinder, Chief of Party, Data.FI/Palladium, South Africa

Looking Forward

We are living through a unique moment in history, where the planet is faced with multiple challenges, tremendous loss of life, widespread disruption to our economies, and erosion of progress on global sustainable development goals. While we don't yet know what the future will hold, we do know that as Data.FI, we will continue to collaborate with governments, donors, the private sector, and other partners to get decision makers the information they need to make decisions that will save lives and contribute to a more resilient future for countries and communities worldwide.

Over the next six months, we will build upon the work shared in this report. We have new opportunities to widen our impact, promote sustainable systems, and address historic inequities.

We salute healthcare providers, such as Oretha Buway, on the front lines, providing care to those who need it every day. Ms. Buway is a midwife at the C.H. Rennie Hospital in Kataka, Liberia. She worked throughout the Ebola pandemic, and is now providing care during the COVID-19 crisis. Photo by Dominic Chavez, World Bank, courtesy of Flickr Creative Commons, with illustration added by Data.FI.

We are learning and scaling in partnership.

- We are beginning **a new collaboration with the World Health Organization (WHO)** to capture, synthesize, and document key learnings from the COVID-19 response, including vaccine introduction efforts. This will involve several discrete assessments focusing on different learning topics, and potentially studies of vaccine effectiveness, which leverage our consortium's extensive experience in immunization and research.
- We will begin **scaling the successful Tanzanian Makole Model approach to site-level quality improvement**, in partnership with the government, USAID, and UNICEF. This is a multi-year activity to revolutionize how data are used at the facility level across health domains for improved client care and planning.

We are testing new approaches.

- We are **testing an anomaly detection technique** as a rapid and low-cost method for pinpointing data discrepancies. We expect that USAID and IPs will be able to use this method at the operating unit and headquarters levels to determine which sites need full DQA or root cause analysis.
- We are also **conducting a large-scale virtual DQA of COVID-19 performance data**—documenting findings as well as learning from this novel method.
- We are working closely with USAID and partners to **test how PEPFAR projects can best deploy ML algorithms to prevent interruption in HIV treatment** through our work in Mozambique with Abt's ECHO project.

We are putting sustainability first.

- We are thinking about how the changes in HIS (and broader country) priorities brought about by the COVID-19 pandemic can best bring about positive impact in these uncertain times. Many of these questions relate to a broader sustainability agenda—**planning for transition by building flexible systems and tools that are owned by government counterparts and that take into account local infrastructure and long-term available resources**, in line with USAID's Principles for Digital Development.

We are committed to promoting racial and gender equity.

- This moment is history is challenging the way we do business and whose voices are heard and valued. We are committing ourselves to **devising better ways to assess, document, and right inequities** across genders, nationalities, and races.

The next six months will be a pivotal time. We look forward to rising to the challenge through our work supporting USAID, host countries, and other partners to strengthen and sustain access to mission-critical, high-quality data to accelerate HIV and COVID-19 epidemic control—saving lives and livelihoods.

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

Annexes

Young men in Bapsfontein settlement, a farming area east of Johannesburg, South Africa. Photo by John Hogg, World Bank, courtesy of Flickr Creative Commons.

Annex 1. Financial Summary

From inception through March 31, 2021, Data.FI has received more than $27 million U.S. dollars in cumulative funding. More than half (59%) of that is HIV Field Support funding, 21 percent is comprised of COVID-19 Core funding, and 18 percent of funds were HIV Core funding. Cross-bureau funds from the Center for Innovation and Impact (CII) and an obligation to support COVID-19 response in Nigeria each account for one percent of total funding.

Of the Field Support funding that Data.FI has received, Nigeria and South Africa continue to account for the largest percentages of cumulative field funding, at 32 percent and 26 percent. Data.FI received a mid-year buy-in from the Tanzania mission, accounting for 11 percent of the cumulative field funding to date. Other countries receiving Field Support funding include Burundi (7%), Côte d'Ivoire (9%), Malawi (2%), Mozambique (1%), Namibia (5%), Uganda (4%), and Zimbabwe (3%).

Figure 1. Data.FI Funds by funding stream, inception to March 2021

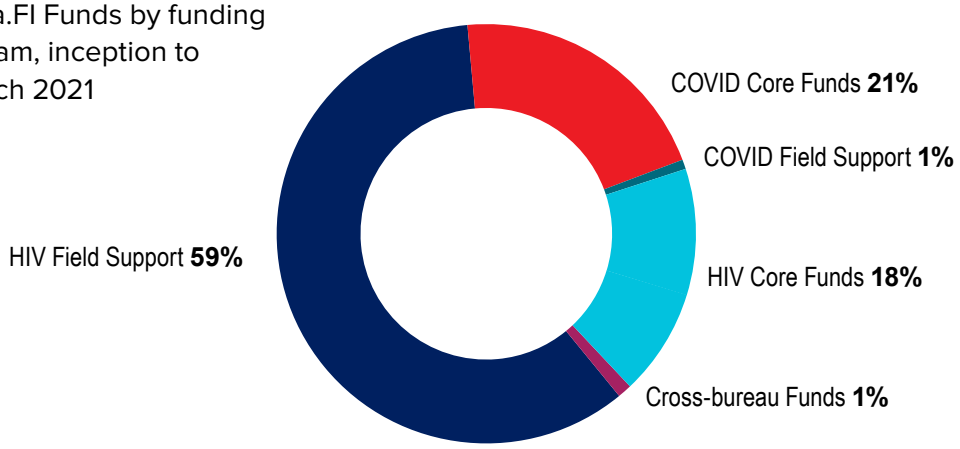
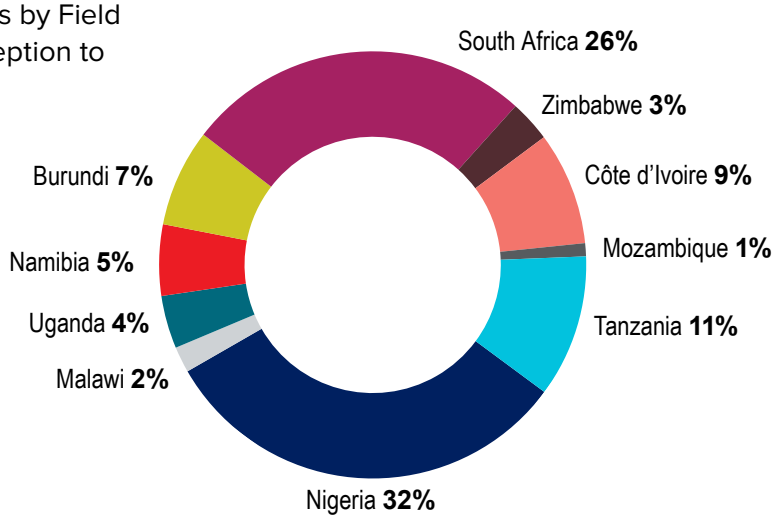


Figure 2. Data.FI Funds by Field Support, inception to March 2021



Annex 2. Project Indicator Results

Indicator	Target - LOP	Achieved - LOP Apr 2019 - Mar 2021	Achieved SAPR 2021 Oct 2020 - Mar 2021	Burundi	Côte d'Ivoire	Malawi	Namibia	Nigeria	South Africa	Uganda	Tanzania	Zimbabwe	COVID-19 Nigeria	HBF Communications	HBF Data Analytics	HBF DREAMS	HBF HRH	HBF Local Partner Transition	HBF Predictive Analytics	HBF West Africa Region	COVID DQA	Mozambique
Outcome 1: Accelerated data use																						
1.1 SI_USE Number of data use cases that document use of data for performance improvement	25	32	7					2												5		
Outcome 2: Advanced analytics																						
2.1 DATA_ANALYSIS Number of analytical solutions	15	70	34	1				5	4	2			8		2	3	7	1		1		

Project Indicator Results continued

Indicator	Target - LOP	Achieved - LOP Apr 2019 - Mar 2021	Achieved SAPR 2021 Oct 2020 - Mar 2021	Burundi	Côte d'Ivoire	Malawi	Namibia	Nigeria	South Africa	Uganda	Tanzania	Zimbabwe	COVID-19 Nigeria	HBF Communications	HBF Data Analytics	HBF DREAMS	HBF HRH	HBF Local Partner Transition	HBF Predictive Analytics	HBF West Africa Region	COVID DQA	Mozambique
Outcome 3. Optimized and scaled health information sub-systems																						
3.1 HIS_INTEROP* Number of instances of health information systems supported by the project that demonstrate interoperability or compliance with interoperability standards	5	13	4	3				1														
3.2 HIS_PM* Number of information systems, applications or modules supported by the project with updated key project management documentation for software development	10	27	17	2	2			1	3	1	1	1					5					1
3.3 HIS_SCALE*. Number and percentage of program sites with new or upgraded project-supported information systems operational as intended within the reporting period	75%	90%	81%	138%			100%	5%														
		401	313	11			271	31														
3.4 HIS_ALIGN. Percentage of systems or modules developed or improved upon by Data.FI that include an assessment of the HIS ecosystem in requirements documentation (report number of systems here, denominator is HIS_PM) *New indicator, added in February 2021, first reported in SAPR 2021	100%	11%	18%	50%				100%	33%													
		3	3	1				1	1													

Project Indicator Results continued

Indicator	Target - LOP	Achieved - LOP Apr 2019 - Mar 2021	Achieved SAPR 2021 Oct 2020 - Mar 2021	Burundi	Côte d'Ivoire	Malawi	Namibia	Nigeria	South Africa	Uganda	Tanzania	Zimbabwe	COVID-19 Nigeria	HBF Communications	HBF Data Analytics	HBF DREAMS	HBF HRH	HBF Local Partner Transition	HBF Predictive Analytics	HBF West Africa Region	COVID DQA	Mozambique
Outcome 4. Strengthened HIV data sources																						
4.1 DATA_CHECKS Number of digital data quality checks for key PEPFAR indicators developed and introduced	10	8	3		1			2														
4.2 SI_QUAL Number of partners/sub-national units supported with Data.FI data quality interventions that demonstrate improved data quality	20	23	10	10																		
Outcome 5. Strengthened Local Partners																						
5.1 CAP_DATA 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)	TBD	0	0																			
	N/A	6	0																			
5.2 CAP_MER Percentage of supported local organizations meeting 80 percent of assigned PEPFAR MER target contributions in the reporting period	TBD	0	0																			
5.3 CAP_NUPAS Percentage of supported local organizations that have undergone a Non-U.S. Organization Pre-Award Survey (NUPAS) or NUPAS-like assessment	TBD	0	0																			

Project Indicator Results continued

Indicator	Target - LOP	Achieved - LOP Apr 2019 - Mar 2021	Achieved SAPR 2021 Oct 2020 - Mar 2021	Burundi	Côte d'Ivoire	Malawi	Namibia	Nigeria	South Africa	Uganda	Tanzania	Zimbabwe	COVID-19 Nigeria	HBF Communications	HBF Data Analytics	HBF DREAMS	HBF HRH	HBF Local Partner Transition	HBF Predictive Analytics	HBF West Africa Region	COVID DQA	Mozambique
Outcome 6. Innovative partners and methods promoted																						
6.1 INNOV_ ANALYSIS Number of analytical solutions that apply artificial intelligence/machine learning techniques *New indicator, added in February 2021, first reported in SAPR 2021	6	1	1						1													
6.2 INNOV_ PARTNER Number of private sector and other non-traditional partners engaged by the project. *New indicator, added in February 2021, first reported in SAPR 2021	5	1	1						1													

Annex 3. Process Indicators

	0.1	0.2	0.3	0.4	0.5
	Proportion of activities 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
Target - LOP	85%	80%	20	10	5
Achieved - LOP Apr 2019 - Mar 2021	N/A	N/A	5	4	6
Achieved SAPR 2021 Oct 2020 - Mar 2021	N/A	N/A	5	4	0
Burundi				2	
Côte d'Ivoire					
Malawi					
Namibia					
Nigeria				1	
South Africa					
Uganda			1		
Tanzania					
Zimbabwe			1		
COVID-19 Nigeria					
HBF Communications					
HBF Data Analytics			1		
HBF DREAMS					
HBF HRH					
HBF Local Partner Transition			1		
HBF Predictive Analytics					
HBF West Africa Region					
COVID DQA			1		
Mozambique				1	

Process Indicators continued

	0.6	0.7	0.8	0.9	0.10
	Number of data review meetings where performance data is reviewed supported by Data.FI activities	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	Number of applications of Data.FI project-branded tools, analytical approaches
Target - LOP	250	7	4	500	15
Achieved - LOP Apr 2019 - Mar 2021	538	72	12	1101	14
Achieved SAPR 2021 Oct 2020 - Mar 2021	91	0	4	752	14
Burundi					
Côte d'Ivoire	1				1
Malawi			2		
Namibia				324	
Nigeria	90				
South Africa					
Uganda				86	
Tanzania					
Zimbabwe					
COVID-19 Nigeria			2	262	8
HBF Communications					
HBF Data Analytics					
HBF DREAMS					
HBF HRH					
HBF Local Partner Transition				80	
HBF Predictive Analytics					
HBF West Africa Region					5
COVID DQA					
Mozambique					

Annex 4. Data.FI Products

This table includes the final products outlined in our workplan between October 2020 and March 31, 2021. This table does not include intermediate products, products not yet finalized, or products included in workplans revised from April 1, 2021.

Final Product	Publication Date by Quarter
Field-Funded	
Burundi	
DATIM-DHIS2 Data Exchange in Burundi: Report on 2020 Activities	Q1
Côte d'Ivoire	
Final data quality review tools and guidelines:	Q2
■ Data quality score tool	Q2
■ Guide pour la conduite de la revue de la qualité des données	Q2
■ Revue de la qualité des données produites par la base de données : Rapport	Q2
■ Summary data quality desk review using DQS tool	Q2
Namibia	
Quantum Electronic Patient Monitoring System Rollout in Namibia: Report on the National Rollout	Q2
Nigeria	
Descriptive Analysis of the Impact of HIV Surge Activities on Loss to Follow-Up in Akwa Ibom and Lagos States	Q2
Enhanced SIMS dashboards on the APPR platform	Q2
COP21 IP/facility targets	Q2
USAID Nigeria COP21 slide deck	Q2
Tanzania	
Software package consisting of system installers and the source code	Q2
Global Health Partner Reporting System: User Manual	Q2
Beta version of platforms	Q2
Uganda	
Size Estimation of AGYW at Risk for HIV Acquisition in Uganda	Q2

Data.FI Products continued

Final Product	Publication Date by Quarter
HOP Bridge Funds	
Communications	
It's a puzzle, it's an algorithm, it's deduplication (blog)	Q1
If it's Wednesday, we are talking data (blog)	Q1
5 Steps for measuring the benefits and risks of stakeholder data (blog)	Q1
Using data to improve HIV cascade outcomes (blog)	Q1
A Walk in My Shoes (blog)	Q1
Replatforming Nigeria's Multi-Disease HIS (success story/blog)	Q2
Training advances benefits of HIV data (Burundi blog, English)	Q1
Résoudre les problèmes de qualité des données pour améliorer leur utilisation au Burundi (Burundi blog, French)	Q1
Solutions Brief: Epidemic control rooms	Q2
Solutions Brief: Clinic and community linkages	Q2
Solutions Brief: Optimizing electronic medical records	Q2
Solutions Brief: Guidance for deduplicating client-level data	Q2
Solutions Brief: Integrated data warehouses	Q2
Solutions Brief: Predictive analytics	Q2
Solutions Brief: Assessing and strengthening strategic information capacity of local partners	Q2
DREAMS	
Documented package of source code (in Stata/R) and corresponding workflows	Q1
Data.FI DREAMS Eswatini Size Estimation: Final Report	Q2
Data.FI Haiti Size Estimation: Final Report	Q2
Data.FI Mozambique Size Estimation: Final Report	Q2
USAID Quarterly DREAMS_GEND_NORM Reporting Tool	Q2
USAID Quarterly DREAMS_FP Reporting Tool	Q2
USAID PEPFAR Central Custom Indicators Reference Guide	Q2

Data.FI Products continued

Final Product	Publication Date by Quarter
HOP Bridge Funds continued	
Local Partner Transition	
PEPFAR Strategic Information Capacity Assessment (PSICA) Tool Package	Q1
USAID/PEPFAR's HIV/AIDS Treatment Cascade Quality Assurance Suite of Tools: Virtual Training Package	Q1
PEPFAR Strategic Information Capacity Strengthening: Activity Report	Q2
West Africa Regional Support	
Harnessing the Power of Data to Accelerate HIV Epidemic Control in West Africa: Data.FI Technical Assistance to FHI 360, PEPFAR Implementing Partner in Togo and Burkina Faso	Q1
Harnessing the Power of Data to Accelerate HIV Epidemic Control in West Africa: Data.FI Technical Assistance to IntraHealth, PEPFAR Implementing Partner in Senegal	Q1
Harnessing the Power of Data to Accelerate HIV Epidemic Control in West Africa: Data.FI Technical Assistance to FHI 360, PEPFAR Implementing Partner in Mali	Q1
Harnessing the Power of Data to Accelerate HIV Epidemic Control in West Africa: Data.FI Technical Assistance to the Strengthening Care Continuum Project, PEPFAR Implementing Partner in Ghana	Q1
Harnessing the Power of Data to Accelerate HIV Epidemic Control in West Africa: Data.FI Technical Assistance to LINKAGES, PEPFAR Implementing Partner in Liberia	Q1
Burkina Faso Data Use Brief: Challenge: Implementing index testing	Q1
Burkina Faso Data Use Brief: Challenge: Optimizing HIV testing performance in selected PEPFAR sites	Q1
Liberia Data Use Brief: Data analysis spurs intensified efforts to implement index testing	Q1
Togo Data Use Brief: Meeting the challenge of low index case testing implementation at #EAWA project public health facilities in Togo	Q1
Togo Data Use Brief: Participatory data review to overcome challenges in achieving key project indicators in Togo	Q1
Data Analytics and Solutions	
An analysis of project expenditures and results under different PEPFAR partnership models	Q2
Community Program Contribution Analysis Guide	Q2
Contribution of Community-Based Programs to Clinical HIV Outcomes	Q2
Guidance on methods for analyzing PEPFAR prime and sub-partner expenditures and results	Q2

Data.FI Products continued

Final Product	Publication Date by Quarter
Predictive Analytics	
Predicting Loss-to-Follow-Up among HIV/AIDS Clients in Mozambique: Report on the Retrospective Application of Machine Learning	Q1
Predicting Loss-to-Follow-Up among HIV/AIDS Clients in Nigeria: Report on the Retrospective Application of Machine Learning	Q2
Predictive Analytics for Loss to Follow-Up: Decision Support Tool: Nigeria	Q2
Predictive Analytics for Loss to Follow-Up: Decision Support Tool: Mozambique	Q1
Predicting Lost-to-Follow-Up among ART Clients: Proposal for the Application of Machine Learning	Q2
Human Resources for Health	
Human Resources for Health Needs and Optimization Planning Solutions Brief	Q2
Human Resources for Health Needs and Optimization Planning Solution: Estimating Staffing Needs and Optimizing Staff Allocation for PEPFAR COP Planning	Q2
Overview of HRH Solution Purpose and Methods	Q1
Demo: HRH Needs and Optimization Solution	Q1
HRH Solution Package: Final	Q2
COVID Funds	
COVID Global	
Final COVID-19 modeling PPT	Q1
Final data inventory outlining data availability, frequency of update, granularity, and alignment with analytic framework	Q1
Final analytical framework	Q1
Final compilation of illustrative use cases in PPT	Q1
COVID-19 Pillar 2 Indicator Compendium	Q1

Staff member Jeremiah Banda at the Palladium office in Lilongwe, Malawi, receives a COVID-19 vaccine.

Photo by Palladium/Malawi.

Data.FI helps countries strengthen and sustain access to key, high-quality data to accelerate HIV and COVID-19 epidemic control, leveraging the experience and capabilities in infectious disease surveillance and digital health systems of our partners worldwide.

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.

April 2021

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