EPIC INFOSHEET

Enhancing HIV Data Management through EpiC's Strategic Information Initiatives

SEPTEMBER 2024

Introduction

In the dynamic landscape of the HIV epidemic, high-quality data management systems are important for informing decisions and enabling HIV programs to adapt and respond effectively. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) has been a global leader in data-driven program implementation. However, the extensive data collection required for this approach comes with the dual challenges of data overload and data underutilization.

Streamlined processes that improve efficiency in data collection, reporting, and utilization are critical for enhancing HIV health outcomes and operational efficiency, especially as PEPFAR programs are transitioned to local partners who integrate their data into national health information systems. The Meeting Targets and Maintaining Epidemic Control (EpiC) project, funded by PEPFAR and the United States Agency for International Development (USAID) and led by FHI 360, has developed an effective data management system that has transformed these reporting requirements into an asset, turning the data collected into a powerhouse for strategic decision-making and improved health outcomes.

PEPFAR

USAID
FROM THE AMERICAN PEOPLE

EpiC
Meeting Targets and Maintaining Epidemic Control

Strategic Information Support

EpiC's strategic approach is encapsulated by the mantra collect once, use many times. This philosophy aims to minimize redundancy in data collection while maximizing the utility of each data point. By integrating various health information systems and automating the generation of data reports in the form of dashboards and slides, EpiC significantly reduces the reporting burden on health care providers and project staff. This allows them to shift more time from administrative tasks to program improvement.

The integration process within EpiC's strategic information (SI) framework features a seamless flow of data across various platforms, from data collection at service delivery points to high-level analysis and reporting. This integration is facilitated by sophisticated scripts and application programming interfaces (APIs) that automatically transfer data from data collection systems, including the FHI 360 DHIS2 Tracker Metadata Package for HIV Programs (hereafter the FHI 360 Standard Tracker) described below, into InfoLink, EpiC's central database, and subsequently into global reporting databases such as DATIM, PEPFAR's reporting system.

This automated data pipeline reduces the need for repeating manual data entry into multiple reporting systems, thereby minimizing errors and saving valuable time. Moreover, it supports consistency in data reporting and enhances accuracy of performance monitoring across different levels of the program. Through these automated systems, data captured at the source are quickly and efficiently processed and made available for reporting and analysis. This supports timely and informed decision-making and provides flexibility for projects to comply with multiple reporting requirements of international donors and stakeholders.

SI Support Components

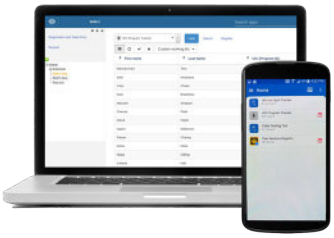
FHI 360 Standard Tracker

The FHI 360 Standard Tracker is a cornerstone of EpiC's data management strategy. It uses DHIS2, an open-source, web-based platform for health management information systems (HMIS) and is considered a global public good, as it is free, modifiable, and supported by a large community of practice. The FHI 360 Standard Tracker is a data collection and reporting tool that can be used on a smartphone, tablet, or computer. Data are collected at the individual level and then automatically aggregated for reporting. This facilitates automated reporting of more than 70 PEPFAR monitoring, evaluation, and reporting (MER) indicators, as well as custom indicators, while allowing country programs the flexibility to customize the model to meet local reporting requirements. In addition, because the data are collected individually, cohort analyses can be done, expanding program understanding beyond what is possible with aggregated data.

Figure 1 shows the components of the FHI 360 Standard Tracker package and Figure 2 the fully customizable forms in the package, which has been rolled out in 19 EpiC-supported countries (Figure 3). Notably, all individuals are enrolled prior to being tested for HIV, allowing individual tracking regardless of HIV status and encompassing all service needs over time.

Figure 1. Components of the FHI 360 Standard Tracker package

Data collection



- Built-in forms for data collection across continuum of HIV services
- All forms fully customizable and new forms can be added
- Optimized for mobile and offline data collection

Case management

- Appointment scheduling
- Tracking of upcoming and missed appointments
- Automated reports of clients who need refills on ART and PrEP
- Daily achievement reports at the hot spot, site, and national levels
- Client reminders via SMS

Reporting

- Captures 70+ pre-calculated indicators, aligned with standard DATIM reporting format
- Built-in reporting dashboards
- Flexibility to customize to meet local reporting requirements

Figure 2. Fully customizable program forms in the FHI 360 Standard Tracker package

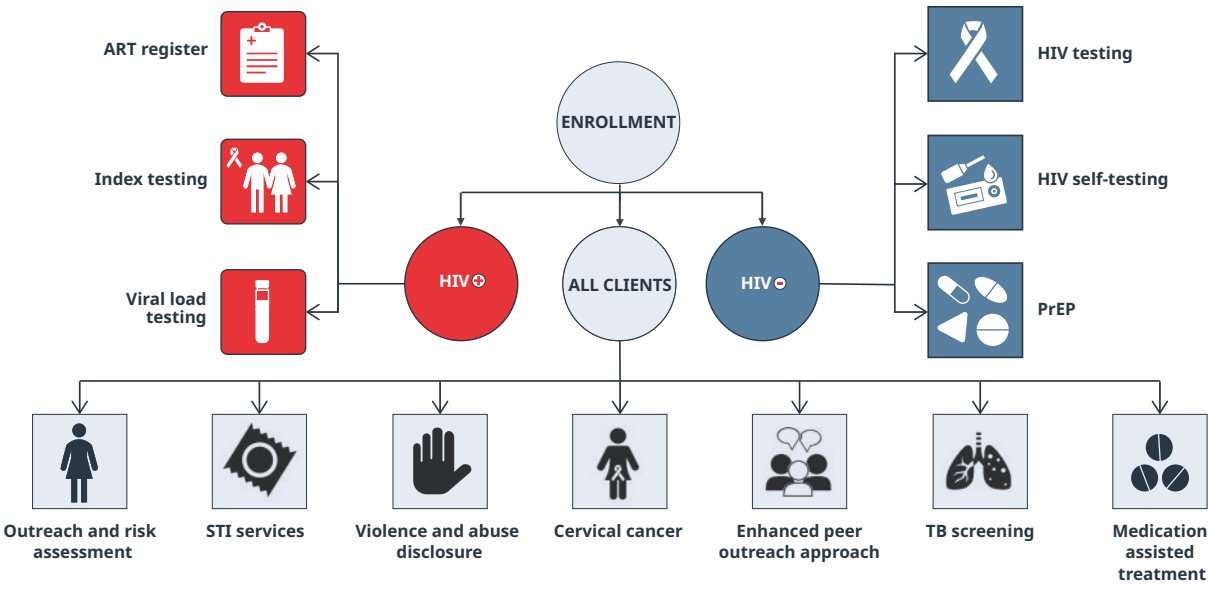
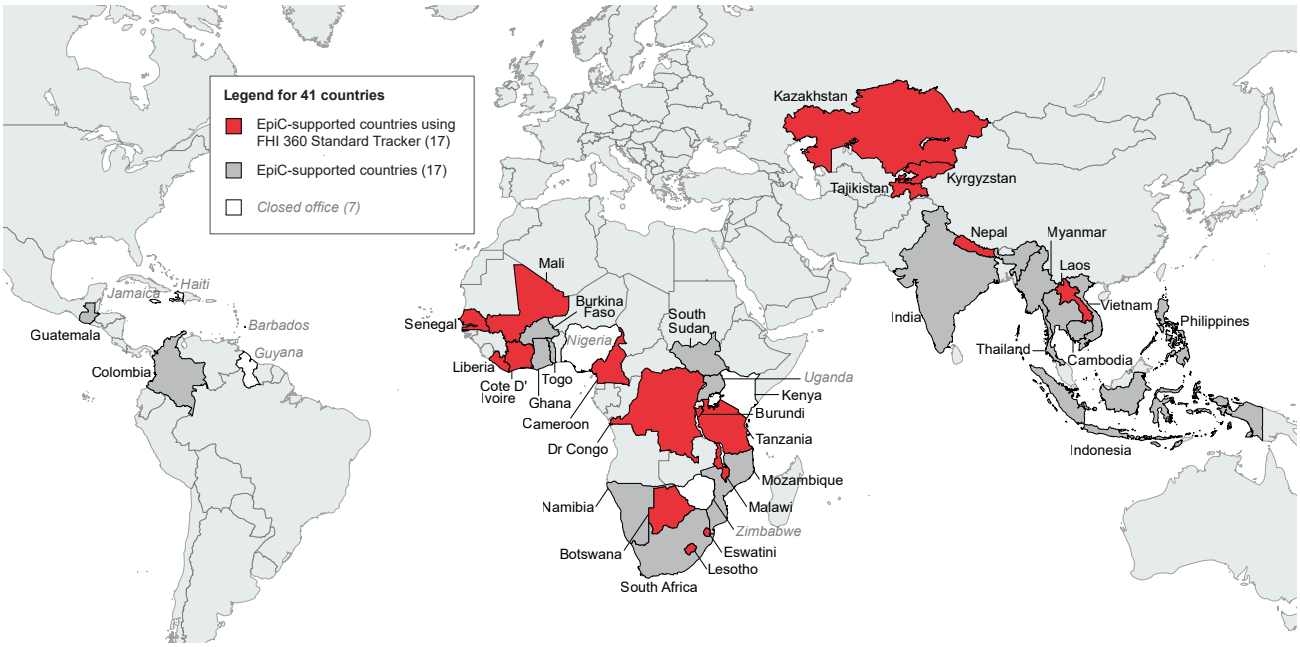


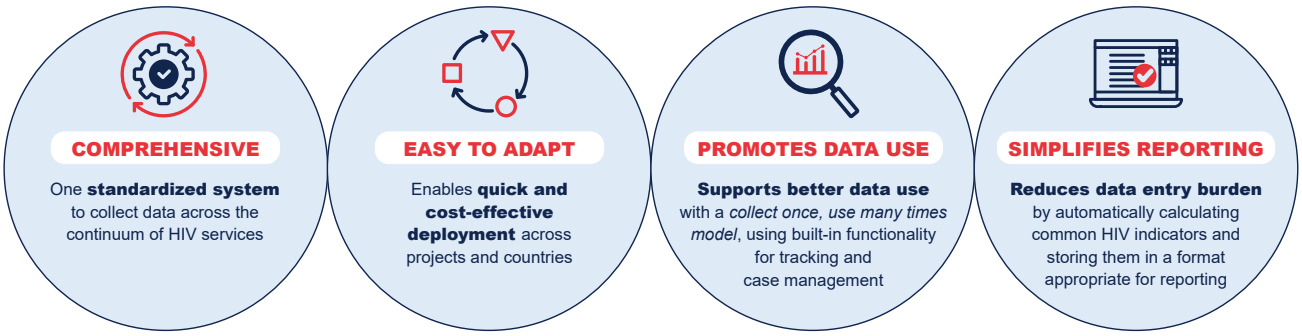
Figure 3. Map of EpiC-supported countries using the FHI 360 Standard Tracker



The FHI 360 Standard Tracker has four main benefits (Figure 4).

1. **Comprehensive:** One standardized system to collect data across the continuum of HIV services ensures that data quality and reliability are maintained across countries, which is critical for systems integration.
2. **Customizable:** Can be deployed quickly and cost effectively across projects and countries in its standard configuration or can be adapted to align with country-specific forms and guidelines, add new program modules to incorporate emerging infectious diseases, or accommodate other needs as they arise. Although originally developed to support HIV programming for key and priority populations, the Tracker can also be applied more broadly to any HIV prevention, care, and treatment program.
3. **Promotes better data use:** Reduces data-entry burden and leverages built-in functionality for tracking and case management of clients.
4. **Simplifies reporting:** DHIS2 trackers come with their own dashboards that support data quality, including completeness of data entry. They support real-time data access, which is instrumental for data use for rapid decision-making and resource allocation.

Figure 4. Benefits of the FHI 360 Standard Tracker



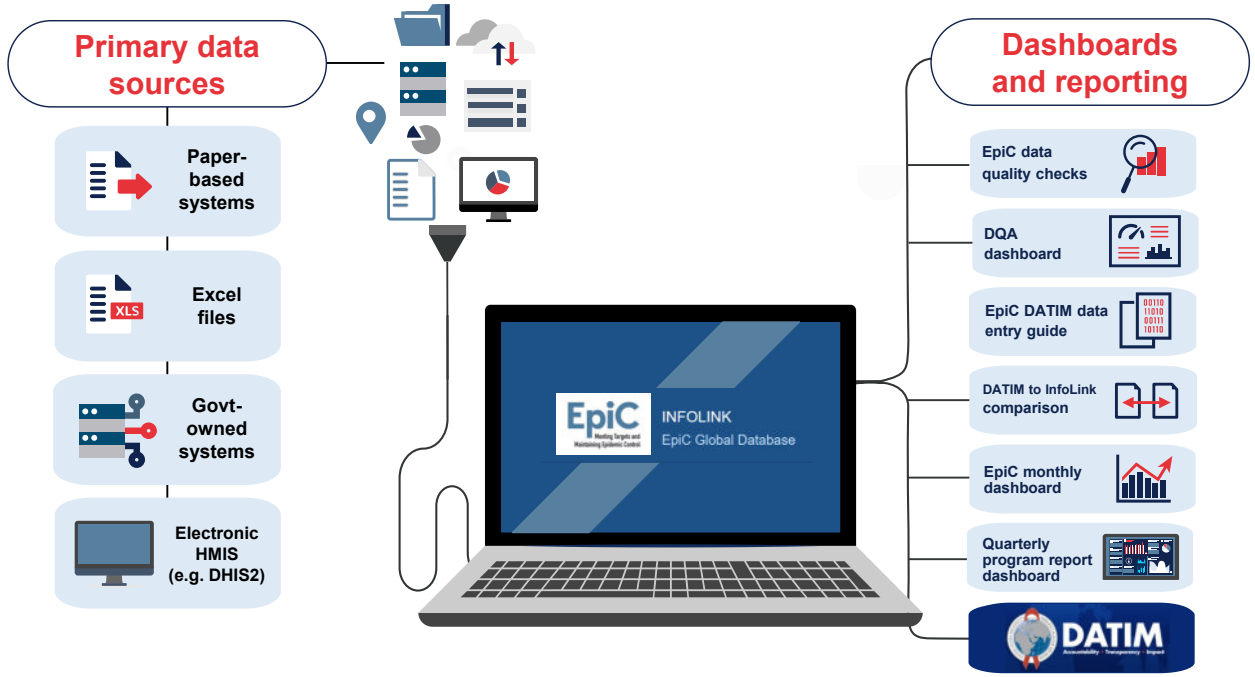
In addition, a notable innovation of the FHI 360 Standard Tracker is that it simplifies and standardizes the DHIS2 configuration to support the case management of individuals accessing HIV services in both facility and community settings across the continuum of HIV outreach, testing, prevention, and treatment. This feature is key for tracking client progress and program outcomes over time. For example, a health care worker can generate a report of all clients who have tested positive for HIV but have not initiated antiretroviral therapy (ART) and then follow up with those clients to link them to treatment.

InfoLink

InfoLink is EpiC's central DHIS2 aggregate data warehouse, which is critical for managing the comprehensive data needs of the project. InfoLink consolidates data from multiple sources, including the FHI 360 Standard Tracker and any non-DHIS2 systems mapped to InfoLink, so that all data — whether individual case records or aggregate reports — are securely stored and easily accessible. Figure 5 shows data flow from primary data sources, including DHIS2 trackers, to dashboards and reporting.

InfoLink includes advanced data visualization tools and robust analytical capabilities that empower users to derive meaningful insights from complex datasets. For example, detailed pivot tables can be generated to facilitate thorough data cleaning and analysis to ensure data integrity and usability. These features make it possible to create detailed reports and dashboards that can inform strategic decision-making. By providing a central, reliable source of data, InfoLink significantly enhances EpiC's ability to review and use information, supporting ongoing efforts to optimize HIV prevention and treatment programs globally.

Figure 5. Data flow into InfoLink in EpiC

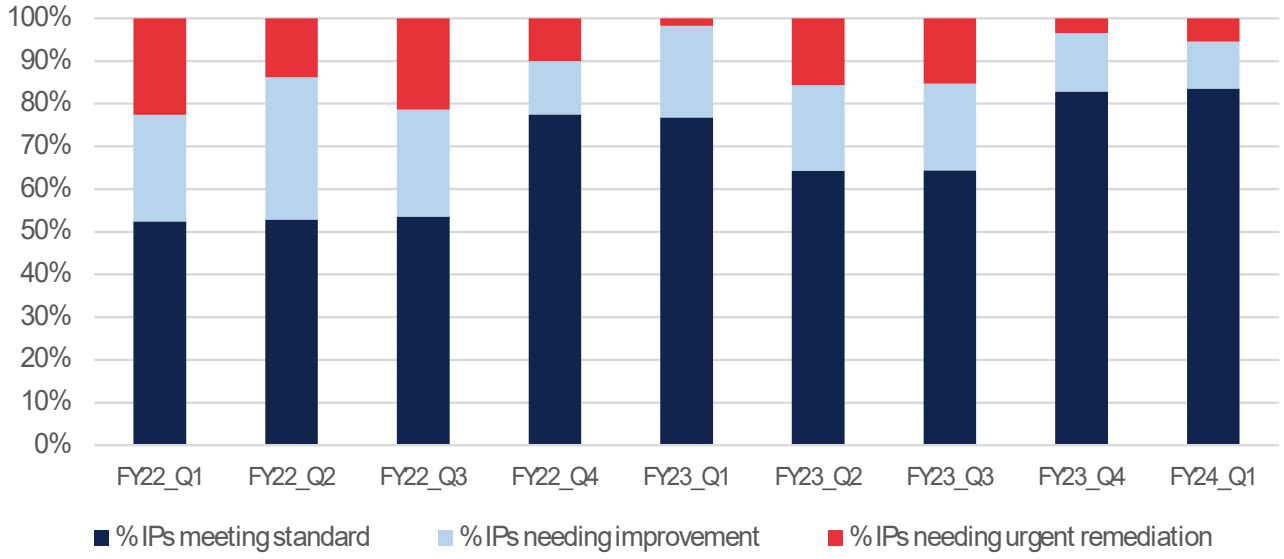


Data Quality

Because high-quality data are essential to accurately measure project performance, EpiC has incorporated data quality assurance (DQA) activities into its monitoring and evaluation plans. The project has developed standard operating procedures (SOPs) for paper and electronic reporting systems to address the unique threats to data quality. EpiC has placed particular emphasis on data quality within InfoLink and its trackers, both of which contain internal validation and program rules that flag potential outliers at the point of data entry, as well as guide the sequential flow of data. For example, if someone tests HIV negative, the FHI 360 Standard Tracker will prompt end-users to offer pre-exposure prophylaxis (PrEP). Further, EpiC has created unique data quality dashboards for the trackers that check for completeness; and has designed a series of data quality check dashboards in InfoLink to flag data that violate logic rules.

To improve transparency of routine DQA results, EpiC created a DQA dataset in InfoLink that mirrors the paper-based reporting form. These results are automatically pulled into Power BI to visualize results disaggregated by country, implementing partner (IP), site, and indicator. A performance improvement plan section in InfoLink allows users to clearly describe the challenges with data quality, outline key actions needed to improve the situation, and identify the person responsible for each task. As a result, EpiC has been able to provide more targeted technical assistance where needed, resulting in improvements in data quality (as shown in DQA results over time in Figure 6), and fewer sites requiring urgent remediation. From FY22 through Q2 FY24, EpiC conducted more than 440 DQAs in 25 countries with more than 170 local partners.

Figure 6. DQA results showing improvement over time



Dashboards

Dashboards designed to enhance data accessibility and usability for all stakeholders are a key feature of EpiC's SI strategy. Developed using Power BI, these dashboards pull data automatically from InfoLink hourly, providing nearly real-time insights into program metrics and trends.

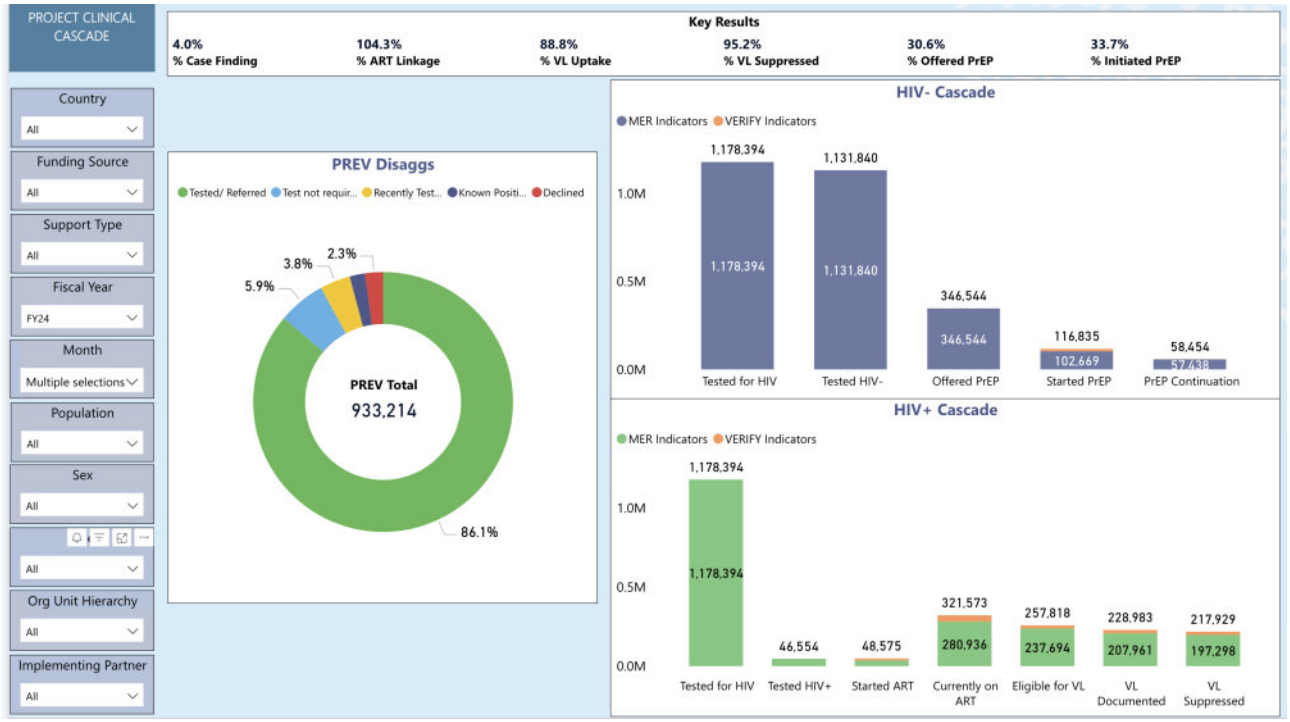
The dashboards are tailored to meet the needs of various users, from field workers needing operational data to program managers and donors interested in high-level outcome indicators. Dashboard types with intended primary users are shown in Figure 7.

Figure 7. Dashboard types used in the FHI 360 Standard Tracker

Dashboards and reporting	Summary	Primary user
EpiC data quality checks 	Internal quality checks for InfoLink data. Used to clean data	SI teams
DQA dashboard 	Summarizes DQAs done at each site, over time	health care workers, in-country teams, headquarters staff and donors
EpiC DATIM data entry guide 	InfoLink data formatted in the exact format required for entry into DATIM	SI teams
DATIM to InfoLink comparison 	Compares data entered in InfoLink to that in DATIM. Used to ensure data are aligned and clean	SI teams
EpiC monthly dashboard 	Snapshot of ALL data from InfoLink. #1 up-to-date source for information on our indicators	health care workers, in-country teams, headquarters staff and donors
QPR dashboard 	Pre-populated dashboard in the format of PowerPoint slides. Used to automatically generate QPR slide decks	health care workers, in-country teams, headquarters staff and donors

The design of these dashboards emphasizes user-friendliness and relevance such that all EpiC staff, regardless of their level of technical expertise and experience, can easily access and utilize the data they need to make informed decisions (see Figure 8 for screenshot). This approach democratizes data access across the organization as well as fosters a data-driven culture, enhancing overall program efficiency and effectiveness. Through these dashboards, EpiC ensures that the data collected are not merely numbers in a database but powerful tools for change, driving improvements in HIV care and treatment worldwide.

Figure 8. Screenshot of an EpiC dashboard



Conclusion

The impact of EpiC's SI initiatives is multifold. These initiatives have reduced the burden of data management at all levels. They have also significantly enhanced the quality of the data used to inform efforts to end HIV and improved data use across all cadres, from site-level personnel to managers and decision-makers. By simplifying data processes and enhancing accessibility, EpiC supports the global goal of ending the HIV epidemic, proving that powerful data management tools can and do lead to better health outcomes.

Please send any inquiries to epicproject@fhi360.org.

For more news from the EpiC project, visit https://epicproject.blog/.

This work is made possible by the generous support of the American people through the United States Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The contents are the responsibility of the EpiC project and do not necessarily reflect the views of USAID, PEPFAR, or the United States Government. EpiC is a global cooperative agreement (7200AA19CA00002) led by FHI 360 with core partners Right to Care, Palladium International, and Population Services International (PSI).