Background

An end to AIDS is now in sight. The achievement of near-universal coverage of relevant HIV services among individuals facing the greatest risks can curb HIV-related illness and death while blocking ongoing transmission of the virus. Applying an HIV cascade framework (Figure 1) helps to track expansion of critical HIV treatment and prevention services and identify outstanding gaps. Progress toward control of the HIV epidemic can be assessed and improved with the use of these routine program data.

Figure 1. The EpiC HIV Cascade Framework

Nevertheless, the more progress that is made, the more challenging it becomes to identify and engage those who have not received services. Existing services must be adapted to be more responsive to the preferences and needs of these individuals, and to help overcome stigma, discrimination, and other barriers to access. The HIV cascade framework can show how far services have to go, but it doesn’t supply individual-level data about how to achieve set goals. To navigate the “last mile” on the path to HIV epidemic control, systems are needed to improve the tracking and support of individual clients across HIV services.

To respond to these challenges, the Meeting Targets and Maintaining Epidemic Control (EpiC) project worked with Indonesia’s national HIV program to develop and implement the country’s first system to track and help support individual clients across the HIV cascade confidentially as a part of a group over time, or “cohort”. The Indonesia Ministry of Health’s (MOH) Aplikasi Rekap Kohort (ARK) data application will now be able to analyze and respond to outcomes for the members of core cohorts. With funding from the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Agency for International Development (USAID), the EpiC team has provided Indonesia’s national program the ability to increase efficiency and impact by focusing on clients with the greatest needs.
The evolution of ARK

The MOH established the foundations of ARK a decade ago, but the original application did not have the capacity to track individual clients by confidential unique identifier codes (UICs) across HIV services and service delivery sites. The original ARK implementation also did not incorporate data analysis functions. When members of the EpiC team engaged in initial discussions with the MOH about opportunities for HIV service delivery collaboration in 2016, both health systems capacities were identified as priorities. The MOH wanted to reposition ARK as a primary touchstone to track and improve individual client and overall program outcomes.

Working closely with national program counterparts, the EpiC team sought to transform ARK into a point-and-click, menu-driven platform (Figure 2) to simplify and facilitate access to routine client data being recorded by health facilities that provide services to people living with HIV (PLHIV). These included all services following a client’s HIV diagnosis, including those provided prior to and following initiation of antiretroviral therapy (ART). With these functionalities, the national program could easily identify and prioritize support for individuals who failed to initiate ART rapidly following diagnosis, as well as for those who struggled to sustain HIV viral load suppression following treatment initiation.

The team worked to incorporate validation tools to help assure data quality, analysis tools that would facilitate data-driven service management and decision-making, and export functions to automate reporting, into the national HIV and AIDS Program Information System (SIHA). The validation and export functions have helped minimize the amount of time providers have to devote to administrative tasks, allowing them to focus on service improvement and client care.

Visualizing continuous improvement

The data visualization elements of the enhanced version of ARK are among the most noteworthy and useful changes. In addition to allowing users to generate customized dashboards highlighting specific challenges and achievements, ARK now incorporates ready-made dashboards that are aligned to the most common uses of the platform. These dashboards include visualizations of MOH-required monthly reporting indicators as well as more detailed analyses of HIV treatment initiation, reengagement tracking, viral load testing coverage and results, multimonth dispensing of ART, tracking of transition to improved dolutegravir-based ART regimens, and even provision of COVID-19-related services. Illustrative cohort cascade and test-and-treat dashboards are depicted in Figures 3 and 4.
By incorporating improved data analysis and visualization functions into ARK, the EpiC team has helped the national program move toward its vision for data-driven action. The system now integrates notification functions that can send service providers secure text message and e-mail-based “cues to action” after analysis of client data in ARK. These cues range from simple scheduling reminders to specific notifications about individual clients needing follow-up based on missed appointments, interruptions in treatment (IIT) access, becoming eligible for multimonth treatment dispensing (MMD) or viral load (VL) testing, and other criteria.
In Jakarta, all primary health care facilities use ARK, as do the district health offices in the five municipalities in Jakarta and the Jakarta PHO.

Next steps

The enhanced ARK platform is being used in 35 provinces, 170 districts, and 582 primary health care facilities nationwide. In Jakarta, all primary health care facilities use ARK, as do the district health offices in the five municipalities in Jakarta and the Jakarta PHO. Nevertheless, the MOH has still more ambitious plans for the system. As the Ministry of Health develops the SIHA patient records system (called SIHA 2.0), the EpiC team will help integrate ARK cohort tracking and other functionalities into the new platform. This integration will help to streamline data entry, validation, analysis, and reporting for the entire national HIV program, facilitating more routine identification of programmatic challenges and opportunities, and freeing up providers to devote more time and energy to the provision of services that are more responsive to client needs.