

HEALTH INFORMATICS, DATA MANAGEMENT AND STATISTICS: AUTOMATING PEPFAR AND MINISTRY OF HEALTH INDICATORS

OVERVIEW

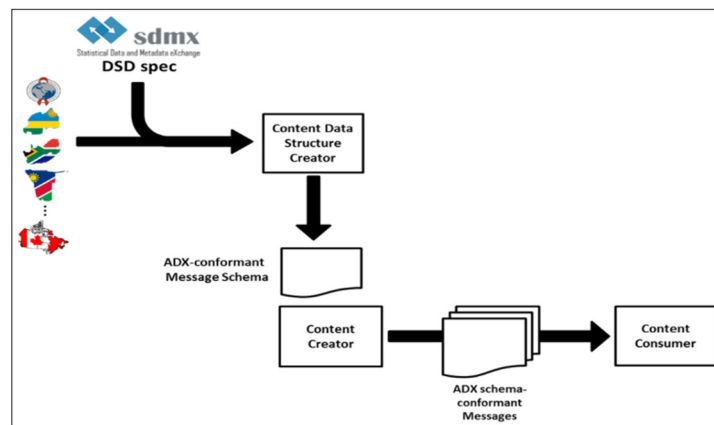
Reliable and timely data are foundational to improving health programs and accelerating progress towards achieving global health goals. eHealth is rapidly transforming the delivery of health services as a key enabler and driver of improved health outcomes. It also provides an essential infrastructure to support information exchange within national health care systems, including electronic medical and health records to support patient care; epidemiologic data to monitor trends and provide clinical and public health decision support; and routine monitoring and evaluation.

The U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) has played a major role in scaling up the implementation and use of Health Information Systems in low and middle-income countries. However, lack of automated exchange of data between electronic medical and health records and the health management information systems impedes the timely and accurate sharing of reliable health data. Even in health facilities using electronic medical records, reports are often printed and manually re-entered into the national health management information systems – a process that is duplicative, time-consuming, and prone to transcription errors.

CDC’S ROLE

With the increased demand for timely decision-making and focus on transparency and accountability, data is critical for both PEPFAR and its partners. Through collaboration and technical assistance to our global HIV programs, the U.S. Centers for Disease Control and Prevention (CDC) helps partner countries to implement automated indicator reporting to improve data completeness and accuracy; develop and foster use of data exchange standards; and ensure timely availability of data for planning programs and measuring progress towards health goals.

- **Supporting seamless data exchange** – CDC leads ongoing efforts to foster interoperability of health information systems. We support and develop the process for automated indicator reporting to improve data completeness and accuracy, and reduce reporting errors at facilities in PEPFAR-supported countries.
- **Developing Aggregate Data eXchange Profile (ADX)** – CDC participates in the development and vetting of ADX, which is ongoing through the industry group, Integrating the Healthcare Enterprise (IHE)¹. IHE is an initiative by healthcare professionals and industry experts to simplify the way computer systems in healthcare share information. ADX provides specifications to guide the development of easy-to-use, formal messages that meet the requirements of reporting indicators for various use cases in different contexts.



¹ <https://ihe.net>

- **Providing technical assistance to support automated data exchange using ADX in PEPFAR countries** – CDC supports data exchange using ADX with PEPFAR’s Data for Accountability Transparency and Impact and several electronic medical record systems.

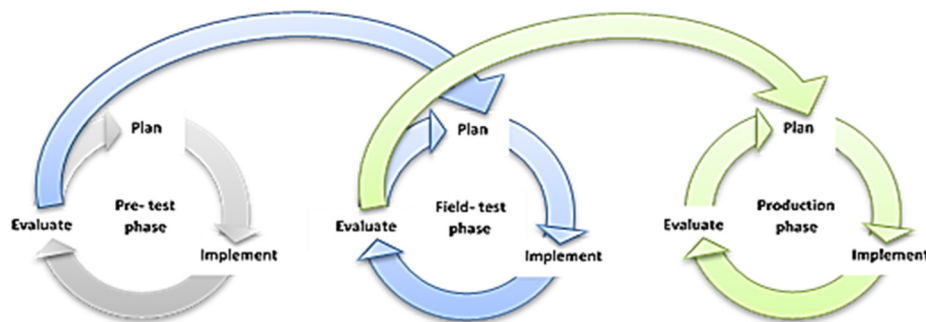
ACCOMPLISHMENTS / RESULTS

- **Published field test results** on a study to electronically automate reporting of HIV indicators from health facility electronic medical records to a health management information system. The study indicated that the process improved both the efficiency and accuracy of reporting².
- **Simulated standardized electronic reporting in Kenya** through a feasibility study that automated indicator data reports from two electronic medical records to a health management information system in the country³.
- **Developed and published a new standard** to support interoperable public health reporting of indicator data through IHE in August 2015.
- **Tested the ADX profile successfully at the IHE North American Connectathon 2016⁵** using three information systems from PEPFAR-support countries. IHE Connectathons are a cross-vendor, live, supervised, and structured testing event where industry leaders test and formally validate implementations of IHE profiles to advance health IT interoperability.
- **Provided technical assistance to partners** to support ongoing efforts to implement ADX for automated indicator reporting.

FUTURE EFFORTS

In the future, CDC plans to:

- **Scale-up efforts to automate PEPFAR and Ministry of Health reporting across PEPFAR-support countries**, which involves planning, implementation, and evaluation to automate indicator reporting at health facilities in PEPFAR countries. A three-phase approach involves pre-testing, field-testing/piloting, and production, where efforts and outcomes from the previous phase form the foundation for the next phase.



- **Enhance the ADX profile** to support current and future indicator reporting needs in different settings.
- **Support the documentation of automated indicator reporting** – CDC will develop an implementation package to help PEPFAR countries implement and scale up automated reporting of PEPFAR and Ministry of Health indicators from electronic systems at clinical facilities. We will then electronically transmit these to PEPFAR’s Data for Accountability Transparency and Impact or Ministry of Health systems.

- **Develop and apply methods to quantify the effects** of automated indicator reporting on data completeness, accuracy, and availability, and level of manual effort required for reporting.
- **Support estimation of cost** by developing and applying methods to quantify the cost of scaling up automated indicator reporting.

BENEFITS OF OUR WORK

High-quality, timely data is key to achieving PEPFAR accountability and transparency goals. CDC enhances PEPAR productivity by improving access to and use of information to achieve health impact. We foster interoperability to enable integration of data using vetted and published standards to improve data quality and availability. We improve the efficiency of data reporting, develop implementation plans for scale-up, and harmonize and integrate data for analyses. We also assure methodologic implementation of data reporting, build local capacity to design and understand data exchange, and evaluate the effectiveness of solutions.

² Kariuki, J., Manders, E., Richards, J., Oluoch, T., Kimanga, D., Wanyee, S., Kwach, J., & Santas, X. (2016). Automating indicator data reporting from health facility EMR to a national aggregate data system in Kenya: An Interoperability field-test using OpenMRS and DHIS2. *Online Journal Of Public Health Informatics*, 8(2). doi:10.5210/ojphi.v8i2.6722

³ <http://www.eventscribe.com/2016/posters/NACCHOInformatics/SplitViewer.asp?PID=Mzg2Mzg2NTYwMA>

⁴ http://www.ihe.net/uploadedFiles/Documents/QRPH/IHE_QRPH_Suppl_ADX.pdf

⁵ <http://www.iheusa.org/connectathon.aspx>