

Automating Data Collection to Enable Rapid Response to Emerging Disease Outbreaks

WAHIT Case Study Series
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The West Africa Health Informatics Team

The West Africa Health Informatics Team (WAHIT) is a proof of concept initiative funded by the U.S. Agency for International Development's (USAID's) Global Development Lab to test innovative technical assistance models and build health informatics leadership. WAHIT is a regional team of software developers and informatics experts based in the West African Health Organization (WAHO), with technical support provided by the USAID-funded Health Policy Plus (HP+) project. WAHIT provides on-demand informatics technical assistance to countries within the region while building local software engineering capacity to support long-term sustainability of health information systems in the region.

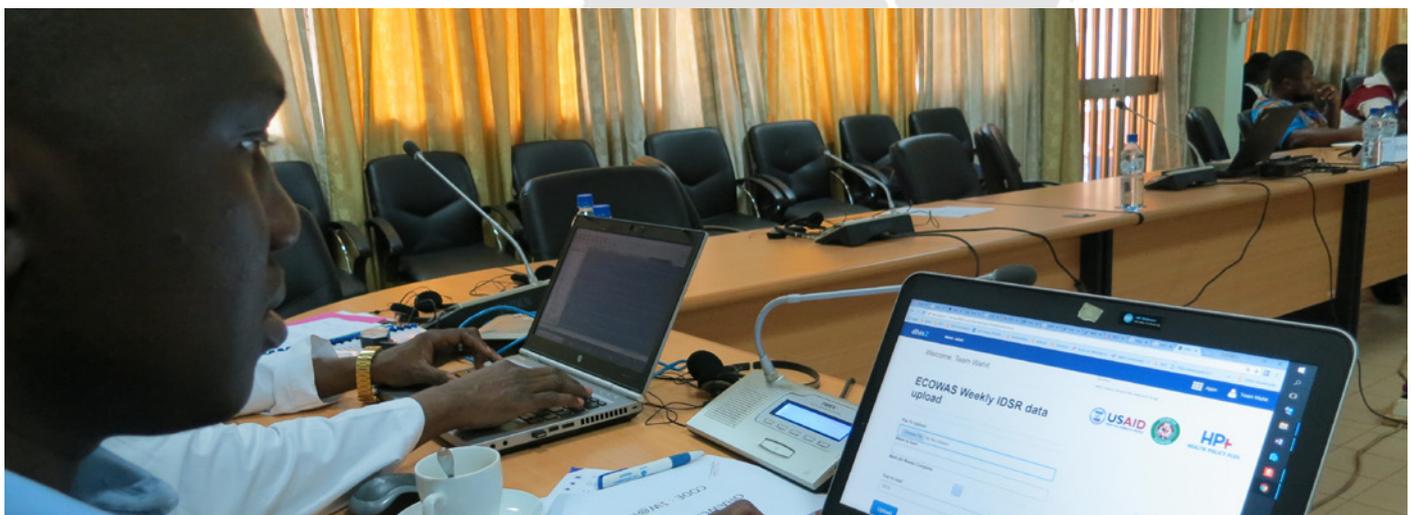
Background

Timely and accurate collection of epidemiological data is an essential component of recognizing and responding to emerging disease outbreaks, curbing infection and minimizing epidemic impact. In the Economic Community of West African States (ECOWAS) region, epidemiological data is often collected through siloed data systems, leading to incomplete surveillance of potential threats. Systems that allow for easy sharing of data and information are needed to improve coordination between states to allow for a more effective and efficient regional response.



THE IDEA IN BRIEF

Epidemiological data is often collected through siloed data systems, which limits access to and understanding of surveillance data that can be used to predict and prevent health threats. To improve data access and sharing across the ECOWAS region, WAHIT developed an application that extracts surveillance data from an Excel-based format, submitted by countries, and converts it into a format that is compatible with a regional database. The application has dramatically increased reporting rates, allowing WAHO to better understand and respond to emerging disease outbreaks.

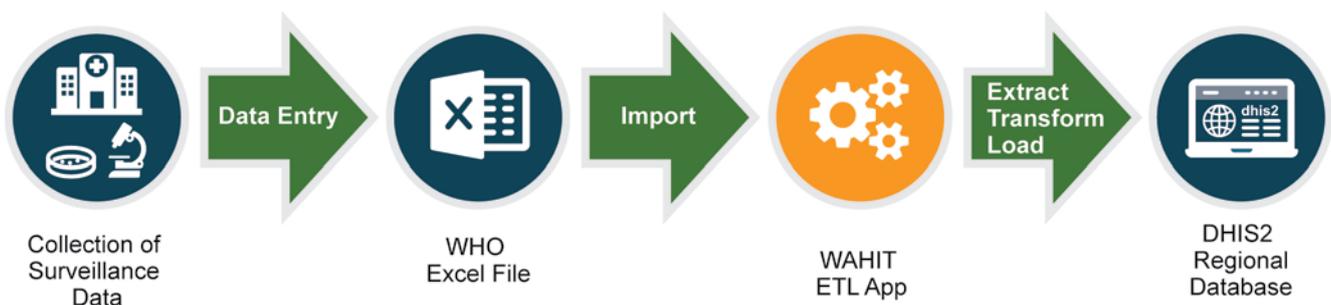


Historically, each country in ECOWAS was responsible for manually entering epidemiological data into two separate systems: a country-specific, national district health information system, and a regional data warehouse. This duplication of effort resulted in low reporting rates and, by extension, insufficient data for an effective epidemic response. WAHIT recognized that to overcome this challenge, an automated data extraction process was needed to synthesize these disparate systems and reduce unnecessary duplications of effort.

WAHIT’s Solution

WAHIT discovered that the majority of ECOWAS countries generated an Excel data file, based on a template developed by the World Health Organization (WHO), as part of country-specific internal reporting processes and theorized that automation of this existing reporting tool into the regional database would improve data collection. To this end, the team developed the Extract, Transform, Load (ETL) tool.

The ETL tool reads each country’s WHO Excel data file to parse collected epidemiological data; organizes the data by disease, date identified, and suspected versus confirmed cases; and converts these data points into a format that is compatible with the regional database, which uses District Health Information System (DHIS2) software. The ETL tool then automatically sends the DHIS2-compatible data to the regional warehouse and confirms receipt of the information.



Results & Next Steps

In the four months since the ETL was first introduced, nine countries have adopted the tool and integrated it into their reporting processes. Reporting rates have increased dramatically as a result—from 71.3 percent to 99.3 percent as of late June. This significant improvement in reporting is critical to enabling WAHO to understand and respond to emerging disease outbreaks among the ECOWAS region’s 340 million inhabitants.

Moving forward, WAHIT is working to integrate epidemiological data directly into countries’ national data warehouses to enable automatic synchronization between national and regional levels, and assisting member countries to deploy the ETL tool within national platforms to aid in the collection of quality, timely, accurate data to inform an effective and efficient epidemic response.

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