U.S. Virgin Islands launches modernized disease surveillance system to transform public health

CSTE Stories FROM THE Field

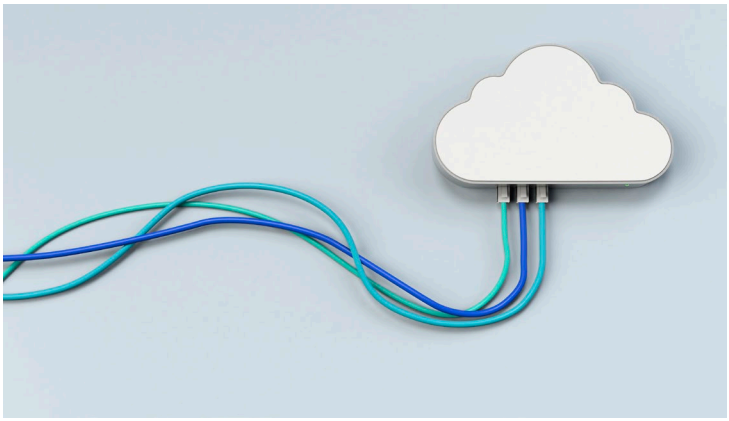
CONTRIBUTOR: *Hannah Cranford, PhD, Epidemiologist, Epidemiology Division, Virgin Islands Department of Health*

CATEGORY: **Nationally Notifiable Diseases Surveillance System**

After identifying the ability to maintain a cloud-hosted surveillance system as a critical need, the U.S. Virgin Islands (USVI) Department of Health worked to migrate to the modernized version of the National Electronic Disease Surveillance System Base System (NBS 7)– becoming the first territory and second jurisdiction to be live in production! With access to a modern, functional, and cost-effective system, USVI is better equipped to protect public health.

The "What"

During January 2024, the U.S. Virgin Islands (USVI) Department of Health identified the need to maintain a cloud-hosted instance of the National Electronic Disease Surveillance Base System (NBS) to support their local Data Modernization Initiative. After consulting with CDC partners and subject matter experts, USVI decided the best course of action was to migrate their integrated disease surveillance system to a new platform hosted on Amazon Web Services (AWS) and to update to the most advanced version, NBS 7, becoming the first territory and second jurisdiction utilizing NBS 7 in production.



USVI chose this option for multiple reasons, including:

- Cost savings
- Additional bandwidth and a faster NBS environment
- Opportunity to build local informatics capacity
- Greater autonomy over the data and its endpoints

After standing up new test and production environments on AWS, copying and transferring the existing database, and developing a protocol for transitioning existing providers' electronic reporting feeds to point to new endpoints, the USVI NBS 7 instance went live on May 6, 2025.

This important investment in public health infrastructure will allow USVI public health, clinicians, policymakers, and other collaborators to work together towards the common goal of protecting the health of the population.

The "So What"

Supporting a USVI disease surveillance system that is modern, functional, and cost-efficient is important to be able to monitor and respond to disease threats quickly and informs appropriate public health action. Updating to NBS 7 in a locally-hosted, AWS environment provides the most up-to-date CDC-supported data system, improves timeliness of reporting by offering local providers more flexibility in electronic reporting options, and gives USVI direct control over workflows. Improved interoperability and maintaining a cloud-based platform were additional benefits of the migration. This important investment in public health infrastructure will allow USVI public health, clinicians, policymakers, and other collaborators to work together towards the common goal of protecting the health of the population.

The "Now What"

To complete the NBS migration, USVI is re-onboarding reporting facilities to send electronic laboratory reports (ELR) to the new system. Additionally, they are now able to offer local facilities support in direct electronic reporting, an option which had previously been unavailable. Ongoing needs include additional coordination with cloud architect and database engineering support, protocol creation and documentation, and training for local staff in AWS, integration engines and processes, programming languages, and public health data formatting and coding standards. Next steps include onboarding CDC message mapping guides and receipt of electronic case report (eCR) data feeds. A future project will develop application programming interfaces (APIs) to service data to the USVI Epidemiology Data Dashboard.

Key contributors to this project include Esther M. Ellis, PhD, Territorial Epidemiologist; Lisa L. Ekpo, DrPH, Deputy Territorial Epidemiologist; Terri Pietka, MS, Data Scientist; Leah de Wilde, MPH, Data Scientist; CDW team.

Funding source: This work was supported in part by the Centers for Disease Control and Prevention (CDC) cooperative agreement #NU38PW000005. Its contents are solely the responsibility of the authors and do not necessarily reflect the views of the CDC.