Vaccine Preventable Disease Surveillance systems in **Uganda**

Assessment of the implementation and use of VPD surveillance systems in Africa.

July 2025

KEY FINDINGS

- VPD systems in use: Epi-Info , DHIS2, eIDSR (Electronic Integrated Disease Surveillance and Response System) , ODK, RDS (Results Dispatch System), ALIS (Assisted Living Integrated Solution), Vigibase
- Dual entry on paper-based and digital tools
- Case-based surveillance, Aggregated data

Analysis Overview

Uganda has developed a comprehensive and well-structured vaccine-preventable disease (VPD) surveillance system, with dedicated personnel at the national level and a dual-entry platform combining paper-based and digital tools. The country operates seven digital systems and reports VPD surveillance data daily, consistently meeting submission timelines and contributing data to WHO AFRO. The system is governed by a formal body and supported by a national digital health strategy, with sustained funding through multiple channels, including the national treasury, departmental budgets, and donor contributions. Uganda's surveillance system supports timely reporting and includes data dashboards at both national and sub-national levels.

The Ministry of Health (MOH) demonstrates strong technical capacity, with sufficient staff, regular training and assessments, and systems in place for monitoring performance, backup, and data security. While data quality assurance frameworks exist, challenges remain with population denominator data accuracy, which are addressed through triangulation and localized mini-censuses during outbreaks or vaccination campaigns. Case-based and aggregated surveillance are both in use and apply to a wide range of diseases under programs like UNEPI and NTLR. However, both systems face challenges related to timeliness and data completeness.

Despite a high rate of computer usage (100%) and substantial mobile device use (70%) for data entry, significant infrastructure disparities persist between rural and urban settings, alongside staffing imbalances. While Uganda has made strides in interoperability—using HL7 FHIR standards and integrating with multiple health systems—its national interoperability framework is still in draft. The long-term vision is to develop a fully integrated electronic medical record system that enables seamless VPD surveillance from facility to national laboratory. Uganda's goals of innovation, integration, and strengthening data-driven public health responses reflects its commitment to improved VPD surveillance.

Uganda was selected for a country-level deep dive because it is in the midst of an important transition, from an integrated aggregate surveillance systems toward a more granular, case-based system, presenting a valuable opportunity to explore the challenges of integrating reporting into an existing surveillance structure. For more information, please read the final report.

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Foundational	Developing	Established	Not Applicable or No Data

Domain/Theme	Sub-domain	Maturity Level
Governance and Strategic Alignment	Existence of a formal governing body	2
	Existence of a Digital Health Strategy	2
	Sustainable funding	2
	Equity infrastructure	1
	Equity policies (rural/urban)	2
	Submission to WHO AFRO regional system	2
Workforce/Technical Capacity	Dedicated VPD surveillance officer	2
	Admin/monitoring team in place	2
	Availability of monitoring tools/SOPs	2
	Software maintenance team in place	2
	Integration/interoperability tech capacity	0
End-user Readiness	End-user satisfaction	2
	End-user training	2
Infrastructure Readiness	Availability of computers	0
	Mobile devices and mobile data access	0
	Stable power/internet infrastructure	1
	Capacity to maintain infrastructure	1
	Infrastructure disparities	1
System Lifecycle and Localization	Length of time system has been in use	2
	Multilingual software maturity	2
	VPD surveillance system transition	
	User support during system transition	0

DIGITAL HEALTH SYSTEMS TO SUPPORT VPD SURVEILLANCE IN **UGANDA**

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Foundational	Developing	Established	Not Applicable or No Data

Domain/Theme	Sub-domain	Maturity Level
Interoperability	Integration with WHO AFRO system	2
	Integration with national HIS	2
	Interoperability standards use (FHIR, ADX)	2
	Existence of national interoperability framework	1
Data Standards and Data Quality	Metadata dictionary	2
	Org units structure	2
	Compliance with WHO AFRO standardized indicators	2
	Data quality governance	2
	Data entry/management training	2
Data Use and Reporting	Data reporting needs	2
	Data sharing practices	2
	Timeliness and quality of CBS data	0
	Timeliness and quality of aggregate data	0
	Case-based data security compliance	2

Use and limitations of the maturity model

The maturity model provides a framework for identifying strengths and gaps in Uganda's VPD surveillance system. It covers key domains like governance, data quality, and infrastructure. However, it simplifies complex realities and may overlook regional variation or the interplay between paper based and digital tools. Results should be interpreted with field insights and stakeholder input.

DIGITAL HEALTH SYSTEMS TO SUPPORT VPD SURVEILLANCE IN **UGANDA**