Vaccine Preventable Disease Surveillance systems in **Botswana**

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

July 2025

KEY FINDINGS

- VPD systems in use: Epi-Info transitioning to DHIS2
- Dual entry on paper-based and digital tools
- Case-based surveillance

Analysis Overview

The survey of vaccine-preventable disease (VPD) surveillance systems in Botswana indicates a solid foundation, with a dedicated person responsible for managing digital VPD surveillance. The country currently employs a dual-entry system using both paper-based and digital tools, with two digital platforms in use—Epi Info and DHIS2—as part of an ongoing transition. Surveillance data is reported on a weekly basis, reports are accessible at the district level, and Botswana routinely shares data with WHO AFRO.

Governance and strategic planning are relatively strong. A formal governing body is in place, a national digital strategy for health management information systems (HMIS) has been adopted, and VPD surveillance is supported through a dedicated budget line in the national treasury. Funding also covers software maintenance, hardware, and power and connectivity infrastructure. However, the absence of a costed implementation plan for digital VPD surveillance represents a key gap in strategic planning and resource alignment.

Operationally, while there are tools and processes in place for system performance monitoring, uptime, and disaster recovery, human resource capacity remains a major constraint. The Ministry of Health (MOH) lacks sufficient technical staff to manage the system's needs, and structured training needs assessments and capacity-building efforts are not routinely conducted. Interoperability is still at a foundational stage, with no integration of VPD surveillance data across systems and limited technical capacity to improve this.

Although VPD data is generally available when needed, disparities in infrastructure stability across sites undermine overall system effectiveness. National dashboards exist and partially meet information needs, but satisfaction levels among both end users and national stakeholders remain low. Looking ahead, the vision is to enable fully digital, real-time reporting to strengthen timely decision-making and improve public health response.

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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)	0
	Submission to WHO AFRO regional system	2
Workforce/Technical Capacity	Dedicated VPD surveillance officer	2
	Admin/monitoring team in place	1
	Availability of monitoring tools/SOPs	2
	Software maintenance team in place	2
	Integration/interoperability tech capacity	0
End-user Readiness	End-user satisfaction	1
	End-user training	1
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	1
	Multilingual software maturity	2
	VPD surveillance system transition	
	User support during system transition	0

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

Use and limitations of the maturity model

The maturity model provides a framework for identifying strengths and gaps in Bostwana'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.