



Vaccine Preventable Disease Surveillance systems in Senegal

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

July 2025

KEY FINDINGS

- VPD systems in use: DHIS2, DHIS2 Tracker
- Dual entry on paper-based and digital tools
- Aggregated data

Analysis Overview

Senegal's vaccine-preventable disease (VPD) surveillance system employs a dual-entry approach, combining paper-based tools with three digital systems for data capture. A dedicated national focal point oversees VPD case surveillance, and data is reported weekly and consistently submitted on time. The system is governed by a formal body and operates within a national HMIS digital strategy. While the digital systems are funded by multiple donors, there is no costed work plan or dedicated funding for software maintenance, infrastructure, or hardware replacement. Reports are produced at both national and sub-national levels, and data is shared with WHO AFRO and other national and international partners for planning and resource allocation.

Despite strong data reporting practices and comprehensive coverage, Senegal faces several capacity challenges. The MOH technical team is understaffed, with limited training and no documented processes for performance monitoring, system recovery, or data breach response. Although 100% of sites use computers for data entry and receive mobile data, only some are equipped with mobile devices. There are known infrastructure disparities between rural and urban areas, and no policies are in place to ensure equitable access.

The surveillance system supports interoperability with the WHO AFRO system and at least two other health information systems. However, integration capacity is constrained by limited technical expertise and a lack of routine training. No data exchange standards like HL7 FHIR or ADX are currently in use, and the national interoperability framework remains in draft form. Nonetheless, the system includes a metadata dictionary and up-to-date facility hierarchies, and it uses WHO AFRO standardized indicators. Stakeholders express satisfaction with the system, and Senegal envisions a future fully digitized and AI-enhanced surveillance platform capable of predictive analytics to prevent VPD outbreaks.

In addition to completing the landscape survey, Senegal was selected for the deep dive assessment due to its diverse use of digital surveillance tools, its integration with national health information systems, and its importance as a representative context balancing digital innovations with infrastructure and capacity challenges. For more information, please read the final report.

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

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	0
	Software maintenance team in place	0
	Integration/interoperability tech capacity	0
End-user Readiness	End-user satisfaction	0
	End-user training	2
Infrastructure Readiness	Availability of computers	0
	Mobile devices and mobile data access	2
	Stable power/internet infrastructure	2
	Capacity to maintain infrastructure	1
	Infrastructure disparities	1
System Lifecycle and Localization	Length of time system has been in use	2
	Multilingual software maturity	
	VPD surveillance system transition	0
	User support during system transition	0

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

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)	0
	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	0
Data Use and Reporting	Data reporting needs	2
	Data sharing practices	2
	Timeliness and quality of CBS data	
	Timeliness and quality of aggregate data	
	Case-based data security compliance	

Use and limitations of the maturity model

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