



# Vaccine Preventable Disease Surveillance systems in Malawi

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

July 2025

## KEY FINDINGS

- VPD systems in use: One Health Platform
- Dual entry on paper-based and digital tools
- Case-based surveillance

## Analysis Overview

The vaccine-preventable disease (VPD) surveillance system in Malawi is supported by the One Health Platform and one other digital system and led by a dedicated national focal point. Data is reported weekly and consistently submitted to WHO AFRO. The system benefits from strong governance, including a formal governing body, a national digital HMIS strategy, a costed work plan, and funding from multiple sources, including the national treasury and donors. Malawi has dedicated funding for software development and infrastructure maintenance. Although data quality assurance mechanisms exist and the system generates reports used at both national and sub-national levels, human resource capacity remains a constraint. The MOH technical team lacks sufficient staff, and while training needs are identified, training assessments are not routinely carried out.

Case-based surveillance is operational nationwide and not limited to specific diseases. However, data quality and timeliness challenges affect both case-based and aggregated data. The system uses CRVS data from the national statistics office and WHO AFRO-standardized indicators, but the existence of a metadata dictionary is unclear. While 80% of sites use both computers and mobile devices for data entry, infrastructure issues, especially in rural areas, affect reliable data submission. These challenges are compounded by disparities in staffing levels and mobile device usage between rural and urban areas, although national policies exist to support equity. Mobile data and devices are provided to end users, but stable infrastructure and sufficient technical support remain gaps.

Malawi's VPD surveillance system is integrated with WHO AFRO, though it is not yet interoperable with other national systems. A national interoperability framework exists but is not consistently applied. While the MOH technical team has some capacity for managing interoperability, regular training assessments are lacking. Data sharing with other ministries and partners is underway but not fully formalized. Overall satisfaction with the system is high, and the long-term vision includes establishing a dedicated server to host databases. Despite current strengths, improvements in infrastructure reliability, human resource capacity, and full implementation of interoperability standards are critical to advancing Malawi's VPD surveillance system.

## 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                      | 0              |
|                                    | 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             | 1              |
|                                    | Availability of monitoring tools/SOPs      | 2              |
|                                    | 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       | 1              |
|                                    | Capacity to maintain infrastructure        | 0              |
|                                    | Infrastructure disparities                 | 0              |
| System Lifecycle and Localization  | Length of time system has been in use      | 1              |
|                                    | Multilingual software maturity             |                |
|                                    | VPD surveillance system transition         | 0              |
|                                    | User support during system transition      | 0              |

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

### Use and limitations of the maturity model

The maturity model provides a framework for identifying strengths and gaps in Malawi's VPD surveillance systems. 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.