**Use of Performance Monitoring metrics**

WHO strongly recommends that programs monitor multiple aspects of their surveillance systems. Regular, systematic monitoring of the system performance will provide confidence in the quality of the data and help to identify areas for improvement. Which parameters are to be monitored will depend on the availability of data, however ideally programs would monitor multiple different qualities of their system(s) including timeliness, completeness, stability, and management of each.

The metrics listed below are meant to be a reference for countries to use when designing or improving their surveillance system monitoring. In addition to providing options for performance monitoring, there are also a number of proposed metrics for monitoring how a system is being managed.

The metrics provided are either taken directly or derived from published guidance as noted below each one. In most cases, these metrics have appeared in multiple different global and regional guidelines and are generally recognized as standardized.

**DOMAIN** **1**: **Detection and assessment of an emerging or re-emerging respiratory virus.**

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| --- | --- |
| **Timeliness** | Percentage of notifiable events and epidemic-prone diseases reported in the last 12 months which were detected within 7 days of occurrence: \_\_\_\_%  *Source:*  [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/)*, surveillance scorecard* |
| Percentage of signals reported in the Event-based Surveillance system (or other Early Warning Surveillance System) in the last 12 months which were verified as true events within 24 hours of being detected: \_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| Percentage of verified true events reported in the Event-based Surveillance system (or other Early Warning Surveillance System) in the last 12 months which were notified within 24 hours of verification: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| Percentage of outbreaks or notifications of epidemic-prone disease reported in the last 12 months which have completed an effective initial response within 7 days of Notification: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| Percentage of laboratory results for investigated events or reported epidemic-prone diseases in the last 12 months which were available to response teams within 3-7 days: \_\_\_\_%  *Source:* [*Technical Guidelines for Integrated Disease Surveillance and Response in the Africa Region*](https://www.afro.who.int/publications/technical-guidelines-integrated-disease-surveillance-and-response-african-region-third) *(WHO AFRO)* |
| Percentage of outbreak reports or investigations of epidemic-prone diseases from the last 12 months which were sent to national authorities within 2 weeks of the end of the outbreak investigation: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| Percentage of outbreak responses in which a response team deploys within 48 hours of decision to deploy: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| **Completeness** | Percentage of notifiable events and epidemic-prone diseases reported in the last 12 months which had no missing information: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* and[*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of reporting sites which delivered reports at the expected interval over the past 12 months: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* and[*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of signals/events reported through EBS channels in the last 12 months which were triaged and verified: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* (note: target is not specified in source material)*.* |
| **Stability** | Variability in numbers of notifiable events and epidemic-prone diseases reported per year: have there been unexpected aberrations in the reporting of notifiable events or epidemic-prone diseases in the past year (i.e. unexpected surges or drops in reporting)? \_\_\_\_\_  If yes, are there identifiable or precipitating causes such as lapse in funding, changes in staffing, civil or social disruptions, natural disasters, etc.?  List causes:  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| **Sensitivity** | Percentage of notifiable events and epidemic-prone diseases detected by any means in the last 12 months which were reported through the event-based surveillance or the Nationally Notifiable Diseases system: \_\_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| Percentage of signals in the last 12 months which were determined to be actual, true events upon verification: \_\_\_\_%  *Source:* Adapted from[*Technical Guidelines for Integrated Disease Surveillance and Response in the Africa Region*](https://www.afro.who.int/publications/technical-guidelines-integrated-disease-surveillance-and-response-african-region-third) *(WHO AFRO)* |
| **Data Reporting and Use** | Percentage of outbreak and confirmatory lab test reports in the last 12 months which were disseminated and shared back to the reporting entities: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |
| Percentage of outbreaks and notifiable outbreak-prone disease cases occurring in the last 12 months which have been included in summary reports to national stakeholders and policymakers: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| **System management** | Percentage of surveillance staff who have received at least one training to improve event-based surveillance and notifiable disease reporting in the last 12 months: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| Percentage of sub-national reporting entities which received supportive supervision to improve data collection and  timeliness in the last 12 months: \_\_\_\_%  *Source:* [*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) *surveillance scorecard* |

**DOMAIN 2: Monitoring epidemiological characteristics of respiratory viruses in inter-pandemic periods.**

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| **Timeliness** | Margin of error or accuracy within which the monitoring system able to identify the start of a seasonal epidemic?  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of reports that all routine surveillance reporting sites reported within the designated reporting time in the last 12 months: \_\_\_\_%  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of weeks in the last 12 months in which laboratory data were reported to a WHO Regional or global platform (e.g. RespiMart) on time: \_\_\_%  *Source:* Adapted from[*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of clinical specimens submitted from sentinel sites to the testing laboratory within the designated timeframe: \_\_\_\_%  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of test results reported back to the sentinel site from the testing laboratory within the designated timeframe: \_\_\_\_%  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of sequence results uploaded into the whole genome sequence global database within the designated timeframe: \_\_\_\_%  *Source:* [*End-to-end integration of SARS-CoV-2 and influenza sentinel surveillance*](https://iris.who.int/handle/10665/351409) *(WHO)* |
| Up to how many weeks past is your hospital bed occupancy data reasonably complete, credible and actionable? \_\_\_\_ weeks  *Source:* developed by Mosaic Team; based on similar metrics for general surveillance monitoring. |
| Percentage of bed occupancy reports submitted to central monitoring authority within the designated timeframe: \_\_\_\_%  *Source:* developed by Mosaic Team; based on similar metrics for general surveillance monitoring. |
| **Completeness** | Percentage of case reports from all routine surveillance reporting sites that have both lab and case data forms completed: \_\_\_\_%  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of case data reports that have complete data for the last 12 months: \_\_\_\_%  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| Percentage of the last 52 weeks for which data were uploaded into to WHO Regional or global platform (e.g. RespiMart): \_\_\_\_%  *Source:* Adapted from[*WHO RespiMart standard operating procedures*](https://www.who.int/tools/RespiMart) |
| Number of sample shipments sent to a WHO Influenza Collaborating Center in the past 12 months: \_\_\_\_  *Source: Adapted from* [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| **Stability** | Number of times in the past year that routine reporting from any site or jurisdiction stopped. (This lack of reporting could be because of stockouts of supplies, absence of personnel, lapses in funding, natural disasters, civil or social disruptions, or other logistical challenges): \_\_\_\_\_  *Source:* Adapted from [*Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System*](https://iris.who.int/handle/10665/379678) *(WHO)* |
| **Sensitivity** | Proportion of the total population or administrative areas covered by sentinel sites: \_\_\_\_%  *Source:* [*End-to-end integration of SARS-CoV-2 and influenza sentinel surveillance*](https://iris.who.int/handle/10665/351409) *(WHO)* |
| Proportion of total hospital beds monitored by the healthcare facility occupancy monitoring system: \_\_\_\_%  *Source: developed by Mosaic Team; based on similar metrics for general surveillance monitoring.* |
| **Data Reporting and Use** | Proportion of routine surveillance summary reports made available to Ministry of Health leadership in the past 12 months: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| Proportion of healthcare facility bed occupancy summary reports made available to Ministry of Health leadership in the past 12 months: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| **System management** | Proportion of surveillance staff at reporting facilities who have received refresher training in the past 12 months: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |
| Proportion of routine reporting sites that have received at least 1 supportive supervisory visit in the last 12 months: \_\_\_\_%  *Source:* Adapted from[*Africa CDC Event-based Surveillance Framework*](https://africacdc.org/download/africa-cdc-event-based-surveillance-framework-2/) |