

Section 8

Monitor, evaluate and improve surveillance and response

This section describes how to:

- Identify targets and indicators
- Monitor the quality of surveillance activities at the district level
- Supervise surveillance and response activities
- Evaluate the surveillance and response system
- Take action to improve surveillance and response system

8.0 Monitor, evaluate and improve surveillance and response

Monitoring of surveillance and response systems refers to the routine and continuous tracking of the implementation of planned surveillance activities (for example, reports are received on time). Evaluation periodically (for example annually) assesses whether surveillance and response objectives have been achieved. Both monitoring and evaluation are used to improve surveillance and response.

Section 3 of these guidelines describes how each month, the health staff responsible for surveillance at the health facility and at the district level review and analyze the data reported during the month. Each month they make conclusions about:

- The timeliness and completeness of reporting from each level, and
- The quality of routine prevention and control activities are taking place so that when problems are detected, districts respond with appropriate action.

The same information can also be used to routinely monitor and annually evaluate:

- The timeliness in reporting immediately-notifiable diseases, conditions or events
- Outbreak investigations and responses and
- Reporting of summary data on a routine basis.

When problems are detected in the surveillance and response system, action can be taken to strengthen the system. By making corrections as they are identified, it is more likely that the end of the year results will show the desired outcomes. For example, use the monthly monitoring data to do an evaluation at the end of the year. Questions to help evaluate include:

- Are surveillance objectives for existing activities being met?
- Was surveillance data used for taking public health action?
- Did surveillance, laboratory and response activities have an impact on the outcome of health events in the district?

The information in this section will describe how to routinely monitor and annually evaluate the performance of the surveillance system and specific disease or public health events control and prevention programs.

8.1 Identify targets and indicators

Using indicators is a method for measuring the extent of achievement for a particular program or activity. The achievement is compared to overall recommended standard quality practices. It can also measure progress towards implementing an overall program target. For example, a district may have as its goal the achievement of 100% completeness of reporting by a certain period. An indicator can be developed to measure the proportion or percentage of facilities that are reporting. This proportion is then compared with the desired goal or target, and can be used to evaluate progress and, therefore, the quality of the service or activity.

List possible indicators to measure in the district. These may be indicators that relate to national goals and indicators, or to specific plans for improving integrated surveillance and response activities in a district. Select the indicators that are most relevant to the district's plan for improving surveillance this year, and that will provide information that the district can use.

Selected indicators are likely to be the following:

- Indicators for measuring quality of surveillance in general. For example, to evaluate timeliness and completeness of reporting, select as an indicator the percentage of health facilities that reported routine information on time.
- Indicators for measuring quality of surveillance for specific diseases or public health events (for example, to monitor response to surveillance data about meningitis, select as an indicator the percentage of health facilities where meningitis outbreaks were detected -- that is, the rate was more than 15 suspected cases per 100 000 population -- and which were laboratory confirmed.)

A list of recommended indicators for monitoring core functions of integrated disease surveillance and response is on the next page.

Suggested indicators for monitoring core indicators at the health facility are in Annex 8B. Core indicators for the district level are in Annex 8C, for the province in Annex 8D and for the national level in 8E.

**Indicators for monitoring performance of core functions of
integrated disease surveillance and response**

1.	Proportion of health facilities submitting weekly (or monthly) surveillance reports on time to the district
2.	Proportion of districts submitting weekly (or monthly) surveillance reports on time to the next higher level
3.	Proportion of cases of diseases targeted for elimination, eradication and any other diseases selected for case-based surveillance which were reported to the district using case-based or line-listing forms
4.	Proportion of suspected outbreaks of epidemic-prone diseases notified to the next higher level within 2 days of surpassing the epidemic threshold
5.	Proportion of districts in which a current trend analysis (line graph or histogram) is available for selected priority diseases
6.	Proportion of reports of investigated outbreaks that include analyzed case-based data
7.	Proportion of investigated outbreaks with laboratory results
8.	Proportion of confirmed outbreaks with a nationally recommended public health response
9.	Case fatality rate for each epidemic prone disease reported
10.	Attack rate for each outbreak of a priority disease
11.	The number of epidemic detected at the national level and that were missed by the district level during the last year
12.	Proportion of districts that report laboratory data for diseases under surveillance
13.	Proportion of district laboratories that received at least one supervisory visit that included written feedback from the provincial or national level during the last year
14.	Proportion of provinces reporting monthly analyzed laboratory data to the national reference laboratory

8.1.1 Select data for measuring the indicators

After you have selected relevant indicators, specify the numerator and the denominator. For example, a district objective is for all health facilities to keep trend lines for selected priority diseases. The numerator and denominator are defined as follows:

Indicator: The proportion of health facilities in the district that keep trend lines for priority diseases.

Numerator: The number of health facilities that keep trend lines for priority diseases.

Denominator: The number of health facilities in the district.

8.1.2 Ensure sources of data are available

Each level should make sure that the level it supervises has the following sources of data available.

Form	Health Facility	District	Provincial	National
Monitoring chart for tracking indicators (<i>Sample charts are in Annex 8A.</i>)	X	X	X	X
Outpatient register	X			
Inpatient register	X			
Health facility reporting forms	X			
Case-based and/or line listing reporting forms	X	X	X	X
Outbreak investigation report	X	X	X	X
Log of suspected outbreaks and rumours	X	X	X	X
Supervisory reports from district and/or province	X	X	X	X
Laboratory reports received	X	X	X	X

8.2 Monitor the quality of the surveillance activities at district level

An important indicator of a quality reporting system is the timeliness and completeness at each level. When reports are sent and received on time, the possibility of detecting a problem and conducting a prompt and effective response is greater. Completeness of reporting describes whether all the reporting units have reported as expected. If reports are late, or are not submitted, the aggregated information for the district (or other administrative area) will not be accurate. Outbreaks can go undetected, and other opportunities to respond to public health problems will be missed.

8.2.1 Monitor detection and notification of immediately reportable diseases or events

Monitor how well the system is able to detect immediately notifiable diseases or events. Monitor the interval between the onset of the first known case and when first case was seen in the health facility. If this interval is too long, it will seriously affect the outcome of individual patients and will alter the spread of the outbreak.

Other intervals to monitor for detection of immediately reportable diseases include monitoring reporting from the community to the health facility (within 48 hours of onset of illness), from the health facility to the district (within 24 hours) and from the time the threshold is reached to a concrete response (within 48 hours).

8.2.2 Monitor the timeliness and completeness of monthly reporting

Routinely monitor the receipt of reports to evaluate the timeliness of reporting and the completeness of the information. Use a monitoring tool such as a record of reports received to monitor timeliness and completeness of reporting in your district. A sample form for recording timeliness of reporting is in Annex 8A at the end of this section.

If you routinely record and review the dates on which reports are received, the effectiveness of the system can be assessed easily each month during the analysis of routine and case-based data. For example, use the record of reports received to:

- Measure how many reporting units submitted reports for a given month
- Identify which reporting units have reported
- Measure how many reports were timely i.e. submitted before the last day of the following month (for example, March data received by the next level by 30 April).

8.2.3 Identify problems and take action

If the monitoring information shows that a health facility or other reporting unit has not provided a report, or if the report is not on time, contact the surveillance focal point at the facility. Work with the designated staff to identify what has caused the problem and develop solutions together. For example, find out if a reliable supply of forms or other reporting method (such as text messaging or radiophone). Additionally, ask if a new staff person has started at the facility and has yet to receive orientation on the procedure for reporting. Or, find out if health staff receive feedback about reports they have made and have resources to take action as a result of the information.

Make plans with the reporting unit to find solutions for improving the situation. Explain that when information is complete, the district can assist health staff more efficiently with planning responses and carrying them out. For example, if lack of supplies is a problem, the district can use the reporting information to advocate with higher levels in the system.

8.2.4 Report timeliness and completeness to other levels

When routine reports of the number of cases are sent to the provincial, regional or national level, also send the necessary data for timeliness and completeness. This will help the other levels understand the situation more clearly and evaluate the quality of the data that is being sent. For example, if the report to the central level states that two cases of measles were detected during the month, it should also include information about the number of health facilities that reported. It will make a difference to the other levels when they evaluate the information if the 2 cases occurred with only 20% rather than 100% of the units reporting.

8.3 Supervise surveillance and response activities

Supervision is a process of helping health staff to improve their work performance. Supervision is not an inspection. Rather, good supervision aims to sustain good quality services rather than finding things that are wrong.

In a good system, supervisors and health professional work together to review progress, identify problems, decide what has caused the problem and develop feasible solutions.

8.3.1 Prepare job descriptions for surveillance staff

Job descriptions are the basis for conducting supervision and assessing performance. Review the job descriptions of health staff who have a role in the surveillance and response system. Make sure that the job description states:

- The surveillance tasks the specific category of health staff should perform
- To whom the health staff person reports
- Other health staff that are supervised by the specific category or person.

8.3.2 Prepare a supervision plan

Include surveillance and response targets in the overall plan for supervision in your district. For example:

- Decide how often to monitor health staff performance. For example, a district may decide to conduct a supervisory visit at least 2 times a year for each health facility. In some countries, depending on resources, supervisory visits take place more often (monthly, for example).
- Ask health facility supervisors to make a schedule of the supervision they will conduct over the next year in their own facilities and to any community sites that report to the facility.
- Make sure that transport is available for supervision and for surveillance activities that require transportation. For example, coordinate travel or logistics for surveillance supervisory visits with visits made by other programs or activities.

- Include other reporting sites in supervision of district surveillance activities such as clinics, medical centres and community reporting sites in the overall plan. Include private health centres if feasible.
- Identify and obtain necessary resources for supervision.

8.3.3 Use a supervisory checklist

Each health facility has unique problems and priorities that require specific problem solving and corrections. To maintain the positive motivation of the health facility staff for making the improvements, consider developing a graduated checklist to guide the supervisory visit. The items listed in a graduated checklist are selected based on what has been achieved so far at the health facility. For example, when the facility has achieved one objective (using standard case definitions consistently, for example), work with health facility staff to include the next indicator or item for monitoring performance (using thresholds for action, for example). Revise the supervisory checklist accordingly. Use it during future visits to help health staff monitor their activities and progress towards an improved system.

During the visit, use a checklist to monitor how well health staff are carrying out the recommended surveillance functions. For example, a district surveillance officer visiting a health facility for a supervisory visit should verify the following:

Identify and register cases	Check in the clinic register to see if the diagnoses correspond to the recommended case definition.
	Check the register to see if all the columns in the registry are filled out correctly.
Confirm cases	Compare the laboratory records for priority diseases with the number of cases seen in the clinic for the same period of time. For example, compare the number of positive malaria slides with the reported number of hospitalized malaria cases.
Reporting	Ask to see copies of the most recent reports or for the most recent reporting period. Compare the number of cases of

priority diseases that were reported with the number recorded in the register.

Check the date on which the case report was sent against the date recommended for sending the report.

Check the reports to make sure they are complete and accurate.

**Review and
analyse data**

Verify that trend lines are prepared and kept up-to-date for priority diseases. Ask to see the “Health Facility Analysis Book,” if these are in use in your district. Look to see if the trend lines for selected diseases are up-to-date.

Preparedness

Look at the stocks of emergency drugs, supplies and protective clothing to be sure there is an adequate supply.

Note: A sample supervisory checklist is in Annex 8F at the end of this section. The questions to be answered during the supervisory visit can be adapted or modified to meet the specific concerns and extent of progress towards an integrated surveillance system within the health facility.

8.3.4 Conduct supervisory visits

Begin regularly scheduled supervision in the district to ensure that:

- Appropriate supplies (e.g. forms, job aids) and required standard case definitions/ guidelines are available
- Health staff know how to identify and use standard case definitions to record suspected cases of priority diseases seen in their health facility.
- Priority diseases are recorded in the case register according to the case definition.
- Some data is analyzed in the health facility to identify thresholds to take action both for routinely reported priority diseases (disease of public health

importance) and case-based diseases (epidemic prone diseases, and diseases targeted for eradication or elimination).

- Reported cases of diseases for which a single case is a suspected outbreak are investigated promptly.
- Response takes place when outbreaks are confirmed, or when problems are identified in routine reporting.
- Response actions are monitored and action is taken by the health facility to improve surveillance actions and readiness for outbreak response.

Make sure during the visit to:

1. Provide feedback to health staff during each visit. Let the health staff know what is working well and what is not working. Also give feedback on how the data reported previously was used to detect outbreaks and take action to reduce illness, mortality and disability in the district. If improvements are needed, discuss solutions with the staff.
2. Provide on-the-job training as needed if a problem is identified. For example, during a review of the analysis workbook, the supervisor noted that case fatality rates were not calculated correctly. The supervisor met with the health staff who do the calculation and reviewed the steps for calculating the rate with the staff.
3. Follow up on any request for assistance such as for emergency response equipment or supplies.
4. If a solution to a pre-existing problem was identified in a previous visit, check to see how well the solution has been implemented. Find out if problems are still occurring and modify the solution if necessary.

8.3.5 Write a report of the supervisory visit

Provide in the report achievements that were recognized during the visit. Also state the actions that were planned with the health staff and any requests for additional resources, funds or special problems.

8.3.6 Use supervisory visits to improve surveillance activities in the district

Visits of surveillance supervisors and regional or provincial disease control programs are good opportunities to discuss and improve disease control in your district. For example, if a national malaria control person visits the district, you can discuss why the inpatient malaria deaths have not been declining. You can ask about additional ideas or resources that the malaria control program can provide.

8.4 Evaluate performance of surveillance and response system

The purpose of the evaluation is to assess the effectiveness of the surveillance and response system in terms of timeliness quality of data, preparedness, case management, overall performance and using the indicators to identify gaps or areas that could be strengthened

Depending on the development status of surveillance in a district, select indicators for evaluation that will provide information that relates to the district's priorities and objectives for the year.

8.4.1 Compile and organize monitoring data and other results

Gather data from several sources. For example:

- Review the objectives for the year listed in the district's annual plan for improving surveillance and response.
- Gather the monthly summaries of cases and deaths reported to the district, spot maps, and other analysis results performed by the district.
- Collect as well any results from special surveys or studies that were done in the district over the last year.
- Include case investigation forms and reports of outbreak response activities that took place in the district.
- Gather summary information from the community and also from health staff.

8.5.2 Analyze results

As you evaluate the summary data for the year, decide:

- Were the reports complete, on time and accurate?
- What were significant changes in disease or event trends during the year? If an increase occurred, was the problem identified?
- If additional cases are still occurring, why are they occurring? Where are they occurring?
- Were appropriate and timely actions taken in response to the surveillance data?
- Were supervisory visits conducted as planned and follow up tasks carried out as planned?
- Did the community feel that response activities were successful?
- Were any actions taken to address health staff requests or suggestions about services or surveillance?
- Were appropriate measures taken to prevent similar events?

8.5.3 Identify problems and their causes

If problems occurred, and the district did not meet an expected target, or reach a desired level of performance with any indicator, find out what caused the difference between what was planned and what actually occurred. If a problem is identified, talk with the district team and health facility staff to find out the possible causes of the problem.

8.5.4 Update plans for improvements to surveillance and response

Include in the district plan successful activities that should continue. Also include feasible solutions selected as a result of analysis of this year's annual evaluation. Plan to implement the solution. For example:

1. State the new activity and its objectives
2. Specify the personnel who will carry out the activity
3. Estimate the cost of the activity (if any)
4. Develop a timetable for the activity. Define the sequence of activities in logical order.

5. Specify the logistics for the new activity (equipment, personnel, transportation, resource allocation)

8.5.5 Provide feedback to health facilities about the evaluation

Provide a report and give feedback to health facilities and others in the district about the results of the evaluation activity. Mention in the feedback report:

- What the objectives were for the year
- What was actually achieved
- What were likely reasons for any differences between what was planned and what was achieved
- Recommended solutions and prioritized activities for improving surveillance and response in the district.

Annexes to Section 8

- ANNEX 8A** Sample form for recording timeliness and completeness of monthly reporting from the health facility to the district level
- ANNEX 8B** IDSR core indicators for the health facility level
- ANNEX 8C** IDSR core indicators for the district level
- ANNEX 8D** IDSR core indicators for the provincial level
- ANNEX 8E** IDSR core indicators for the national level
- ANNEX 8F** Monitoring chart for use of indicators at district, regional or provincial level
- ANNEX 8G** Checklist for supervising surveillance and response activities at the health facility

ANNEX 8A Sample form for recording timeliness and completeness of monthly reporting from the health facility to the district

Legend

T = arrived on time

L = arrived late

NR=report not received

Country _____ District _____ Year _____

Name of health Facility	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total number of reports expected (N)												
Total reports sent on time (T)												
Total reports sent late (L)												
Total number of reports not received (W)												
Timeliness of the reports = $100 * T / N$												
Completeness of reporting = $100 * (N - W) / N$												

*The timeliness and completeness are expressed as percentages (%). When the surveillance system is good, the rates for timeliness and completeness should approach 100%. This table allows for monitoring the progress of these two indicators in the district so that action can be taken to improve timeliness for each health facility in the district.

ANNEX 8B

Core indicators for the health facility level

Indicator	Purpose	Numerator	Denominator	Source of information	Target
1 Proportion of complete ¹ surveillance reports submitted on time to the district	Measures the practice of health facilities in submitting timely surveillance reports to the next level	Number of complete surveillance reports submitted on time to the district	Number of expected surveillance reports from the health facility	Monitoring chart for timely submission of report ²	80%
2 Proportion of priority diseases for which a current line graph ³ is available. ⁴	Measures the practice and capacity to analyze surveillance data	Number of priority diseases for which a current line graph is available.	Number of priority diseases	The activity checklist for the “in charge” at the health facility and the IDSR summary reporting forms from the health facility	80%
3 Proportion of cases of diseases targeted for elimination, eradication and any other disease selected for case-based surveillance reported with case-based forms or line lists.	Measures reporting of surveillance data with detailed information to use for further analysis	Number of diseases selected for case-based surveillance reported with case-based forms or line list	Total number of cases of diseases selected for case-based surveillance that occurred in the health facility	Routine summary reports and case-based or line listing reports	80%
4 Proportion of suspected outbreaks of epidemic prone disease notified to the district level within 2 days of surpassing the alert threshold	Measures early detection and timely reporting of outbreaks	Number of suspected outbreaks of epidemic prone diseases notified to the district within 2 days of surpassing the alert threshold	Total number of suspected outbreaks of epidemic prone diseases in the health facility	Health facility log of suspected outbreaks and rumors	80%
5 Case fatality rate for each epidemic prone disease reported	Measures quality of case management	Number of deaths from each of the epidemic-prone diseases	Number of cases from the same epidemic-prone disease	Routine reports and outbreak investigation reports	Depends on disease

¹ “Complete” in this indicator means that all possible cells in the reporting forms are filled in.

² A chart for monitoring health facility performance is on the next page.

³ The national IDSR team should define the list of diseases for which a line graph should be kept at the health facility level. AFRO recommends that at a minimum, health facilities maintain current line graphs for 1) weekly trend analysis of cerebrospinal meningitis, particularly in the meningitis belt countries, 2) monthly malaria inpatient cases and deaths in children under 5 years of age and 3) trends for malaria in children under 5 years of age.

⁴ “Current” in this indicators means that the line graph display should reflect data within the past three months from the day of the assessment.

Chart for monitoring performance of IDSR indicators at health facility level

Instructions:

Use this chart to keep track of the health facility's performance with those indicators relevant to health facility performance for IDSR.

Each month, summarize and compile the health facility's summary data for priority diseases.

Report the summary data to the district level on time. Record on this chart the indicator results.

Share this chart with the district supervisor during his or her visit to the health facility, or bring it to the quarterly district meeting.

Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Proportion of complete surveillance reports submitted on time to the district												
Proportion of priority diseases for which a current line graph is available												
Proportion of cases diseases selected for case-based surveillance, which were reported to the district using case-based or line listing forms												
Proportion of suspected outbreaks of epidemic prone diseases notified to the district level within 2 days of surpassing the epidemic threshold												
Case fatality and attack rate for each epidemic-prone disease reported												
Reply YES or NO to the following checklist items:												
Were surveillance reports submitted on time?												
Are the trend graphs up-to-date?												
If YES, have you observed any changes in the trends?												
If YES, has the threshold been crossed?												
If YES, have you taken action to alert the district?												

ANNEX 8C

Core indicators for the district level

Indicator	Purpose	Numerator	Denominator	Source of information	Target
1 Proportion of health facilities submitting surveillance reports on time to the district	Measures the timeliness of submission of surveillance reports	Number of health facilities that submitted surveillance reports on time to the district	Number of health facilities in the district	Monitoring chart for timely submission of report ⁵	80%
2 Proportion of cases of diseases targeted for elimination, eradication and any diseases selected for case-based surveillance reported with case-based forms or line lists.	Measures reporting of surveillance data with detailed information to use for further analysis	Number of diseases targeted for elimination, eradication, and any diseases selected for case-based surveillance reported with case-based forms or line list	Total number of cases of diseases selected for case-based surveillance that occurred in the district	Routine summary reports and case-based or line listing reports for diseases targeted for elimination and eradication and for any diseases selected for case-based surveillance	80%
3 Proportion of suspected outbreaks of epidemic-prone diseases notified to the provincial level within 2 days or surpassing the epidemic threshold	Measures use of data and thresholds for early detection of outbreaks and timely reporting at the local level	Number of suspected outbreaks of epidemic-prone diseases notified to the province within 2 days of surpassing the epidemic threshold	Number of suspected outbreaks of epidemic-prone diseases in the district	Log of suspected outbreaks and rumors District analysis book or other routine analysis tool	80%
4 Proportion of priority diseases for which a current line graph ⁶ is available. ⁷	Measures the practice and capacity of the district health management team to analyze surveillance data	Number of selected diseases (at least malaria and meningococcal meningitis in districts at high risk for meningitis) for which a line graph is available and current	Total number of selected diseases with a line graph (at least malaria and meningococcal meningitis if district is at high risk for meningitis)	Indicator monitoring chart District analysis book	80%
5 Proportion of health facilities that have current trend analysis (line graphs) for selected priority	Measures the practice and capacity of the health facility team to analyze	Number of health facilities that have current trend analyses for selected priority diseases	Total number of health facilities in the district	Supervisory report Health facility data analysis tools	80%

⁵ A chart for monitoring district indicator performance is in Annex 5.

⁶ The national IDSR team should define the list of diseases for which a line graph should be kept at the health facility level. AFRO recommends that at a minimum, health facilities maintain current line graphs for 1) weekly trend analysis of cerebrospinal meningitis, particularly in the meningitis belt countries, 2) monthly malaria inpatient cases and deaths in children under 5 years of age and 3) trends for malaria in children under 5 years of age.

⁷ “Current” in this indicators means that the line graph display should reflect data within the past three months from the day of the assessment.

diseases	surveillance data				
6 Proportion of reports of investigated outbreaks that include analyzed case-based data	Measures availability of additional variables for further analysis	Number of outbreak investigation reports that include case-based data	Total number of outbreak investigation reports conducted in the district	Investigation report Epidemic curve Map Person analysis table Line lists or case-based reporting forms	80%
7 Proportion of investigated outbreaks with laboratory results	Measures capacity of laboratory to confirm diagnosis and involvement of laboratory in surveillance activities	Number of investigated outbreaks with laboratory results in a given time period	Total number of investigated outbreaks that occurred in a given time period	Log of suspected outbreaks and rumours Laboratory reports Outbreak investigation reports	80%
8 Proportion of confirmed outbreaks with a nationally recommended public health response	Measures capacity of the district to respond to outbreaks	Number of confirmed outbreaks with a nationally recommended response	Number of confirmed outbreaks in the district	Log of suspected outbreaks and rumors Outbreak investigation reports Supervisory reports	80%
9 Case fatality rates for outbreaks of priority diseases	Measures quality of case management	Number of deaths from each of the outbreak diseases	Number of cases from the same outbreak due to that disease	Routine summary report Outbreak investigation report	Will vary; depends on disease
10 Attack rate for each outbreak of a priority disease	Helps to identify the population at risk and efficacy of the intervention	Number of new cases of an epidemic-prone disease that occurred during an outbreak	Number of population at risk during the outbreak	Demographic data about the district Outbreak investigation report with line lists or case-based forms	Will vary; depends on disease

ANNEX 8D

Core indicators for the provincial level

Indicator	Purpose	Numerator	Denominator	Source of information	Target
1 Proportion of monthly surveillance reports submitted from the district to the province on time in the last 3 months	Measures the practice of timely submission of surveillance data	Number of districts that submitted IDSR reports on time to the province	Total number of districts that report to the province	Monitoring chart Routine summary reports	80%
2 Proportion of cases of diseases targeted for elimination, eradication and any diseases selected for case-based surveillance reported with case-based forms or line lists.	Measures reporting of surveillance data with detailed information to use for further analysis	Number of diseases targeted for elimination, eradication, and any diseases selected for case-based surveillance reported with case-based forms or line list	Number of districts that submitted case-based surveillance reports on time to the province	Routine summary reports and case-based or line listing reports	80%
3 Proportion of suspected outbreaks of epidemic prone disease notified to the provincial level within 2 days of surpassing the alert threshold	Measures early detection and timely reporting of outbreaks	Number of suspected outbreaks of epidemic prone diseases notified to the province within 2 days of surpassing the alert threshold	Total number of suspected outbreaks of epidemic prone diseases in the province	Log of suspected outbreaks and rumors Routine summary reports	80%
4 Proportion of districts that maintain a current line graph ⁸ for selected priority diseases. ⁹	Measures the practice and capacity to analyze surveillance data	Number of districts for which a current line graph is available	Number of districts	Supervisory reports District analysis book	80%
5 Proportion of reports of investigated outbreaks that includes analyzed case-based data	Measures availability of additional variables for further analysis including possible risk factors involved	Number of district outbreak investigation reports that include epi curve, mapping, personal tables and case-based forms or line lists	Number of district outbreak investigation reports	Investigation reports Routine summary reports	80%

⁸ The national IDSR team should define the list of diseases for which a line graph should be kept at the health facility level. AFRO recommends that at a minimum, health facilities maintain current line graphs for 1) weekly trend analysis of cerebrospinal meningitis, particularly in the meningitis belt countries, 2) monthly malaria inpatient cases and deaths in children under 5 years of age and 3) trends of malaria in children under 5 years of age.

⁹ “Current” in this indicators means that the line graph display should reflect data within the past three months from the day of the assessment.

6 Proportion of investigated outbreaks with laboratory results	Measures capacity of the laboratory to confirm the diagnosis and involvement of laboratory in the surveillance activities	Number of investigated outbreaks with laboratory results	Number of investigated outbreaks in the province	Outbreak investigation reports Laboratory reports Routine summary reports Log of outbreaks and rumours	80%
7 Proportion of confirmed outbreaks with a nationally recommended public health response	Measures capacity of the province to respond to outbreaks	Number of confirmed outbreaks with a nationally recommended public health response	Number of confirmed outbreaks	Log of suspected outbreaks and rumors Outbreak investigation reports Supervisory visit reports	80%
8 Case fatality rate for each epidemic prone disease reported	Measures quality of case management	Number of deaths from each of the epidemic-prone diseases	Number of cases from the same epidemic-prone disease	Routine reports and outbreak investigation reports	Depend s on disease
9 Attack rate for each outbreak of a priority disease	Helps to identify the population at risk and efficacy of the intervention	Number of new cases of an epidemic-prone disease that occurred during an outbreak	Number of population at risk during the outbreak	Demographic data about the province Outbreak investigation report with line lists or case-based forms	Will vary; depend s on disease

ANNEX 8E

Core indicators for the national level

Indicator	Purpose	Numerator	Denominator	Source of information	Target
1 Proportion of monthly IDSR reports submitted from the province to the national level on time in the last 3 months	Measures the practice of timely submission of surveillance data	Number of provinces that submitted IDSR reports on time to the national level	Total number of provinces that report to the national level	Monitoring chart Routine summary reports	80%
2 Proportion of health facilities submitting surveillance reports on time to the district	Measures practice of timely submission of surveillance data from health facilities to district	Number of health facilities submitting reports on time to the districts	Number of districts	Summary reporting forms	80%
3 Proportion of cases of diseases targeted for elimination, eradication and any diseases selected for case-based surveillance reported with case-based forms or line lists.	Measures reporting of surveillance data with detailed information to use for further analysis	Number of diseases targeted for elimination, eradication, and any diseases selected for case-based surveillance reported with case-based forms or line list	Number of diseases targeted for elimination, eradication and any other disease selected for case-based surveillance	Routine summary reports and case-based or line listing reports	80%
4 Proportion of suspected outbreaks of epidemic prone disease notified to the national level within 2 days of surpassing the alert threshold	Measures early detection and timely reporting of outbreaks	Number of suspected outbreaks of epidemic prone diseases notified to the national level within 2 days of surpassing the alert threshold	Total number of suspected outbreaks of epidemic prone diseases	Log of suspected outbreaks and rumors Routine summary reports	80%
5 Proportion of districts in which a current line graph ¹⁰ is available ¹¹ for selected priority diseases	Measures the practice and capacity to analyze surveillance data	Number of priority diseases for which a current line graph is available in the districts.	Number of districts	Supervisory reports District analysis book	80%

¹⁰ The national IDSR team should define the list of diseases for which a line graph should be kept at the health facility level. AFRO recommends that at a minimum, health facilities maintain current line graphs for 1) weekly trend analysis of cerebrospinal meningitis, particularly in the meningitis belt countries, 2) monthly malaria inpatient cases and deaths in children under 5 years of age and 3) trend analysis of malaria in children under 5 years of age.

¹¹ “Current” in this indicators means that the line graph display should reflect data within the past three months from the day of the assessment.

6 Proportion of reports of investigated outbreaks that includes analyzed case-based data	Measures availability of additional variables for further analysis including possible risk factors involved	Number of outbreak investigation reports that include epi curve, mapping, personal tables and case-based forms or line lists	Number of outbreaks investigation reports	Investigation reports Routine summary reports	80%
7 Proportion of investigated outbreaks with laboratory results	Measures capacity of the laboratory to confirm the diagnosis and involvement of laboratory in the surveillance activities	Number of investigated outbreaks with laboratory results	Number of investigated outbreaks	Outbreak investigation reports Laboratory reports Routine summary reports Log of outbreaks and rumours	80%
8 Proportion of confirmed outbreaks with a nationally recommended public health response	Measures capacity of the province to respond to outbreaks	Number of confirmed outbreaks with a nationally recommended public health response	Number of confirmed outbreaks	Log of suspected outbreaks and rumors Outbreak investigation reports Supervisory visit reports	80%
9 Case fatality rate for each epidemic prone disease reported	Measures quality of case management	Number of deaths from each of the epidemic-prone diseases	Number of cases from the same epidemic-prone disease	Routine reports and outbreak investigation reports	Depends on disease
10 Attack rate for each outbreak of a priority disease	Helps to identify the population at risk and efficacy of the intervention	Number of new cases of an epidemic-prone disease that occurred during an outbreak	Number of population at risk during the outbreak	Demographic data about the district Outbreak investigation report with line lists or case-based forms	Will vary; depends on disease
11 The number of epidemics detected at the national level and that were missed by the district level	Checks the capacity of the entire health system to detect epidemics and shows that the national level is checking whether districts are observing trends	Number of epidemics detected by the regional or national level from analyzing district specific data	Total number of epidemics reported by the districts	District summary reporting forms District analysis book Supervisory reports Standard surveillance reports	Zero
12 Proportion of districts	Measures if districts are	Number of district labs that	Total number of district labs	National log book of reports received	

that report laboratory data for diseases under surveillance	collecting and reporting lab data to higher level	submitted monthly data to higher level			
13 Proportion of district laboratories that received at least one supervisory visit with written feedback by provincial/national level	Measures the support supervision district labs receive to help to solve problems	Number of district laboratories that received at least one supervision activity	Total number of district laboratories	Reports of the District Lab Focal Person -this may require field visits	
14 Proportion of provincial laboratories reporting analysed lab data to the national lab	Measures how well provincial levels analyse district laboratory data	Number of provincial laboratories analysing and reporting to NPHL monthly	Total number of provincial laboratories	NPHL	

ANNEX 8F Monitoring chart for use of indicators at district, provincial or national level

The *district health office* should summarize the surveillance data received from all health facilities in the catchment area, and submit the compiled report to the province or national level as appropriate. The submission of the report should not be delayed until reports from all health facilities are received. Submit all reports received on time. Late reports may be submitted when they arrive. Follow up with health facilities who did not report or who consistently provide late reports.

Help the health facility to solve any problems that prevent them from submitting their summary reports on time. Provide feedback to health facilities about the indicator results on a regular basis. Feedback is a positive tool for motivating health staff to provide information on time and contribute to the national system.

The *provincial health department* should compile the surveillance data received from all districts in the province and submit the report to the national level. Submission of the report should not be delayed until the last report is collected. The province should compile and submit the available reports on time. The late reports may be sent separately when they are received.

The *national level* should compile the surveillance data received from all the provinces (or regions). The national level should look for epidemics that were not identified by the districts. Follow up with areas where reporting continues to be unreliable or does not happen at all. Support the provinces in providing assistance to the districts when they evaluate the measurements and take action to improve the situation. Provide feedback to each of the levels about the national, provincial, district and health facility levels.

Use a monitoring chart such as the one on the next page to monitor performance of the indicators at your level. Share these results with the staff in your catchment level. Acknowledge successes and help health staff to maintain the positive progress. When problems occur, talk together about what is causing the problem and how it can be solved. Seek assistance of the next level as needed for obtaining additional help or resources.

Monitoring chart for indicator results at national, provincial or district level

District: _____ Region/Province: _____ Year : _____

Note: Please compute the actual percentage for each cell

Indicator	Indicator results as a percentage												
	Jan.	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Proportion of health facilities submitting surveillance reports on time to the district													
Proportion of suspected outbreaks of epidemic prone diseases notified to the next higher level within 2 days of surpassing the alert threshold													
Proportion of cases of diseases targeted for elimination, eradication and any other diseases selected for case-based surveillance which were reported to the district using case-based or line-listing forms													
Proportion of reports of investigated outbreaks that included analyzed case-based data.													
Proportion of districts that have current trend analysis (line graphs) for selected priority diseases.													
Proportion of health facilities that have current trend analysis (line graphs) for selected priority diseases													
Proportion of outbreaks with laboratory results													
Proportion of confirmed outbreaks with recommended response													
Case fatality rate for each epidemic-prone disease (priority disease) reported													
Attack rate for each epidemic-prone disease reported													
(for national level) The number of epidemics detected at the national level and that were missed by the district level													
Have you calculated the indicators this month?													

If YES, have you used the results to take action correct any problems?													
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ANNEX 8G

Checklist for supervising surveillance and response activities at the health facility

Health Facility: _____ Date of Supervisory Visit: _____

ACTIVITY	SUPERVISORY QUESTION	ANSWER	COMMENT (What Caused Problem)
Data collection to identify Suspected Cases within health facilities	1. How often do you collect information from the community about reports of suspected cases or deaths due to a priority disease or condition?	_____	
Register cases	1. Are diagnoses of cases of priority diseases recorded in the clinic register according to the standard case definition?	Yes No	
Report	1. Do health staff use a standard case definition to report the suspected cases and outbreaks? 2. Do you record information about immediately notifiable diseases on a case form or line list?	Yes No Yes No	
Analyze and Interpret	1. Do you plot the numbers of cases and deaths for each priority disease on a graph? (Ask to see the health facility's analysis book. Look to see if the trend lines are up-to date.) 2. Do you plot the distribution of cases on a map?	Yes No Yes No	
Investigate and Confirm Reported Cases and Outbreaks	1. If an epidemic-prone disease was suspected, was it reported immediately to the district office? 2. For the cases of priority diseases needing laboratory tests seen since the last supervisory visit, how many had laboratory results? 3. Are appropriate supplies available or set aside for collecting laboratory specimens during an urgent situation and show me the supply?	Yes No Number of results obtained: _____ Number of expected cases seen: _____ Yes No	

ACTIVITY	SUPERVISORY QUESTION	ANSWER	COMMENT (What Caused Problem)
Respond	1. Are appropriate supplies available for responding to a confirmed case or outbreak (<i>for example, immunization supplies and vaccine, ORS, antibiotics, and so on</i>)? 2. Please show me the supplies for carrying out a recommended response. 3. Who is the outbreak coordinator for this facility? 4. How often do you provide information and training in outbreak response to the staff of this facility?	Yes No Yes No Name: _____ Designation: _____ Training is done _____	
Provide Feedback	1. How often do you report information to the community? 2. Do you receive the latest bulletin from the (<i>central, subnational</i>) level?	Report it _____	
Evaluate and Improve the System	1. Were the last 3 routine monthly reports sent to the district office? 2. Were the last 3 routine monthly reports sent on time?	Yes No Yes No	
Epidemic Preparedness	1. What precautions do health staff (including laboratory staff) take routinely with all patients regardless of the patients' infection status? 2. How do you estimate the number of supplies to set aside for use during an emergency situation?	Minimum level of standard precautions: _____ How supplies are estimated: _____	