Jhpiego Event-Based Surveillance technical Assistance to Nigeria CDC

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Outline

• Introduction
• Definition
• Surveillance cycle
• IDSR/ IBS & EBS
• Event-based surveillance
• NCDC’s EBS Phases
• EBS Contributions at NCDC
NCDC Event based Surveillance TA Support to NCDC

Scope:
Strengthen NCDC event-based surveillance by providing technical assistance in human resource support in surveillance activities associated with EBS systems and associated alert and response operations (ARO) at the Nigeria CDC.

Design:
- Strengthen national and subnational level communication on daily EBS routine activities to boast early warning, signal verification and reporting.
- Improve early/timely outbreak response in communities that are epidemic prone and the general public.

Period of Performance:
5-year COAG effective September 2020 to six states in West Africa. With funding for CDC in Nigeria for 1 year – subject to renewal.

Funding: Awarded by US CDC
Definitions

Public Health Surveillance
The continuous, ongoing systematic identification, collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice.

GOAL: Data for Action

Epidemic Intelligence (EI)
The systematic collection, analysis and communication of any information to detect, verify, assess, and investigate events and health risks with an early warning objective.

Early Warning Alert and Response System (EWARS)
An organized mechanism to detect and respond rapidly to acute public health events of any origin, with a focus on country-specific needs and objectives. Both indicator-based and event-based surveillance components serve the early warning and response (EWARS) function of the public health

Integrated Disease surveillance and response
Integrated Disease Surveillance and Response (IDSR) is a strategy adopted by countries in the WHO African Region for implementing comprehensive public health surveillance and response systems for priority diseases, conditions and events at all levels of health systems. Successful implementation will require a well-trained, competent and dedicated workforce.
Definitions

Signal
Data and/or information considered by the Early Warning and Response (EWAR) system as representing a potential acute risk to human health.

Event
When a signal has been verified, a signal becomes an “event.”

Event based surveillance
Event-based surveillance (EBS) is defined as the organized collection, monitoring, assessment and interpretation of mainly unstructured ad hoc information regarding health events or risks, which may represent an acute risk to health.

Indicator Based Surveillance
Is a more traditional way of reporting diseases to public health officials. Indicator-based surveillance involves reports of specific diseases from health care providers to public health officials routinely. Such information may be described as structured information because the information obtained is standardized.
Generic surveillance cycle

- Identify
- Evaluate
- Prepare/Respond
- Communicate
- Verify/Interpret
- Assess
Public Health Surveillance Approach/IDSR

To ensure robust early warning and prompt response, the IDSR data collection and analysis system relies on two main channels of information or signal generation:

• IBS and EBS are Back bone to IDSR Strategy

• Both are components of Early Warning Alert and Response System (EWARS) and Epidemic Intelligence incorporated in the IDSR strategy
IBS & EBS contribute to epidemic intelligence

**Indicator-based surveillance (IBS)**
- Routine collection of data on priority diseases or syndromes according to established case definitions
- Most information from health facilities
- Health care facility based
- Weekly, monthly reporting

**Event-based surveillance (EBS)**
- Organized collection, assessment, and interpretation of mainly unstructured information on health events or risks
- Information from multiple sources (official, unofficial, informal)
- Immediate reporting

**Importance of EBS**
- Early Detection of Outbreak
- Reduction in Transmission of Diseases
- Enhances Prompt Response
- Reduction in Morbidity and Mortality
- To increase early suspicion of potential threats
- Involvement of Community in Outbreak detection
- Building of Trust in Agency by the community
PROCESS: Epidemic intelligence (EI) within EWAR

IBS data
- Detection
- Triage
- Data analysis
- Data interpretation

EBS Information
- Detection
- Triage
- Filtering
- Selection

Signal
- Verification
- Event
- Risk Assessment
- Alert
- Communication

Tatafo & EIOS
Bio-surveillance information

Consider the information sources for disease detection

Unofficial
- Connect center
- Bio-surveillance information systems
- Surveillance networks

Official
- Information on acute public health events
- Official websites

Social and online media

SMS & WhatsApp
Publicly available number dedicated to receiving messages

Epidemic Intelligence processes
Information flow
Inputs and output

ACTIONS
- Implementation of mitigation/control measures
- Notification to IHR (as required)
- Information
- Etc.
### Detection

**EBS/early warning vs public health/risk communication**

<table>
<thead>
<tr>
<th>Early Warning</th>
<th>Public Health/Risk Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clusters of an unknown disease</td>
<td>• Growing public health sentiment or discord</td>
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<td>• New public health laws or regulations passed</td>
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<td>• Drug/vaccine developments</td>
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<td>• New public health/ministry of health leadership</td>
</tr>
<tr>
<td>• Radio nuclear releases</td>
<td>• Chronic or noninfectious disease reports</td>
</tr>
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<td></td>
<td>• Reports on occupational health</td>
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</tbody>
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- Reports on occupational health
- New Motor vehicle or other travel related safety measures
PROCESS: Triage and Filtering

**Conduct triaging by asking the following questions**

1. Is the reported information relevant to early warning? (i.e., could this alert be a genuine public health event?)
2. Was this alert previously reported? (i.e., is this signal a duplicate?)

If the report is pertinent and is not a duplicate, then alert must be verified.

**Filtering of EBS raw inputs**

1. **Identifying and removing duplicates** (the same event reported by the same source)
2. **Identifying and discarding information not relevant to EWAR** (information that matches the criteria for public health events but is irrelevant for early warning, such as a generic review of a disease)

Filtering: The process of screening out duplicates and information which is not relevant for EWAR

**Actions**

- Implementation of mitigation/control measures
- Notification to IHR (as required)
- Information
- Etc.

**Actions**

- Implementation of mitigation/control measures
- Notification to IHR (as required)
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- Etc.
PROCESS: Selection

The sorting out of information according to national priority criteria

Selecting information that is pertinent/ relevant for early warning (depends upon objectives/mission of the EBS Unit; human-driven)

EWAR surveillance objectives
- Diseases (e.g. measles)
- Syndromes (e.g. hemorrhagic fevers)
- Hazards (e.g. contamination of drinking water source)
- Unexpected/unusual events (e.g. unexplained mortality)

An alert is any new signal
- of public health relevance
- occurring in any part of Nigeria or externally
- with potential of spread into Nigeria
- reported to or identified by the EBS team

The process of selection – The national context of priority public health events for EBS
PROCESS: Signal and Verification

Key steps in verification process

1. First consider the information source (official or unofficial)
2. Search for and collect additional corroborating information if possible
3. Actively cross-check the validity of the information using reliable sources, with input from SMEs
4. Begin to characterize the potential event, considering spread, severity and public health impact

Surveillance Dashboard

IBS data
- Detection
- Triage
- Data analysis
- Data interpretation

EBS Information
- Detection
- Triage
- Filtering
- Selection

Actions
- Implementation of mitigation/control measures
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- Etc.
Verification of signals

**Ministry’s of Health**
- National level epidemiology or laboratory units
- Local and intermediate-level health units
- Healthcare facilities which may conduct surveillance

**Other government entities**
- Other Ministries (Ministry of Ag, Defense, etc) STATE & LGA EPID TEAM & HF, informants
- National Public Health Institutes
- National Reference Laboratories or other lab networks

**Others**
- NGOs operating in the area and partners (Red Cross, Samaritans Purse, etc)
- United Nations Organizations
- Subject Matter Experts (SMEs) of the respective diseases/syndrome reported, influencers
PROCESS: Preliminary risk Assessment of the Event

**IBS data**
- Detection
- Triage
- Data analysis
- Data interpretation

**EBS Information**
- Detection
- Triage
- Filtering
- Selection

**Signal**
- Verification
- Event
- Risk Assessment
- Alert
- Communication

**Actions**
- Implementation of mitigation/control measures
- Notification to IHR (as required)
- Information
- Etc.

**Date of onset/first report**

**Geographical location & spread & transmission**

**Number of persons/animals affected**

**Morbidity & hospitalization**

**Investigation done & symptoms**

**Case Fatality**

**SITAware**
Platform for documenting and managing signals & events
PROCESS: Notification & Communication

**IBS data**
- Detection
- Triage
- Data analysis
- Data interpretation

**EBS Information**
- Detection
- Triage
- Filtering
- Selection

**Signal**
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- Event
- Risk Assessment
- Alert

**Actions**
- Implementation of mitigation/control measures
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- Etc.

**Response**

**Epidemic Intelligence**
- Inputs and output

**Public Health Intelligence**
- Focal Person

**IHR Focal Person**

**EBS Team, Relevant Surveillance**
- Focal persons, Management

**Relevant MDAs/SMOH**

**Laboratory**

**Partners**

**TWGs**
NCDC’s EBS Phases

- Identify
- Verify
- Preliminary risk assessment
- Notify & communicate
- Monitor

Events of Interest:
- Known/unknown cause of deaths in humans and animals
- Spread of known/unknown illness
- Mass gatherings
- Diseases targeted for elimination
- Environmental hazards

Sources:
- Channels: TV, Websites, Radio, Newspapers, Search engines, Calls, Blogs, Social media
- Who: Health Worker, General public, Journalists

Events Flow:
- Event Identified
- Verification & Validation
- Event Established
- Public health significance?
- Risk Assessment
- Risk Identified
- No Risk
- Determine action(s) and notify responsible persons, units, departments, others
- Track action(s)
- Completed action(s)
- Reports/Feedback
Onboarding / Project Objectives

- To strengthen NCDC event-based surveillance by providing technical assistance through embedded human resource on surveillance activities associated with EBS systems and associated alert and response operations (ARO).
- Improve early/timely outbreak response in communities
- Strengthen national and subnational level communication to boost early warning, signal verification and signal reporting.

Duration of project & Funder:
The project is fully funded by the U.S. Center for Disease Control

Implementing Partner:
Jhpiego Global & Nigeria Office

Supporting Partner:
Nigeria CDC
Contributions to NCDC

- SIGNAL MONITORING
- SIGNAL ESCALATION
- SIGNAL VERIFICATION AND REPORTING
- COORDINATION AND COMMUNICATION
- SIGNAL DOCUMENTATION
- OTHER COMPLETED TASK
- TECHNICAL ASSISTANCE
<table>
<thead>
<tr>
<th>Disease</th>
<th>Incidents Created</th>
<th>Updates Documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Fever</td>
<td>25</td>
<td></td>
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<tr>
<td>Lassa Fever</td>
<td>40</td>
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<tr>
<td>Monkeypox</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Cholera</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td>28</td>
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</tr>
<tr>
<td>Whooping Cough</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COVID-19</td>
<td>36 +1</td>
<td></td>
</tr>
<tr>
<td>Unknown Death</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
Signals Escalated and Reported Feedback

![Graphs showing escalated signals from September - February 2020 and March - October 2021.](https://example.com/graphs)

- Escalated signals from September - February 2020
- Escalated signal investigation March - October 2021

**Cummulative showing Number of escalated signals March - October**

- Pending investigation: 148
- Ongoing investigation: 29
- Investigation done: 120
- Discarded investigation: 16
- Unclassified: 0
THANK YOU