## Module 3: Health Facility Event Based Surveillance

## Introduction

This module explains the general concept of Health Facility Event Based Surveillance (HEBS).

The module has five sessions which are:
**Session** 1. Introduction to HEBS
**Session** 2. Source of signal at HEBS
**Session** 3. Steps for conducting HEBS
**Session** 4. Stakeholders' roles and responsibilities
**Session** 5. Flow of information for HEBs

## Learning Objectives

By the end of this module you should be able to understand:

- Define HEBS and key terminologies used in HEBs
- Explain what health facility event-based surveillance is, why it is important, and how it can be implemented
- List examples of alerts for HEBS
- Understand the process and information flow of HEBS
- Describe the roles and responsibilities of the stakeholders

## Definition of Terms

- Signal (also known as Alerts); Any information or patterns of disease considered by the Early Warning and Response system as representing potential acute risk to human health, such as an outbreak. It can be unofficial information about a disease, condition, or event of public health importance, which may be true or invented
- Emerging public health threats- Refers to the new infectious disease and other public health event of the public health concerns. It might be caused by newly identified pathogen, which has emerged and whose the incidence in human has increased and is threatening to increase in the near future (US CDC)
- Re-emerging public health threats- refers to old disease or public health event that was previously controlled but once has risen to be significant public health problem.

**This module will take 20-30 minutes to complete**

## Session 1: Introduction to HEBS

This session will cover; definition of HEBS, aim of the HEBS and example of signals at facility level.

## Description of Contents:

Event-based surveillance in health facilities (HEBS) aims to improve early detection and reporting of signals within the health facility that may represent a public health risk, (such as a cluster of illnesses). This approach is not disease specific and doesn't make use of standard case definitions that are typically used in IBS in health facilities. EBS is highly sensitive and broad, hence allowing the detection of emerging or re-emerging public health threats by clinicians, nurses, and other relevant healthcare workers. Examples of signals at the health facility level include:

a) Illness of HCW after caring for a patient with similar illness
b) Increase of disease/condition cases based on the clinician's judgement or available data
c) Any case with unexplained/unusual clinical manifestation/death of a known and unknown disease.
d) Any case that fails to respond to a known therapy.
e) Any person with a cough for 2 weeks and more.
f) any abnormal pattern laboratory result such as increased in laboratory test of certain type or detection of new pathogen

## Summary of session:

- Event-based surveillance in health facilities improve early detection and reporting of signals within the health facility.

## Quiz:

1. HEBS approach is not disease specific and doesn't make use of standard case definitions that are typically used in IBS in health facilities (TRUE/FALSE).
2. Illness of HCW after caring for a patient with similar illness is signals (TRUE/FALSE).

## Session 2: Sources of Signal at HEBS

This session will cover; the source of signals at HEBS

## Description of Contents:

Healthcare workers should participate in both IBS and EBS since signals can come from both surveillance systems. General examples of signal sources at health facility level include:

a) Healthcare workers from the following health facility departments such as wards, pharmacy, laboratory, Outpatient Department (OPD), public health and others

b) Data gathered over time during routine sentinel surveillance (IBS) can provide alerts or benchmarks against which to compare the early course of an event

## Summary of session

The source of signals at HEBS are health care workers and routine data gathered over time at health facility

## Quiz

1. Signals cannot come from both surveillance systems IBS and EBS. (TRUE/FALSE).

## Session 3: Steps for conducting HEBS

This session will cover; steps for conducting HEBS. These steps will guide the learner to detect, triage and verify signal.

## Description of Content:

Information is initially captured as a signal at the healthcare facility as reported by healthcare workers or through trends in data collected at the healthcare facility Not all signals may necessarily become real events, as such, they all need to be triaged, verified and risk assessed before a response is initiate

## STEP 1: Signal Detection

Detecting a signal means identifying or suspecting the occurrence of one of the pre-determined signals designated by national public health authorities. At health facilities, signals are most likely to be detected by HCWs. Key steps for detection are as follows:

1. The Disease Surveillance Focal Person at the health facility sensitises HCWs on health facility EBS signals and how to report them. In health facilities without Disease Surveillance Focal Person, the health facility officer in charge or any other assigned health care worker could play this role.

2. HCWs detect signals according to the pre-determined list of signals. This may be done by taking note of the number of cases, prescriptions,

lab requests, data summaries, reports from caretakers and/or patients. When the signals are detected, the HCW records in a notebook detailing important pieces of information concerning the signal such as time, location, and source.

3. Once recorded, the HCW reports the signals immediately to the health facility Disease Surveillance Focal Person or health facility in-charge. The reporting mechanisms are diverse and include phone calls, SMS, in-person (verbal), electronic platforms, mobile applications, paper-based forms, social media and others.

4. The Disease Surveillance focal person records the signal received and reports to the health facility officer in-charge and Disease Surveillance Focal Person at the District level for their information. The Disease Surveillance focal person at the district then proceeds to triage.

## STEP 2: Triaging

Once a signal is reported, the Disease Surveillance Focal Person or health facility in-charge takes further steps to triage the signal. Throughout this process, other HCW may be engaged providing relevant information. Key steps for triaging involve:

1. Establish that the information being reported is pertinent to EWAR.

2. Confirm that the signal conforms to the pre-determined signals.

3. Confirm that the same signal has not been reported from the same or different sources (duplicate reports)

4. Register signals that are not duplicates and correspond to one of the pre-defined signals and proceed to verification.

5. Triage can be done by the disease surveillance focal point or the person in charge of the facility.

## STEP 3: Verification

The health facility's disease surveillance focal person or the health facility in-charge will verify all triaged signals that meet the signal definition of the pre-defined signal list. Verification can be conducted by:

- Asking other people about the reported signal and visiting the person or health facility from where the signal has been reported.

- In case of inability to access location or event site, a phone call could be made to the hospital officer in charge or Health Facility Disease Surveillance Focal person who then verifies the signal to establish validity. The result of the verification is the confirmation that a signal is true or false.

- Once a signal is verified and confirmed as true, it becomes an event and must be recorded in the register (Annex 3) and reported to the Disease Surveillance Focal person at the district level/ relevant authorities for risk assessment. Feedback should also be provided to the HCWs who reported the signal.

**Note:** the process of verification and reporting should be completed within 24 hours.

## STEP 4: Risk Assessment

Risk Assessment is a systematic process for gathering, assessing, and documenting information to assign a level of risk of an event to human health. **This should take place within 48 hours of the detection of one or more signals.** It is conducted by the district and/or national levels depending on capacity, after receiving the report of an event.

## Summary of session:

- Steps for conducting HEBS are detect, triage and verify signal
- Health care worker is responsible to detect signal in health facility
- Triaging ensures the information is relevant to EWAR and avoiding duplication

## Quiz

1. Risk assessment should take place within 48 hours of the detection of one or more signals (TRUE/FALSE)
2. Arrange the following steps in ascending order; Detection, verification, risk assessment and triaging. (Detection, Triaging, Verification and Risk assessment)

3. All Alert may necessarily become real events, as such, they are no need to be triaged, verified and risk assessed before a response is initiated (TRUE/FALSE)

## Session 4: Stakeholders' roles and responsibilities

This session will cover; key stakeholders, their roles and responsibilities in implementing HEBS.

## Description of Content:

The success of HEBS is based on the early detection and immediate notification of signals; the key stakeholders and their respective roles within this HEBS workflow as shown in Table 4.

**Table 4: Roles and responsibilities of the health facility event-based surveillance (HEBS) workforce**

| Workforce | Primary roles | Supportive roles |
|---|---|---|
| Healthcare Workers | Use signals to identify possible public health threats in the health facility<br>Report to Disease Surveillance Focal Person at health facility/ Health Facility in-charge | Provide information needed<br>Participate in the sensitization meetings<br>Participate in the review meetings |
| Disease Surveillance Focal Person at health facility/ Health facility officer in-charge | Adopt and mobilise HCW to positive behaviour change for health<br>Records signal received from the HCW<br>Reports signal to Disease Surveillance Focal Person at District level for their information<br>Conducts triage of the signals<br>Verifies the signal<br>Tracing the source of an event<br>Records and reports the event to a higher level (e.g., District, Sub- County, and National).<br>Provide feedback to the reporting party | Provide additional information for triage and verification<br>Provide additional information to the Risk Assessment team<br>Mobilise community members to action<br>Referral of community members and sick animals<br>Supports district/national team during Risk Assessment<br>Supports district/national team during response |
| District Disease Surveillance Focal Person | Train and supervise Disease Surveillance Focal Person and/or In-charge at the health facility<br>Conduct initial risk assessment<br>Data analysis and use<br>Provide feedback to the Disease Surveillance Focal Person and/or In-charge at the health facility<br>Submit reports to the regional / national levels | Support Disease Surveillance Focal person and/or In-charge at health facility in verification<br>Mobilisation of resources for HEBS<br>Support evaluation of HEBS |

| | | |
|---|---|---|
| | Escalate HEBS activities to the regional / national levels for support<br>Monitoring HEBS activities | Coordinate stakeholders |
| Regional / National level Disease Surveillance Focal Person | Lead the training of the HEBS workforce<br>Supervision the HEBS activities<br>Monitoring and evaluation<br>Mobilisation of resources for HEBS<br>Provide feedback<br>Coordinate stakeholders<br>Develop policy and guidelines for HEBS | Support risk assessment and response process<br>Supervision of lower levels |

## Summary of session:

Health care workers at all levels have great roles and responsibilities in implanting HEBS.

## Quiz

1. Select primary roles of health care workers in HEBS
    a. Mobilize resources for HEBS
    b. Use signals to identify possible public health threats in the health facility
    c. Conduct initial risk assessment
    d. Report to Disease Surveillance Focal Person at health facility/ Health Facility in-charge

2. Disease Surveillance Focal Person at health facility conducts triage of the signals (TRUE/FALSE)
    .

## Session 5: Flow of information for HEBs

This session will cover; how the information flows from healthcare workers at health facility to the national level. It's also explain the communication channel at all levels.

## Description of Contents:

The flow of information for notification and feedback on HEBS is illustrated in Figure 5 Flow of information in HEBs. Signals are detected by HCW in health facilities then notified immediately to Disease Surveillance Focal Person or Health Facility in-charge. The reporting follows the existing surveillance reporting structure.

Regular feedback to information providers regarding the signals and events reported is imperative to sustain motivation for reporting by HCW and focal

points. Feedback is one of the core functions of a surveillance system and can help to trigger important actions against the reported signals/events at all levels. When practised over time, it will also help to enhance the balancing between sensitivity and specificity of the surveillance system. For instance, feedback can help to revise the signal definition to reduce system overload. Low specificity would result in the surveillance system documenting many "false" outbreaks and spending a lot of resources and time for verification and investigation.

Feedback can be effected through different ways including supervisory visits, meetings, active calls, short message texts and newsletters. It is important to continuously monitor and evaluate the quality and usefulness of feedback provided. It is important to highlight cross reporting at the different administrative levels between the different sectors (animal, environment, and human)

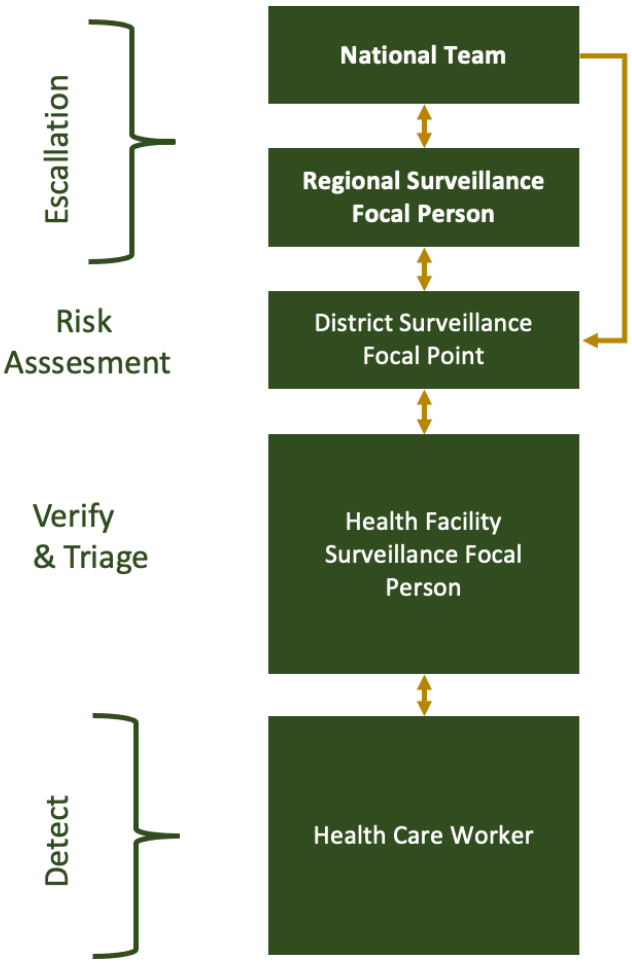


Figure 6 Flow of information in HEBs

## Summary of session:

- Providing regular feedback to signal detectors and reporters motivate and sustain signals notification.

## Quiz

1. Signals are detected by HCW in health facilities then notified within 48hrs to Disease Surveillance Focal Person or Health Facility in-charge. (TRUE/FALSE)
2. Feedback is one of the core functions of a surveillance system and can help to trigger important actions against the reported signals/events at all levels (TRUE/FALSE)
3. Feedback can be effected through different ways including supervisory visits, meetings, active calls, short message texts and newsletters (TRUE/FALSE)

## Pre and Post Knowledge Check Questions Health Facility EBS

1. Increase of disease/condition cases based on the clinician's judgement or available data is an example of signals at the health facility level **(**TRUE/FALSE)
2. Event-based surveillance in health facilities (HEBS) does not aim to improve early detection and reporting of signals within the health facility (TRUE/FALSE)
3. Select the correct examples of signals at the health facility level
    a. Any case with unexplained/unusual clinical manifestation of a known and unknown disease.
    b. Illness of HCW after caring for a patient with similar illness
    c. A patient who come to the hospital for wound dressing
    d. Any case that fails to respond to a known therapy.
4. HEBS approach is not disease specific and doesn't make use of standard case definitions that are typically used in IBS in health facilities (TRUE/FALSE)
5. General examples of signal sources at health facility level include the following expect
    a. Data gathered over time during routine sentinel surveillance (IBS) can provide alerts or benchmarks against which to compare the early course of an event
    b. Information/news from social media
    c. Healthcare workers from different departments such as wards, pharmacy, laboratory and Outpatient Department
6. Healthcare workers should not participate in both IBS and EBS (TRUE/FALSE)

7. Healthcare workers from the following health facility departments such as wards, pharmacy, laboratory, Outpatient Department (OPD) are example of signal sources at health facility (TRUE/FALSE)
8. The following are steps for conducting health facility event-based surveillance except
    a. Detection
    b. Triage
    c. Treatment
    d. Verification
9. Detecting a signal means identifying or suspecting the occurrence of one of the pre-determined signals designated by national public health authorities (TRUE/FALSE)
10. Select key steps for signal detection at health facility level
    a. The Disease Surveillance Focal Person at the health facility sensitises HCWs on health facility EBS signals and how to report them
    b. HCWs detect signals according to the pre-determined list of signals
    c. Register signals that are not duplicates and correspond to one of the pre-defined signals and proceed to verification.
    d. Once recorded, the HCW reports the signals immediately to the health facility Disease Surveillance Focal Person or health facility in-charge.
    e. The Disease Surveillance focal person records the signal received and reports to the health facility officer in-charge
11. Key steps for triaging involve establishing the information being reported is pertinent to EWAR (TRUE/FALSE)
12. The process of verification and reporting should not be completed within 24 hours (TRUE/FALSE)
13. The success of HEBS is based on the early detection and immediate notification of signals (TRUE/FALSE)
14. Select the correct key steps for triaging:
    a. Establish that the information being reported is pertinent to EWAR
    b. Confirm that the signal conforms to the pre-determined signals.
    c. Confirm that the same signal has not been reported from the same or different sources (duplicate reports)
    d. In case of inability to access location or event site, a phone call could be made to the hospital officer in charge
15. The health facility's disease surveillance focal person or the health facility in-charge will verify all triaged signals that meet the signal definition of the pre-defined signal list (TRUE/FALSE)
16. Detecting a signal means identifying and verifying the occurrence of one of the pre-determined signals designated by national public health authorities. (TRUE/FALSE)

17. The reporting mechanisms are diverse and include phone calls, SMS, in-person (verbal), electronic platforms, mobile applications, paper-based forms, social media and others (TRUE/FALSE)
18. Risk assessment is conducted as part of an investigation of an event (TRUE/FALSE)
19. Rearrange the flow of information in chronological order:- health workers ,district surveillance focal person, healthy facility surveillance focal person , national team, regional surveillance focal person (health workers, healthy facility surveillance focal person, district surveillance focal person, regional surveillance focal person, national team)
20. Signal verification should be conducted by (select true for the correct statement and false for incorrect statement)

    A] Asking other people about the reported signal and visiting the person or health facility from where the signal has been reported. (TRUE/FALSE)

    B] A phone call could be made to the hospital officer in charge or Health Facility Disease Surveillance Focal person (TRUE/FALSE)

    C] After verification, feedback should also be provided to the HCWs who reported the signal. (TRUE/FALSE)

    D) If the signal has been verified as an event, the next step is to report (TRUE/FALSE