3. One Health does not involve collaboration of multidisciplinary, and multisector approach that can address urgent, ongoing, or potential health threats at the human-animal-environment interface (True/False).

4. One Health works at the following levels (Select all that applies)

   a) Subnational
   b) National
   c) Global
   d) Regional levels
   e) All of the above
   f) None of the above

5. Climate change has not been linked to increased opportunities for viral spill-over from wildlife into humans (True/false)

6. Signals can be detected through a wide variety of sources and surveillance officers including animal, environmental and human health sectors. (True/False)

7. One Health approach is not needed in the development of a signal list (True/False)

8. Risk assessment requires a multisector and multidisciplinary team, especially for health events that negatively impact multiple populations and species. (True/False)

Module 2: Community Event-Based Surveillance

Introduction

Community Event-Based Surveillance (CEBS) implementation in community settings is essential for early detection, reporting, and response to emerging public health events.

This module has seven sessions:
Session 1: Overview of CEBS
Session 2: Importance of CEBS
Session 3: Sources of signals for CEBS
Session 4: Steps for conducting CEBS
Session 5: Flow of Information for CEBS
Session 6: Stakeholders' roles and responsibilities

The module will take minutes to complete.

Learning Objectives

This module will cover the basic knowledge of practising CEBS focusing on:

- Signal detection,
- Signal recording and
- Signal reporting.

Definition of Terms:

Community Event-Based Surveillance (CEBS): Is the systematic detection and reporting of events of public health significance within a community, by community members

Event-Based Surveillance (EBS): 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. Such information can come from diverse sectors and may include animal, environment and other sectors

Indicator-Based Surveillance (IBS): Defined by WHO as the systematic (regular) collection, monitoring, analysis, and interpretation of structured data, i.e., of indicators produced by a number of well-identified, mostly health-based, formal sources

Community health worker (CHW): These are public health workers who are close to and serve members of the community by helping them to adopt healthy behaviours**.**

Session 1: Overview of CEBS

This session will cover basic concept on the practices of CEBS. Community event-based surveillance (CEBS) is the systematic detection and reporting of events of public health significance within a community, by community members. Community health volunteers, the public, religious leaders, civil society members, teachers, and similar groups are engaged and trained to detect and immediately report unusual health events or health risks occurring in their communities.

CEBS activities and outcomes empower the community to identify public health risks they see and hear about and provide 'real-time' information to public health authorities. Community participation, engagement, and a reliable response network are key features of an effective implementation of EBS in the community.

Community signals should be broad (non-disease specific) simplified and free of scientific terminology to facilitate comprehension by community members. These signals should also be limited in number but broad enough to capture all public health risks in the community. Example of signals at community level are:

a) Two or more cases of people presenting with similar severe signs/symptoms from the same community, school, or workplace within one week. NB: Severe can be elaborated at the community-level as needing to seek medical care within one week.
b) A cluster of unexplained animal deaths within one week.
c) An illness with novel or rare symptoms (NB: Novel and rare can be explained as signs/symptoms that the community has not seen before)
d) Any person with fever or rash

Note: signals can be generated according to the list of pre-determined priority diseases, burden of diseases and other community factors. To simplify the reporting process, signals may be coded.

Session Summary

This session has covered the basic concept of CEBS as an essential for early detection, reporting, and response to emerging and re-emerging public health events.

Quiz:

For the following statement write if it is true or false:

1. CEBS is the systematic detection and reporting of events (True /False)
2. A signal from the community can be any person with fever and rashes (True /False)

Session 2: Importance of CEBS

This session will cover the importance of CEBS.

CEBS implementation in the community settings is essential for early detection, reporting, and response to emerging and re-emerging public health events (PHE). Indicator-based surveillance (IBS) systems generally collect surveillance data from healthcare sources and may miss other public health events or emerging outbreaks within the community, especially in areas where access to healthcare is low and/or where there is underutilization of formal health services.

CHW and other community members may collect information that tallies with pre-determined signals. These signals may be predictive of acute public health risks that need early detection, reporting and response.

Session Summary:
The session has covered the importance of CEBS which aims to complement IBS by capturing events of public health risk at community level.

QUIZ:
1. CEBS is important to compliment Indicator Base Surveillance (True or False)
2. CHWs and other community members may not collect information that tallies with pre-determined signals (True or False)

3. One person presenting with Malaria signs/symptoms from the community, school, or workplace within one week is an example of the signal (True or False)

Session 3: Sources of Signals for CEBS

Introduction: This session will cover sources of signals at community level.

Signals at the community level comes from diverse sources to avoid missing any signals arising from the different locations from the community. EBS signals at the community level may include but not limited to:

a) Community members
b) Livestock keepers
c) Community leaders
d) Political leaders
e) Traditional healers
f) Schools
g) Local markets
h) Drug shops
i) Faith-based congregations
j) Social media
k) Mass media

Internet social media and mass media have become important communication channels to report signals and disseminate disease risks and interventions; at the community level they can be used as additional sources for signal detection. This happens when community members, community leaders or

CHWs become aware of the relevant information disseminated/communicated/disclosed through these channels as information sharing platforms, which may be for non-public health purposes.

Session Summary: This session has covered the sources of signals at the community level to allow wide coverage for quick capturing of information.

Quiz:

1. Select the true answer:

a. The following are the sources of CEBS:
   a) Political leader
   b) Religious leader
   c) Traditional healer
   d) Health Facility Workers

2. WhatsApp, Instagram and Facebook have become important communication channels to report signals and disseminate disease risks and interventions (True or False).

Session 4: Steps for Conducting CEBS

Introduction: This session will cover the steps involved in conducting CEBS.

Information is initially captured as a signal by CHW and is reported to CHW focal person at the health facility (Figure 7). Not all signals may necessarily become real events, as such, they all need to be triaged, verified and risk assessed before a response is initiated.

STEP 1: Signal Detection, Recording, and Reporting

Detecting a signal means identifying the occurrence of one of the pre-determined signals designated by national public health authorities. At the community level, signals are most likely to be detected by CHWs, community residents, traditional leaders, and other key informants because of their engagements in community networks. The CHW supervisor sensitises the CHW, key informants, community members on community EBS signals detection.

Detected signals should be recorded immediately to the CHW supervisor, or designated focal point (e.g. the nearest health facility focal point or Health extension worker, etc.). CHW or community members **identify** the signals. When the signals are detected, CHW **records** in paper-based forms (community EBS signal register).

Once recorded in the community EBS signal register, CHW **reports** the signal immediately to their supervisor. Where the supervisor is not available, the CHW reports directly to the health facility or the community local structure. Reporting of the signals will be conducted in-person or by means of electronic devices (phone call, SMS, WhatsApp). If the signals are detected by the community members, the best practice would be to report to the CHW or other community structures.

In the availability of electronic EBS Application, the CHW's will register signals in paper-based form (Community EBS signal register) and then register the alert in the eEBS app where it will be reviewed for triaging at health facility level.

Health facility surveillance focal person will provide feedback to CHWs who will be responsible to provide feedback to the community structure responsible for signal detection.

Note: The CHW Supervisor proceeds to triage. In the absence of the CHW Supervisor, the Disease Surveillance Focal point or health facility in-charge proceeds to triage.

STEP 2: Triaging

Triage is the process of screening out the data and information that are relevant for early detection purposes. Because of its high sensitivity, CEBS is likely to generate signals from real events and non-events. Once a signal is reported to the local supervisor, the supervisor triages the information provided to establish that it conforms to one of the pre-defined signals. Key steps for triaging are

1. Confirm that the signal conforms to the pre-determined signals.
2. Confirm that the same signal has not been reported from the same or different sources (duplicate reports).
3. If any of the above statements are not true, discard the signal. If all of the above are true, report this to the next level (Disease Surveillance Focal Person at health facility or other relevant official) for verification (Annex 7).
4. Provide feedback to the reporting level.

STEP 3: Verification

Verification is the determination that a signal is a true representation of what is happening/ happened at the source. This involves cross-checking the information available with the source regarding the reported signal. When the signal is confirmed, it becomes an event that is reported to the higher level that will then plan a risk assessment or discard the information if not valid. Key steps for verification are:

A higher-level authority (Disease Surveillance Focal Person at the health facility or other relevant official) verifies the signal through a physical visit, telephone call or other means of communication with the source to establish if the information is true.

The surveillance focal point conducting the verification may want to conduct a second level triage by cross checking if the information reported meets one or more of the pre-defined signals.

1. If the signal is true, it becomes an event and if not true discard, and record accordingly in the relevant tool (Annex 3 and Annex 7).
2. Report events immediately to a higher level for risk assessment (e.g., District, Sub- County, National).
3. The line listing of all the diseases/events/alerts identified during the month should be completed by the CEBS focal person (Annex 8) and submitted monthly to the nearest health facility/sub-district surveillance focal person every month

Provide feedback to the CHW or community member who detected and reported the signal about the outcome of verification

Note: The result of the verification of signals should be recorded in a local register or signal logbook and the entire process **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. Risk assessment is

conducted as part of an investigation of an event. 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 the capacity, after receiving the report of an event.

Session Summary: The session has covered the key steps in implementation of CEBS to allow immediate reporting for effective response of PHE**.**

QUIZ:

Select the correct answer:

1. Recorded signals can be reported to the health facility through; -
   a. Phone call b. SMS
   b. WhatsApp
   c. Email
   d. A to D is correct.

Select if it is true or false:

1. It is important to report the death of animal and livestock as among a signal for CEBS (True or False)
2. CHW may proceeds to triage for some signals (True or False)

Session 5: Flow of Information for CEBS

Introduction: This session will cover the flow of information for EBS from the community level to the national level.

The flow of information for notification and feedback on CEBS is depicted in Figure 6. Signals are detected by a CHW who is among the community and then notifies the CHW Focal Person or Health Facility in-charge immediately. The reporting follows the existing surveillance reporting structure.

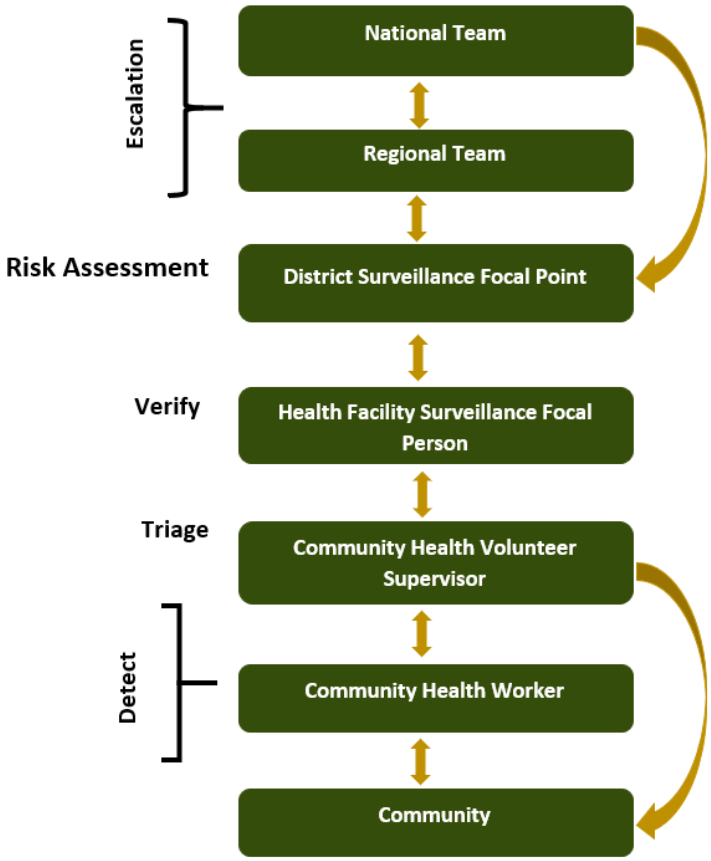

Figure 7: Flow of Information in CEBS

Session Summary: In this session you have covered the flow of information from the community to national level which allows effective reporting of information hence early response of all.

QUIZ:

Select if it is true of false:

1. Signals can be reported to CHW supervisors or direct to the higher levels (True or False)
2. It is not necessary to demand for the feedback after reporting of signals (True or False)

Select the most correct answer:

3. According the flow of information Risk Assessment may be conducted by
   a. District Surveillance Focal Point
   b. Community leader

c. Community member
d. Community health Volunteer

Session 6: Stakeholders' roles and responsibilities

Introduction: In this session will cover different stakeholders who plays important roles in the implementation of CEBS. The roles and responsibilities of the CEBS workforce are summarised in Table 5.

Table 5: Roles and responsibilities of the community event-based surveillance (CEBS) workforce

Workforce	Primary roles	Supportive roles
Community key informants (networks)	Make signals observations and report to the CHWs Adopt and mobilise community members to positive behaviour change for health	Provide information needed Participate in the review meetings
Community Health Workers	Use signals to identify possible public health threats in the community Report signals to CHW supervisor or Health Facility Build networks, with other community key informants include animal health workers, pharmacies, traditional healers, women groups, alternative medicine outlets, local admin leaders)	Provide additional information for verification Provide additional information to the Risk Assessment team Mobilise community

	Sensitise community and key informants on CEBS Give feedback to community members about reported signals and/or event	members to action Referral of community members and sick animals
Community Health Worker Supervisors	Ensure the appropriate use of signal definitions to identify priority public health events in the community Conduct triaging of signals Maintain a log of all reported signals in his/her community units Report events to Health facility Give feedback to CHWs on reported signals Supervises CHW	Support Health Facility during signal verification Work with District team to conduct rapid assessment of events Ensure sensitization of the community key informants (networks)
Health Facility Disease Surveillance Focal Person or health facility In-charge / Veterinary field	Ensure the appropriate triage of signals by CHWs supervisors Verifies triaged signals reported from CHWs supervisor Reports events to District Health Office Provides feedback to CHW supervisors Supervises CHW Supervisors	Supports district/national team during Risk Assessment Supports to CHW supervisors in providing feedback to the

extension officers	Data analysis and use	CHW/CAHWs Supports district/national team during response
District Surveillance Focal Person/ Veterinary Surveillance Focal Point	Train and supervise nurse in-charge at health facility / Veterinary field extension officers Conduct initial risk assessment Data analysis and use Provide feedback to the Nurse In-charge at health facility / Veterinary field extension officers Submit reports to the regional / national levels Escalate CEBS activities to the regional / national levels for support Monitoring CEBS activities	Support the Nurse In-charge at health facility / Veterinary field extension officers in verification Mobilisation of resources for CEBS Support evaluation of CEBS Coordinate stakeholders

Session Summary: This session has covered stakeholders' roles in the implementation of CEBS. All stakeholders need to work in a coordinated manner to ensure well-functioning of CEBS.

Quiz:
Match the workforce mentioned in SIDE A to the roles and responsibilities in side B

WORKFORCE (SIDE A)	**Answer**	**RESPONSIBILITY (SIDE B)**

1. Community key informants	C	A. Conduct initial risk assessment
2. District Surveillance Focal Person/ Veterinary Surveillance Focal Point	A	B. Supports district/national team during response
3. Community Health Workers	D	C. Make signals observations and report to the CHWs
4. Health Facility Disease Surveillance Focal Person or health facility In-charge / Veterinary field extension officers	B	D. Detect, record and report signal to CHW supervisor or Health Facility Focal Person

Case Study

On 6th of June 2019 at Dr. Fasso, the District Surveillance Officer, received a call from Khady Diallo, the local-level supervisor in the village of Butumba. Ms. Diallo told him that she was informed by a community health worker that five sick persons (2 children and 3 adults were taken to a traditional healer after they all fell ill with the same symptoms. Ms. Diallo informed Dr. Fasso that all five persons had attended a wedding ceremony at a neighbouring village the day before, ate from the same bowl with their hands, and drank water from the same cup. Around 8 hours later, all became ill with severe vomiting and abdominal pain. All of them attended the local clinic and received IV fluid therapy due to moderate dehydration. The two children were referred to the nearest hospital because their clinical condition did not improve. The youngest (4 years old) died 2 hours ago.

Questions: Complete the following questions using the triage, verification, and risk assessment tools.

1. Is this information reported by the health volunteer an signal? Why?
2. If this information is an signal, who should conduct the triage?
3. Describe how the triage should be conducted for this case scenario:
4. If the signal is not a duplicate and is relevant to EWAR, what is the next step?
5. Who should verify this signal?
6. How should signal verification be conducted?
7. If the signal has been verified as an event, what is the next step?
8. Once the event has been reported, what is the next step? Please, explain:
9. Who should conduct the initial risk assessment?
10. Describe how the initial risk assessment should be conducted:
11. What should be the decision of the risk assessment team after evaluating the event and information available?

Pre and Post Knowledge Check Questions (CEBS)

Write TRUE or FALSE for the following statements:

1. Traditionally, signals are to be reported to CHW Supervisor or health facility surveillance point but may be reported direct to the higher level (TRUE OR FALSE)
2. Sometimes CHW can ask feedback from health facility supervisor after reporting of signals (TRUE OR FALSE)
3. After a signal has been reported, Risk Assessment may be conducted by district Surveillance focal point (**TRUE** OR FALSE)
4. CHW may proceeds to triage for some detected signals (TRUE OR FALSE)
5. Deaths of animal and livestock due to unknown cause is not a signal to be reported (TRUE OR FALSE)
6. CEBS is a very important component that complement Indicator based surveillance (**TRUE** OR FALSE)
7. The role of CHW is to provide feedback to the community members about reported signals (TRUE OR FALSE)
8. Community event-based surveillance (CEBS) is the systematic detection and reporting of events of public health significance within a community (TRUE OF FALSE)
9. Community participation, engagement, and a reliable response network are key features of implementation of EBS in the community (TRUE OR FALSE)
10. Signals should also be limited in number but broad enough to capture all public health risks in the community (TRUE OR FALSE)
11. Signals detected should be reported immediately to the CHW supervisor, or designated focal point (TRUE OR FALSE)

Write correct answer for the following statements:

12. Detected and recorded signals can be reported to the health facility or surveillance focal point through:
    a) Phone call
    b) Short message service
    c) WhatsApp
    d) All of the above
    e) None of the above

13. Select all sources of signals for CEBS:
    a) Political leader
    b) Religious leader
    c) Traditional healer
    d) All of the above
    e) None of the above

14. The role of CHW is to report signals to the:
    a) CHW supervisor or Health facility
    b) District surveillance focal point
    c) Regional level
    d) All of the above
    e) None of the above

15. Who are among the following conducts initial risk Assessment
    a) District Surveillance Focal Point
    b) Community leaders
    c) Community members
    d) Community health workers

16. Select all steps needed to be conducted by CHW:
    a) Signal detection,
    b) Signal recording and
    c) Signal reporting
    d) Signal verification

Match the workforce mentioned in SIDE A to the roles and responsibilities in the SIDE B

WORKFORCE (SIDE A)	Answer	RESPONSIBILITY (SIDE B)
17. Community key informants	C	E. Conduct initial risk assessment
18. District Surveillance Focal Person/ Veterinary Surveillance Focal Point	A	F. Supports district/national team during response
19. Community Health Workers	D	G. Make signals observations and report to the CHWs
20. Health Facility Disease Surveillance Focal Person or health facility In-charge / Veterinary field extension officers	B	H. Detect, record and report signal to CHW supervisor or Health Facility Focal Person