EVENT-BASED SURVEILLANCE IN HEALTH FACILITIES AND COMMUNITIES AND INTERNET-EVENT BASED SURVEILLANCE

TRAINING CURRICULUM

U.S. Centers for Disease Control and Prevention

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► ACKNOWLEDGEMENTS

Community-based surveillance (CBS): CBS is the systematic detection and reporting of events of public health significance within a community, by community members. Community health volunteers (CHV), the public, religious leaders, civil society members, teachers, and similar groups are engaged and trained to detect and immediately report events or health risks occurring in their communities. CBS may also be known as community health surveillance or community event-based surveillance.

Community health volunteers (CHV): According to a WHO study group, CHVs may be members of the communities where they work, should be selected by the communities, are answerable to the communities for their activities, and should be supported by the health system but not necessarily a part of its organization. They may also be known as community health workers, among other terms.

Early Warning and Response (EWAR): The organized mechanism to detect as early as possible any abnormal occurrence or any divergence from the usual or normally observed frequency of phenomena.

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

Event: The International Health Regulations (IHR) define an event as "[…] a manifestation of disease or an occurrence that creates a potential for disease; […]". This includes events that are infectious, zoonotic, food safety, chemical, radiological or nuclear in origin and whether transmitted by persons, vectors, animals, goods/food, or through the environment.

Event-based surveillance (EBS): Defined by the World Health Organization (WHO) 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. Such information can come from diverse sectors and may include animal, environment and other sectors.

Health facility: Defined by WHO as any establishment that is engaged in direct on-site patient care.

Health facility event-based surveillance (HEBS):

EBS that is conducted in health facilities. Healthcare workers are involved as either the primary reporting sources, such as during patient consultations, or as secondary sources, reporting unusual health events or health risks picked up through patient consultations.

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.

Intermediate administrative level:

Intermediate administrative levels may be defined differently in different countries. For the purpose of this document, an intermediate level is the public health administrative level below the national level that is responsible for conducting preliminary investigations and implementing responses to reported public health events or suspected outbreaks in a given jurisdiction. The intermediate level may otherwise be referred to as districts or counties, among other terms.

Local administrative level:

Local administrative levels may be defined differently in different countries. For the purpose of this document, a local administrative level is the lowest administrative division within a country, directly above the community level.

One Health:

An approach to address a shared health threat at the human-animal-environment interface based on collaboration, communication, and coordination across all relevant sectors and disciplines, with the ultimate goal of achieving optimal health outcomes for both people and animals. A One Health approach applies to the local, regional, national, and global levels.

Outbreak:

A disease outbreak is the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season. An outbreak may occur in a restricted geographical area or may extend over several countries. It may last for a few days or weeks, or for several years. A single case of a communicable disease long absent from a population, or caused by an agent (e.g. bacterium or virus) not previously recognized in that community or area, or the emergence of a previously unknown disease, may also constitute an outbreak and should be reported and investigated.

Reporting:

The process by which health events and health risks are brought to the knowledge of the health authorities.

Response:

Any public health action triggered by the detection of a public health risk (e.g. monitoring of the event, information of the public, triggering field investigation and/or implementation of any control or mitigation measures). The nature of the response will have to be adapted according to the nature of the public health risk.

Risk:

The likelihood of an event resulting in negative consequences for public health.

Risk assessment:

A systematic process for gathering, assessing and documenting information to assign a level of risk to human health to an event. Risk assessment is conducted as part of an investigation of an event.

Risk characterization:

According to WHO, once a risk assessment team has carried out hazard, exposure, and context assessments of an event, a level of risk should be assigned. This process is called risk characterization.

Signals:

Patterns of disease or other information considered by the Early Warning and Response system as representing potential acute risk to human health, such as an outbreak. All signals may not become events and as such need to be triaged and verified before a response is initiated. Signals may consist of reports of cases or deaths (individual or aggregated), potential exposure of human beings to biological, chemical or radiological and nuclear hazards, or occurrence of natural or man-made disasters.

Surveillance:

The ongoing systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know.

Triage:

The process of screening out the data and information that are relevant for early detection purposes (i.e., the screening out of mild/irrelevant events from potential acute public health events, and the cleaning to eliminate duplicates and correct obvious mistakes).

Verification: In the context of the IHR (article 1): "[…] the provision of information by a State Party to WHO confirming the status of an event within the territory or territories of that State Party". Under the IHR, all State Parties are required to provide verification upon request by WHO within a limited time period. In the current document, verification is also the pro-active cross-checking of the validity (veracity) of the signals collected by Early Warning and Response, by contacting the original source, additional sources, or by performing field investigation. Verification requires that hoaxes, false rumors, and artefacts are eliminated from further consideration.

▶ EXECUTIVE SUMMARY

Event-based surveillance is the organized collection, monitoring, assessment, and interpretation of mainly unstructured ad hoc information regarding health events that may represent an acute public health risk. Event-based surveillance is an essential component of early warning within public health surveillance systems and can expedite the detection and notification of health events.

The *Training Curriculum for Event-Based Surveillance in Health Facilities and Communities and Internet-Event Based Surveillance* offers guidance and instructions to public health practitioners to facilitate training for event-based surveillance implementation in health facilities and communities within a country. This curriculum focuses on training relevant public health practitioners at the intermediate administrative level, in health facilities, and communities. Additionally, it provides trainers with guidance on how best to facilitate training and to mentor those who have been trained, as well as training evaluation tools, to ensure that the knowledge and skills required for event-based surveillance are transferred sustainably.

This curriculum has been organized in a modular fashion. A brief description of each module, accompanied by a schematic diagram, can be found below.

Module 1: Overview of Event-Based Surveillance
This module broadly describes event-based surveillance within the context of early warning and response and public health surveillance, outlines how event-based surveillance may be defined in a country, and describes the various sources of event-based surveillance information.

Module 2: Facilitation and Mentorship
This module is comprised of two chapters that describe the functions of facilitation and mentorship within the context of event-based surveillance and guides public health practitioners to be effective facilitators and mentors.

Module 3: Intermediate Level Event-Based Surveillance
This module describes how to train public health personnel at the intermediate administrative level on event-based surveillance implementation in health facilities and communities, including their roles and responsibilities. It consists of a facilitator guide, participant guide, and accompanying presentations and exercises to facilitate training.

Module 4: Health Facility Event-Based Surveillance
This module describes how to train clinicians, nurses, and other relevant healthcare workers on how to conduct event-based surveillance in health facilities. It consists of a facilitator guide, participant guide, and accompanying presentations and exercises to facilitate training.

Module 5: Community-Based Surveillance
This module describes how to train community health volunteers and local-level supervisors on how to conduct community-based surveillance. It consists of a facilitator guide and participant guide, which contain lectures and exercises to facilitate training.

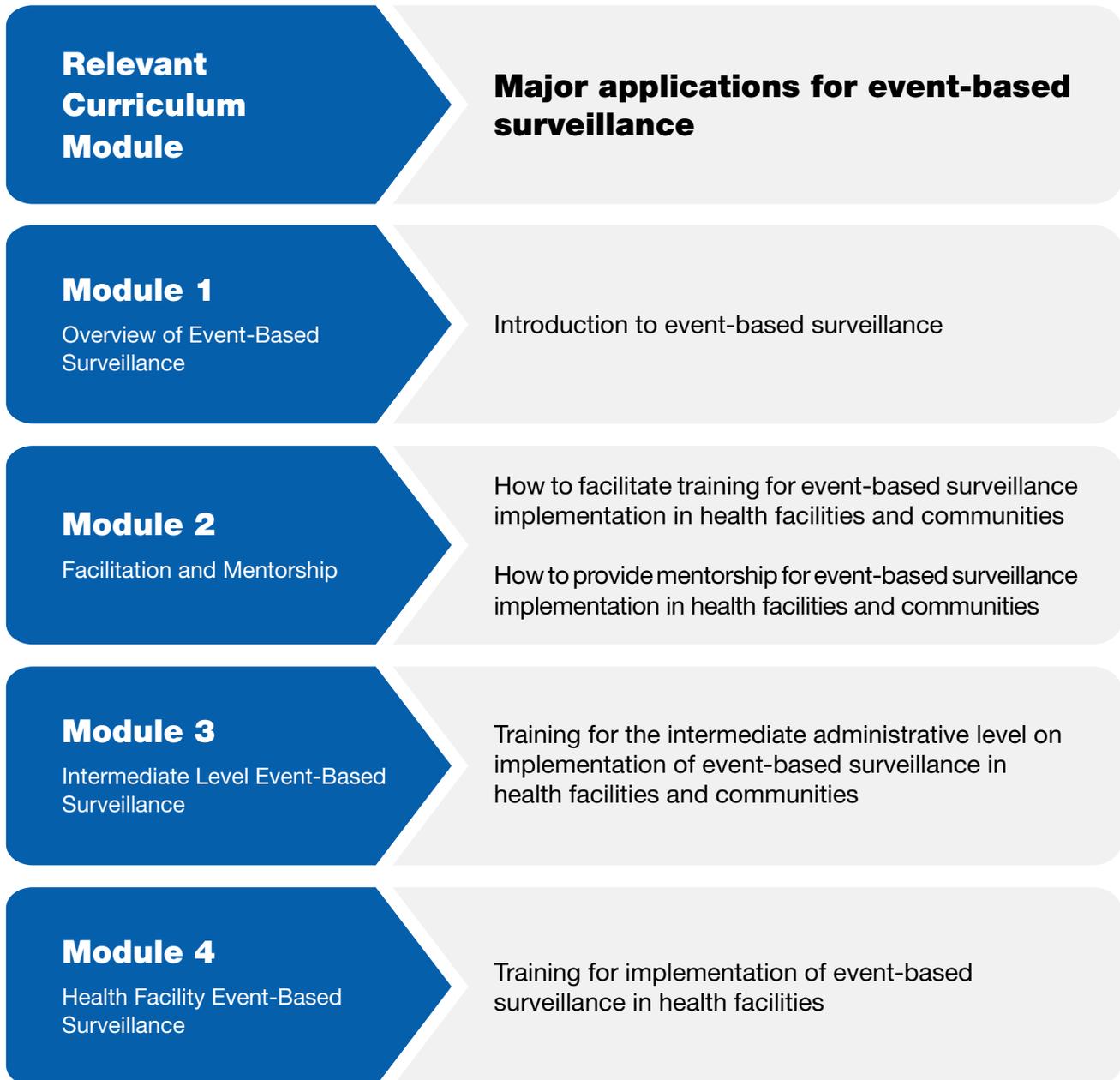### Module 6: Internet Event-Based Surveillance
This module describes how internet event-based surveillance is conducted: "epidemic intelligence" is collected from formal and informal sources, including media reports, to detect potential public health events to verify and take action on. It consists of a facilitator guide, participant guide, and accompanying lectures and exercises to facilitate training.

Module 7: Event-Based Surveillance Training Evaluation Tools
This module provides two sets of evaluation tools that can be adapted and applied following the completion of event-based surveillance training. The first is a post-training evaluation tool that should be used directly after the training is completed. The second is an event-based surveillance training impact evaluation that can be used approximately three months following completion of the training.

Figure 1. Organization of the Training Curriculum for Event-Based Surveillance in Health Facilities and Communities and Internet-Event Based Surveillance

Relevant Curriculum Module	Major applications for event-based surveillance
Module 1 Overview of Event-Based Surveillance	Introduction to event-based surveillance
Module 2 Facilitation and Mentorship	How to facilitate training for event-based surveillance implementation in health facilities and communities How to provide mentorship for event-based surveillance implementation in health facilities and communities
Module 3 Intermediate Level Event-Based Surveillance	Training for the intermediate administrative level on implementation of event-based surveillance in health facilities and communities
Module 4 Health Facility Event-Based Surveillance	Training for implementation of event-based surveillance in health facilities

Module 5
Community-Based Surveillance

Training for implementation of community-based surveillance

Module 6
Internet Event-Based Surveillance Training Module

Training for implementation of internet event-based surveillance

Module 7
Event-Based Surveillance Training Evaluation Tools

Tools to effectively evaluate training for event-based surveillance in the short and long term

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