

Event Based Surveillance

Module 3: Signal Verification and Rapid Event Assessment



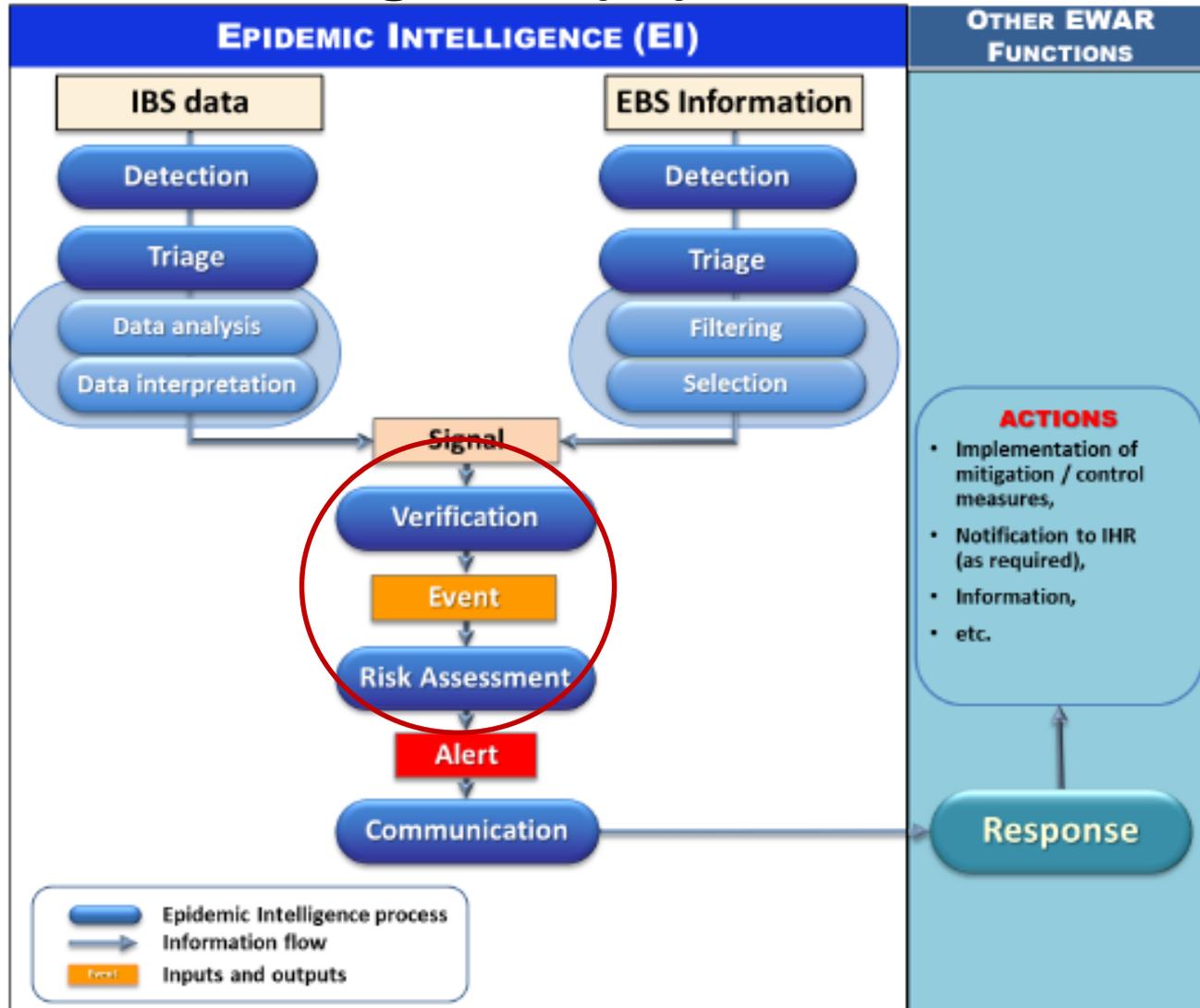
Module 3 Learning Objectives

- 3.1 Describe a process for evaluating signals identified through systematic searches of electronic resources
- 3.2 Describe how verification is an essential step in confirming the reality and characteristics of an EBS signal
- 3.3 Describe the various steps of rapid event assessment for EBS, including
- 3.4 Describe key resources for event assessment, including IHR annex 2, and available SOPs

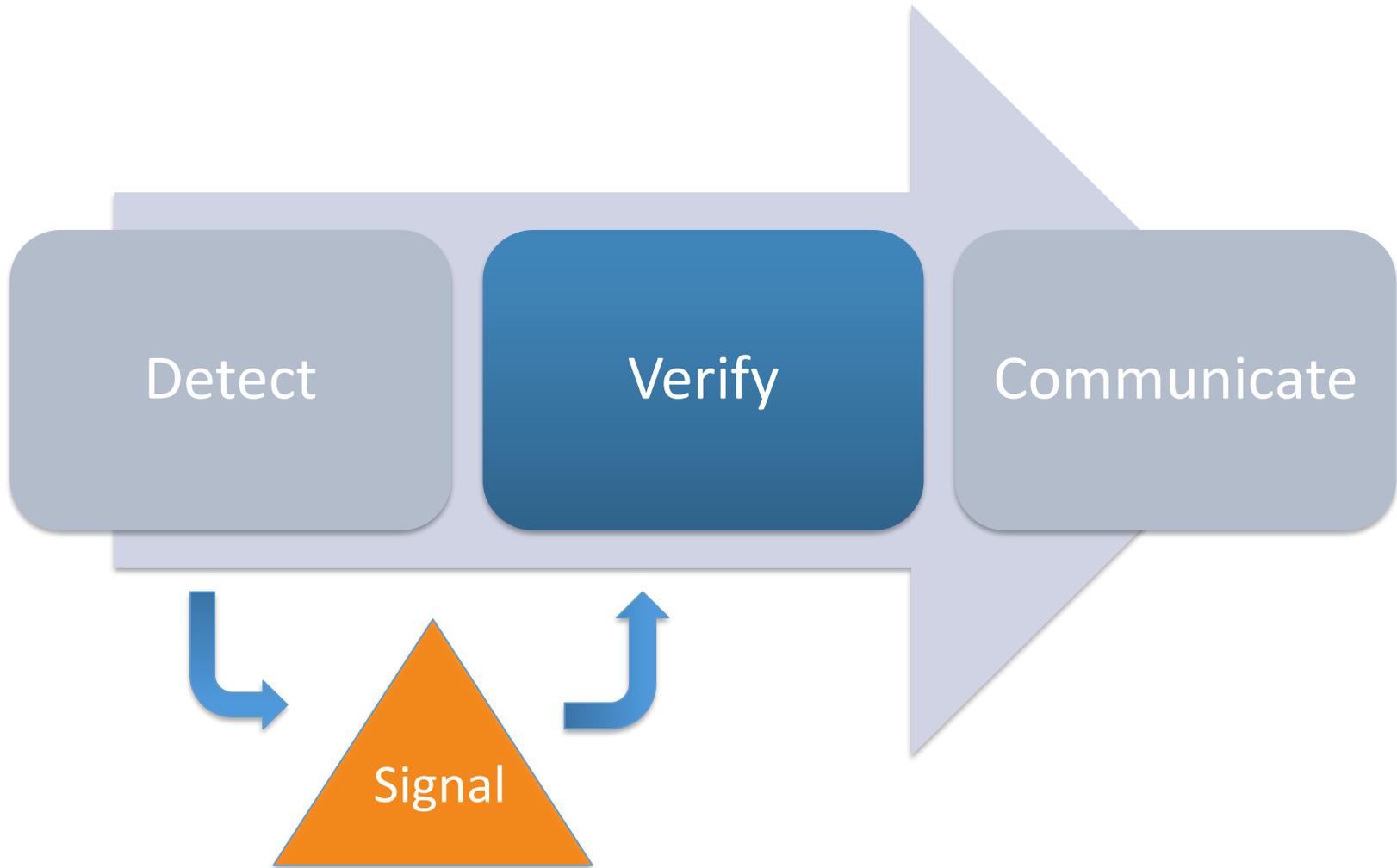


PROCESS:

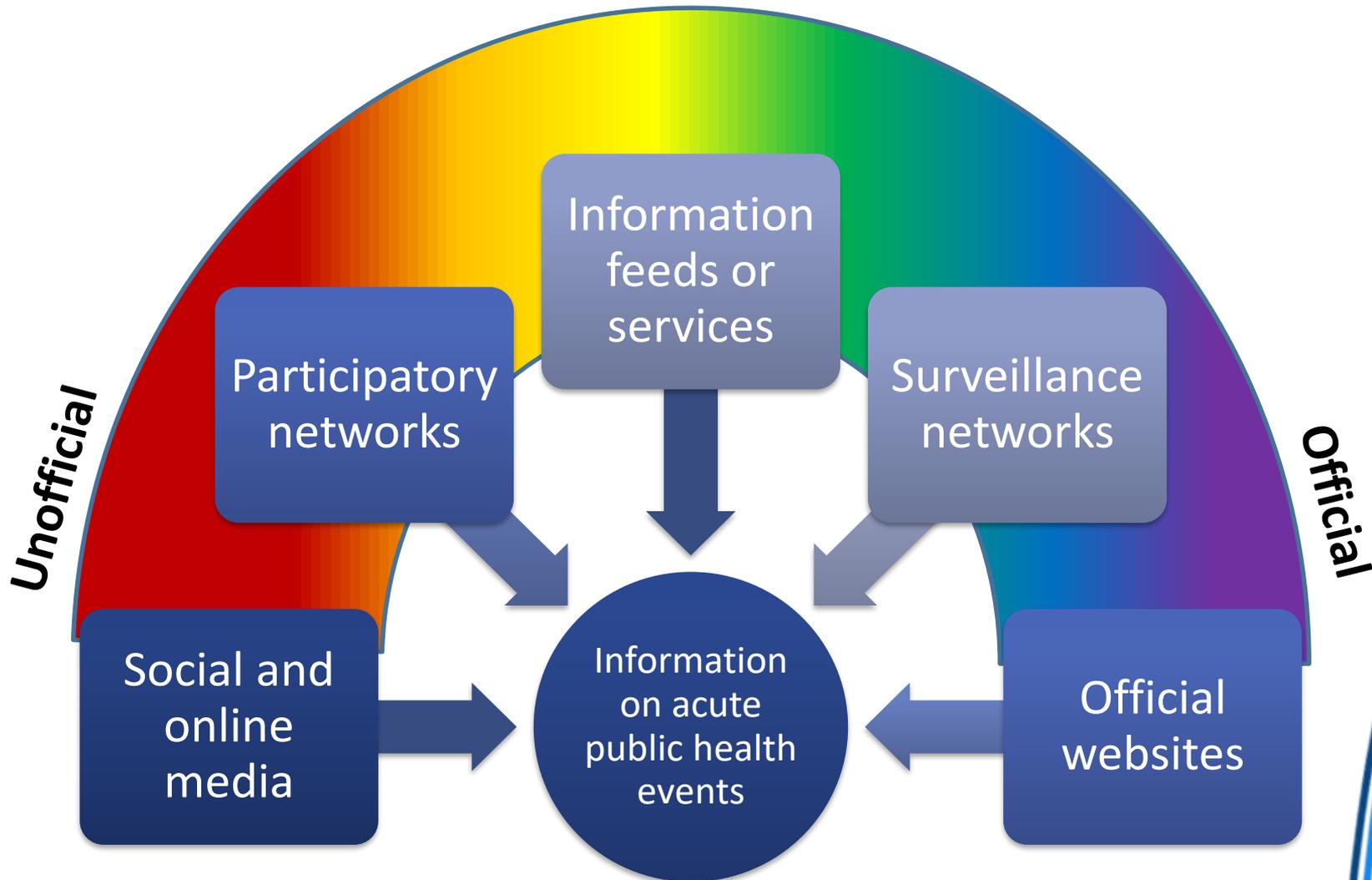
Epidemic intelligence (EI) within EWAR



Phases of Event-Based Surveillance (EBS)



Online resources used for EBS information collection range from official to unofficial



VERIFYING SIGNALS

Defining daily procedures for data analysis

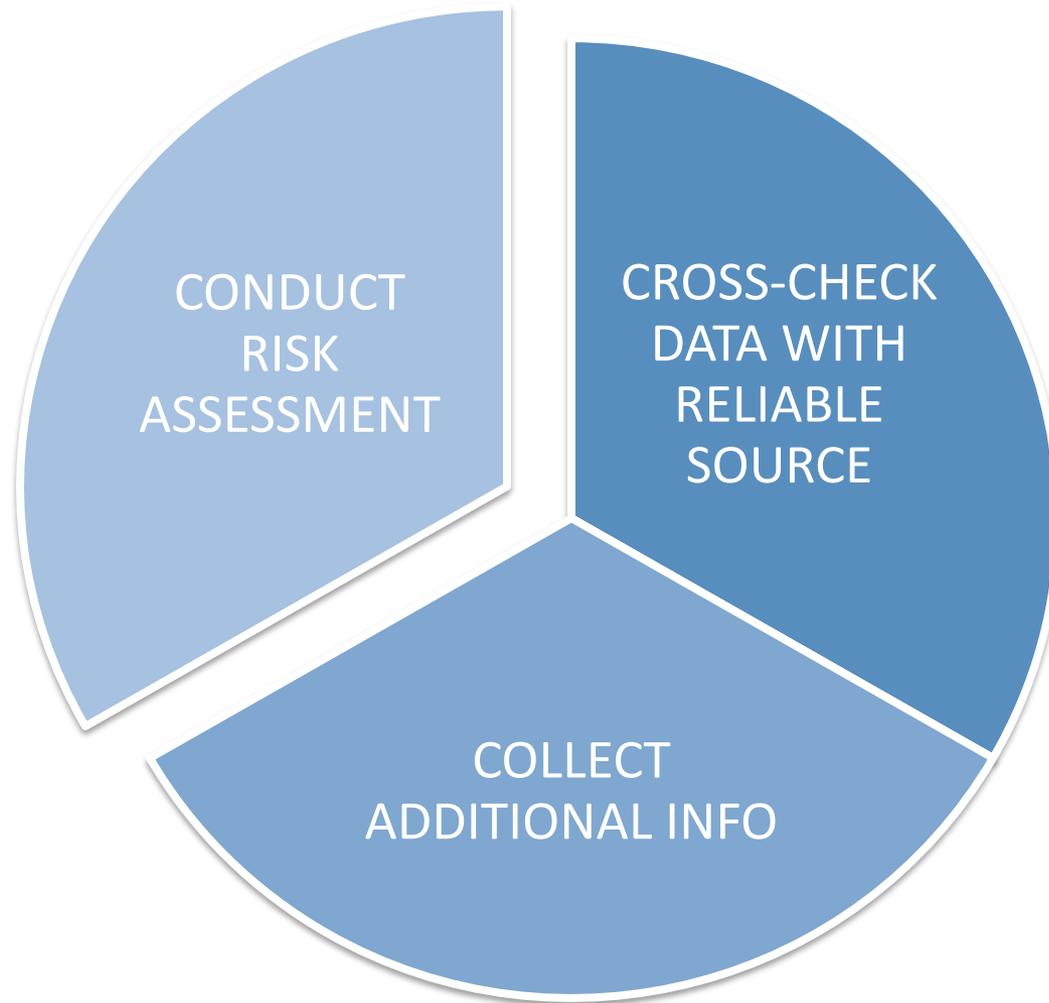


Verification is an essential step in confirming the reality and characteristics of an EBS signal

- Objectives:
 - Determine information source (official or unofficial)
 - Determine whether information is likely to be relevant
 - Actively cross-check the validity of the information using reliable sources
 - Reach out to SMEs and surveillance network for input and additional information



Verification is an essential step in confirming the authenticity and characteristics of the signal



Verification approaches will vary with the source and event, but could include:

- Contacting the original source(s)
- Cross-checking information with other sources/experts
 - Subject matter experts (SME)
- Contacting the local authorities
- Tapping unofficial sources (rumors, media)
- Checking for official information available via internet sources



Identifying reliable sources for verification

Ministry of Health and the Health Sector

Local and intermediate-level health units
National level epidemiology or laboratory units
Healthcare facilities which may conduct surveillance

Other government agencies

- Ministry of Agriculture
- Ministry of Environment
- Ministry of Defense
- Other Ministries

Other

- NGOs
- International
 - Contacts in ministries in other countries
 - Regional and global networks
 - UN Organizations

Assessment and verification of undiagnosed “mystery” disease reports:

Oftentimes media reports describe “mystery” diseases, or diseases that are occurring in a population without a known etiology.

If the report was found using an unverified source:

- E-mail the report to Ministry staff in the location of the reported outbreak
- Ask staff if they are aware of the event
- Notify staff that the report was found using an unverified source, and ask staff if they are able verify that the outbreak truly did occur



Assessment and verification of undiagnosed “mystery” disease reports:

If unable to verify:

- Email colleagues in partner institutions (e.g., adjacent Ministries of Health, WHO, UN Organizations)
- If still unable to verify, continue to monitor media and other reports for temporally-related reports which may corroborate the original report, if any found, repeat the above process

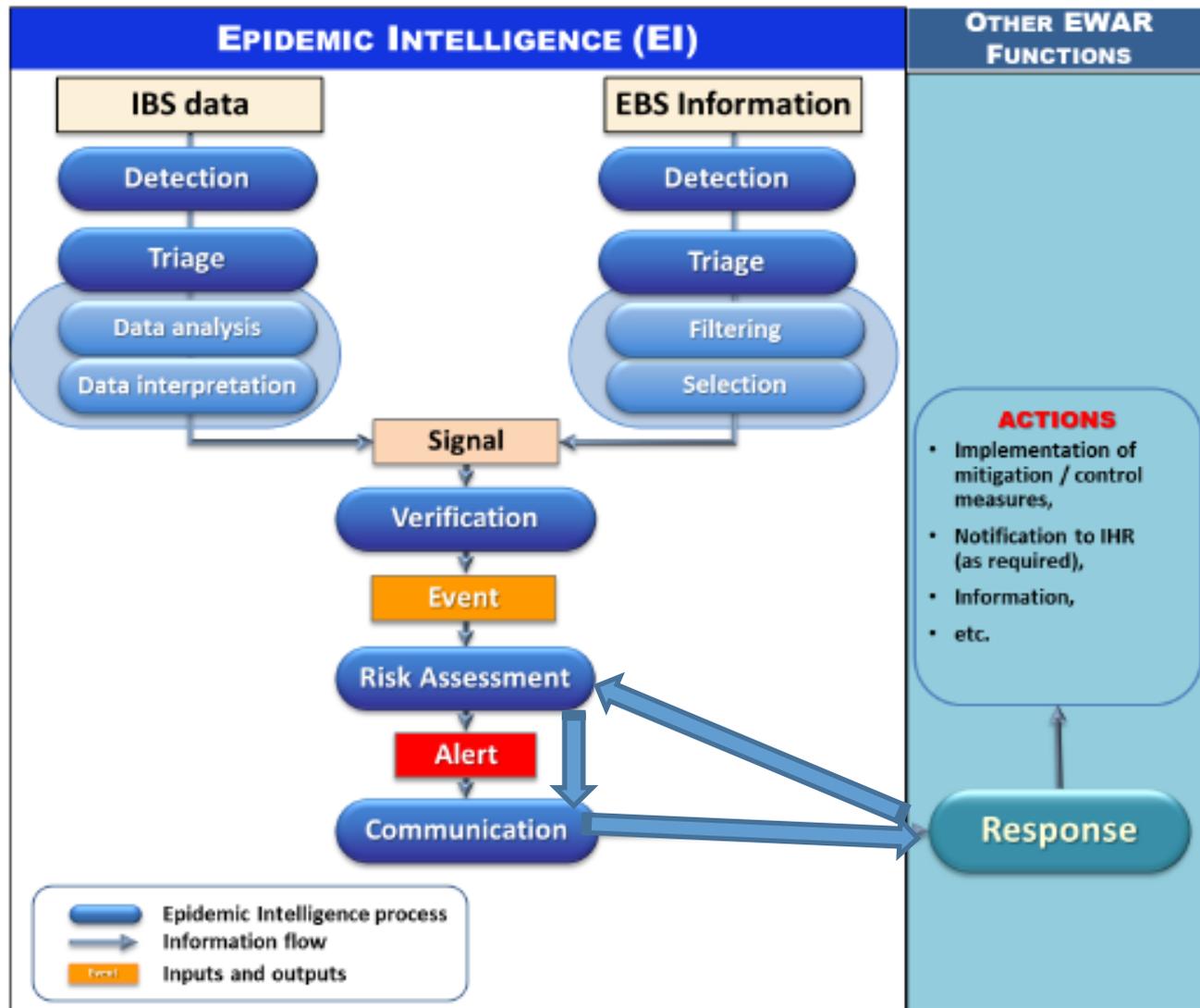


RAPID EVENT ASSESSMENT

Defining daily procedures for data analysis

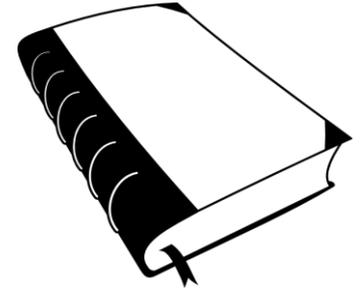


Risk assessment is a continuous process



Reprinted with permission from WHO (2014)

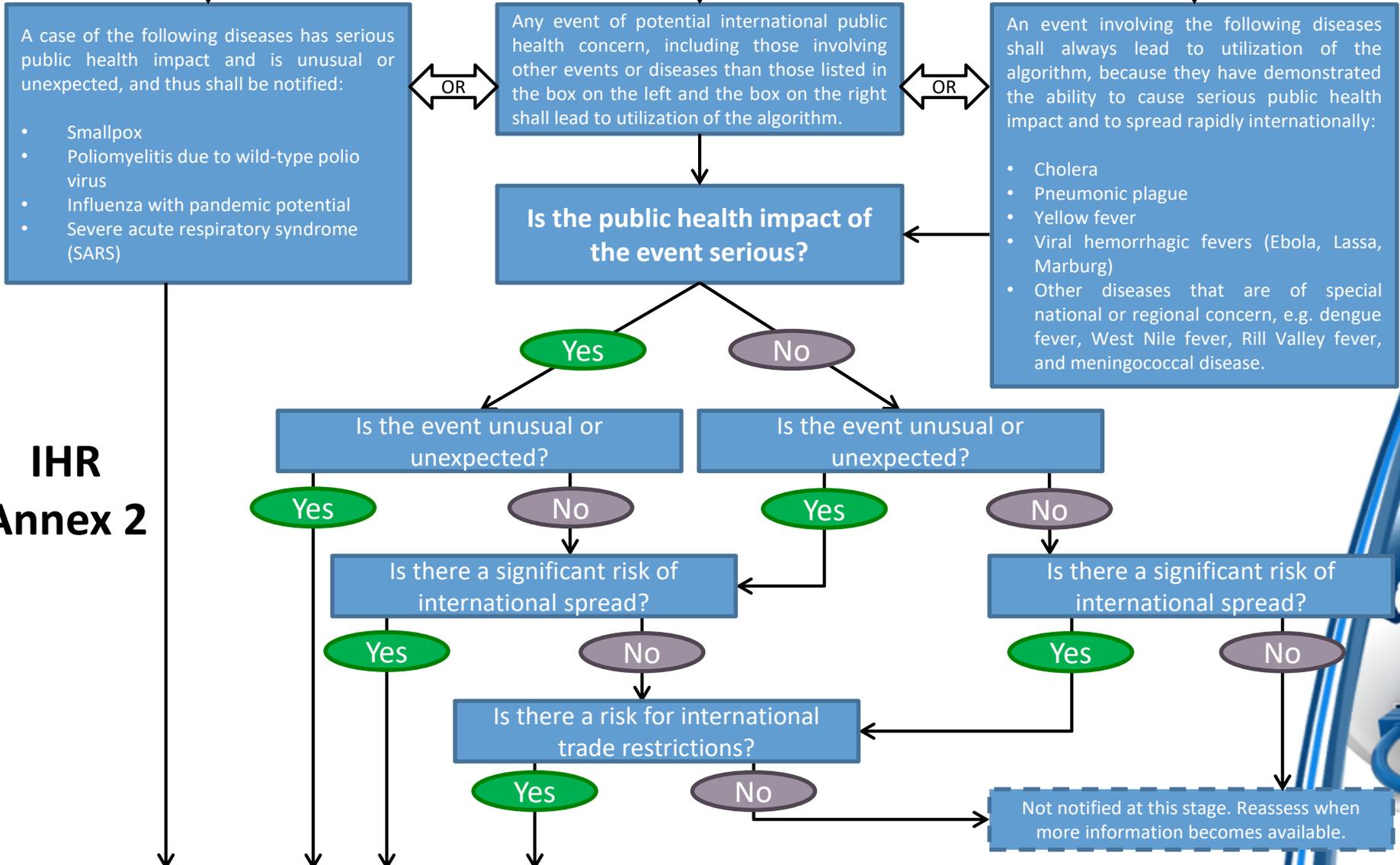
DEFINITION:
Risk assessment



- Systematic and continuous process for assessing and documenting information to provide the basis for taking action to manage and reduce the negative consequences of an acute public health event.



Event detected by national surveillance system



**IHR
Annex 2**

Event shall be notified to WHO under the International Health Regulations

Characterizing the type of event

Health Event of International Importance is a verified disease outbreak or a health threat that meets one of the following criteria (IHR Annex 2):

- 1. Is one of the following: SARS, polio (wild-type), smallpox or a new subtype of influenza
- 2. Presents a serious threat to the public health
- 3. Is unusual or an unexpected event
- 4. Poses a significant risk for international spread that potentially requires international intervention
- 5. Potentially causes restrictions of trade or travel

Health Event Under Investigation is a disease outbreak or a health threat that potentially meets one of the above criteria, but, at the moment, is not yet verified.

Health Event for Information is a description of a verified health event that does not meet one of the above criteria but is of interest to the public health community.



Assessing risk level of the event: Geoscope & Public Health Impact

Risk Scales

1) **Geographic Scope** refers to the observed geographic distribution and rapidity of spread for an outbreak and is categorized as follows:

- **High Events** affecting several multi-national regions with evidence of continuing spread
- **Moderate Events** affecting a national, or bordering multi-national region, with evidence of continuing spread
- **Low Events** limited to sub-national, local areas

2) **Public Health Impact** refers to actual or potential severity of illness, ease of transmission, public fear, or economic affects and is categorized as follows:

- **High Agent** that is or potentially: highly pathogenic, highly transmittable, new or emerging, or has significant potential to disrupt travel/trade
- **Moderate Agent** that has low to moderate potential to cause morbidity /mortality, transmit efficiently, or to disrupt travel or trade

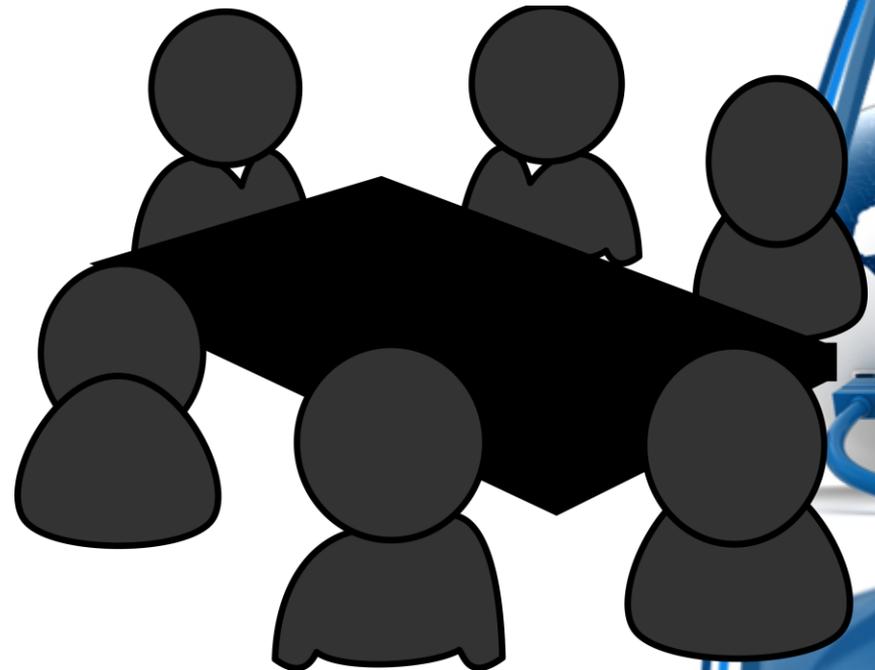


Event characterization: events can be classified systematically

Discard	Events that do not constitute a risk to human health.
Monitor	Events in which a specific response is not yet called for, but potential exists for serious consequences and a response may become appropriate. May include situations where additional information is being collected, laboratory results are pending, there are no international events with potential for importation of cases to the country, health risks exist with no human cases for the time being, etc. Follow-up and additional risk assessments should be repeated as new information is received.
Report	Events which are determined to require action. Actions may include further field investigations or control measures are needed to interrupt transmission. <i>Some events always reported.</i>
Respond	The response may be in the form of technical advice, deployment of material, deployment of a team for field support for outbreak investigation and response, or coordination of multi-provincial outbreaks. Response may be coordinated by another part of the government or MoH.
Close	Events in which no further action is needed based on risk assessment. For example, the risk to human health may disappear, cases cease to be reported, or laboratory results were negative.

Risk assessment: a team effort

- Risk assessment is performed by the EBS unit with input from SMEs
- Risk assessment process:
 - Routine (daily)
 - Coordinated
 - Consistent



Resources:

Early detection, assessment and response to acute public health events: Implementation of Early Warning and Response with a focus on Event-Based Surveillance (Interim Version). Geneva: World Health Organization, 2014.
http://www.who.int/ihr/publications/WHO_HSE_GCR_LYO_2014.4/en/

Standard Operating Procedures: Handbook for Event-based Surveillance. Atlanta, Georgia: US Centers for Disease Control and Prevention, 2014.

Rapid Risk Assessment of Acute Public Health Events. Geneva: World Health Organization, 2012.
http://apps.who.int/iris/bitstream/10665/70810/1/WHO_HSE_GAR_ARO_2012.1_eng.pdf



Thank you!

Global Disease Detection Operations Center (GDDOC)
Email: [GDDOC-Outbreak \(GDDOUTBREAK@CDC.GOV\)](mailto:GDDOC-Outbreak@CDC.GOV)

