Event Based Surveillance

Module 1.0 Introduction to EBS

Module 1: Learning Objectives

1.1 Identify public health advantages of implementing EBS and early warning systems

1.2 Understand the contexts for indicator-based (IBS) and event-based surveillance (EBS)

1.3 Describe key terms in EBS and early warning

1.4 Identify the 3 phases of EBS (detect, verify, communicate)

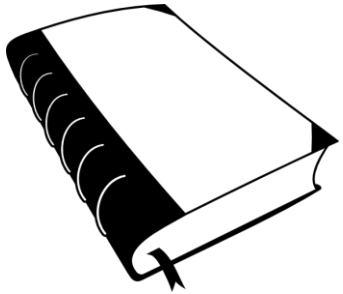
1.5 Identify resources needed to implement and sustain EBS activities

INTRODUCTION

Public Health Surveillance and
Early Warning and Response (EWAR)

DEFINITION:

Public Health Surveillance



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

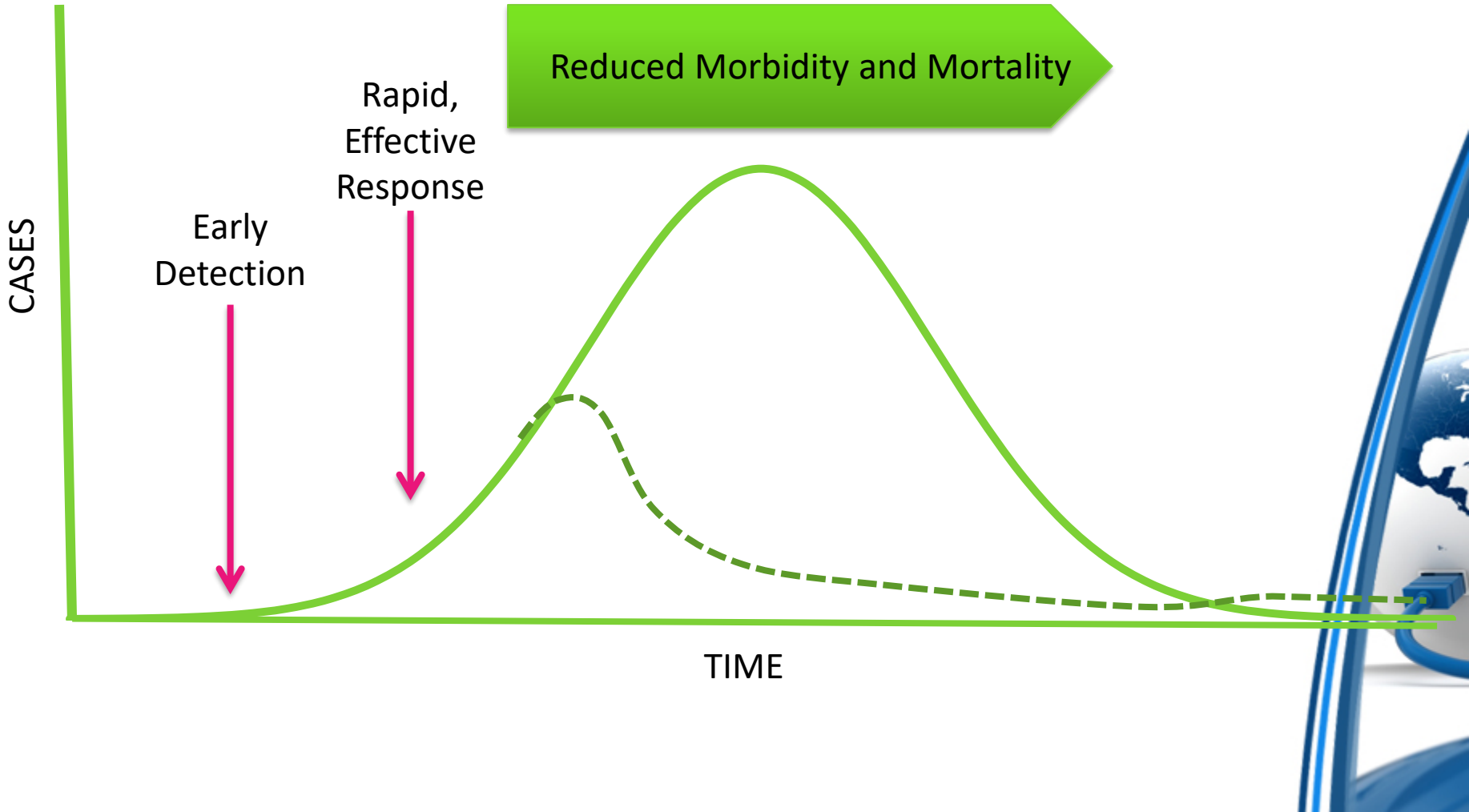
Source: World Health Organization (WHO)

***GOAL*:**
Public Health Surveillance

Data for Action

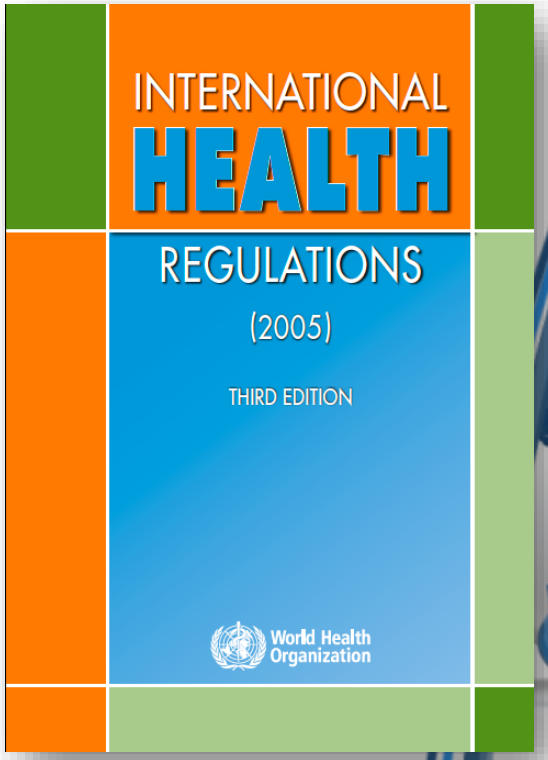
- Provide data for action by early identification of Public Health Emergency of International Concern (PHEIC)

Benefit of Early Warning and Response (EWAR)



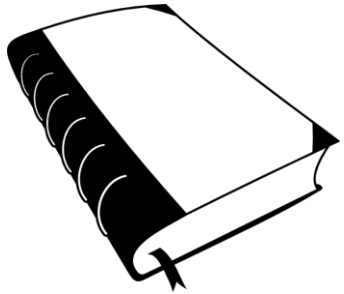
LEGAL AGREEMENT:
Public Health Surveillance (Global context)

- **International Health Regulations (IHR)**
  - The revised IHR is an international framework for strengthening and maintaining capacities for early detection and response
    - Binding legal agreement
    - Define the obligations of Member States and WHO
      - *Meet minimum requirements to detect, assess, report, and respond to public health events*



- *http://www.who.int/topics/international_health_regulations/en/*

DEFINITION:
Public Health Emergency of International Concern (PHEIC)



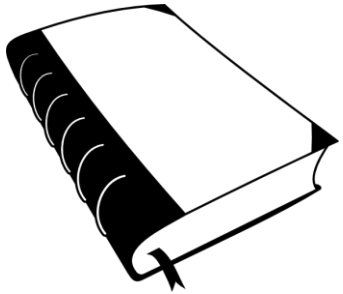
- An extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response

EARLY WARNING AND RESPONSE:

Indicator-based surveillance

Event-based surveillance

DEFINITION
Early Warning and Response (EWAR)



- 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.

OBJECTIVE:

Early Warning and Response (EWAR)

- Increase sensitivity of detection, quality of risk assessment, and timeliness and effectiveness of the response to acute public health risks in order to minimize the negative health consequences to the affected population

SPECIFIC OBJECTIVES:

Early Warning and Response (EWAR)

- Detect acute health events and health risks early
- Communicate information to national level
- Verify information
- Perform risk assessment
- Alert health actors at appropriate levels
- Investigate events promptly
- Implement effective mitigation and control measures
- Communicate and coordinate with national/international stakeholders

SURVEILLANCE SYSTEMS:
Early Warning and Response (EWAR)

Indicator-based surveillance (IBS)	Event-based surveillance (EBS)
Routine collection of data on priority diseases or syndromes according to established case definitions	Organized collection, assessment, and interpretation of mainly unstructured information on health events or risks
Most information from health facilities	Information from multiple sources (official, unofficial, informal)

SURVEILLANCE DATA:

Early Warning and Response (EWAR)

Indicator-based surveillance (IBS) data	Event-based surveillance (EBS) data
• collected regularly • generally credible • often delayed • limited to health sector • focused on known diseases	• ad hoc • of varying reliability • real-time • all-hazards • flexible

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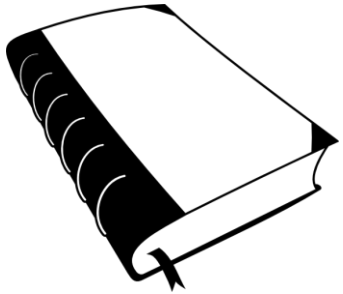
PHASES OF EPIDEMIC INTELLIGENCE

Using IBS and EBS for
Early Warning and Response (EWAR)

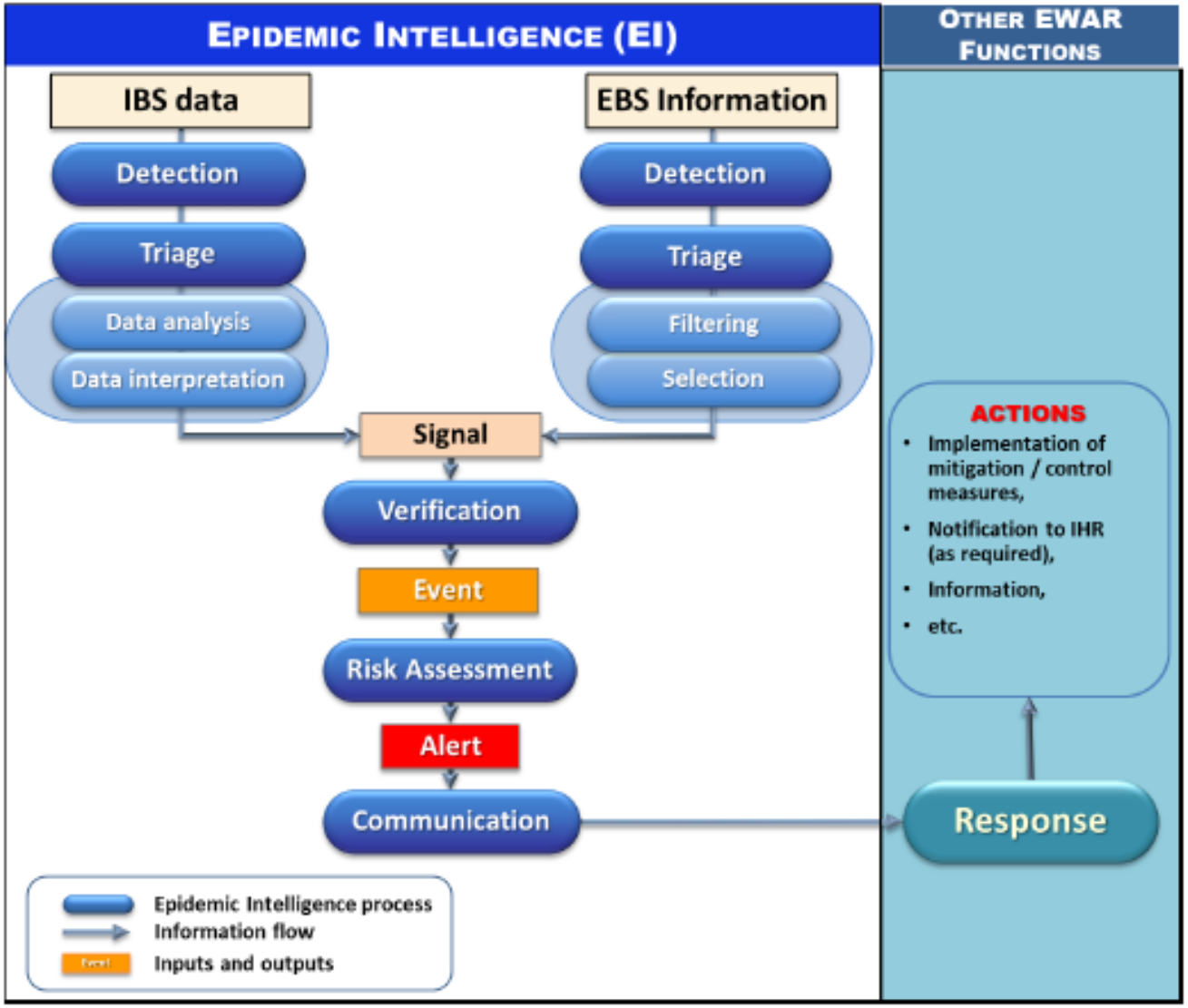
DEFINITION:
Epidemic intelligence (EI)



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

PROCESS:

Epidemic intelligence (EI) within EWAR



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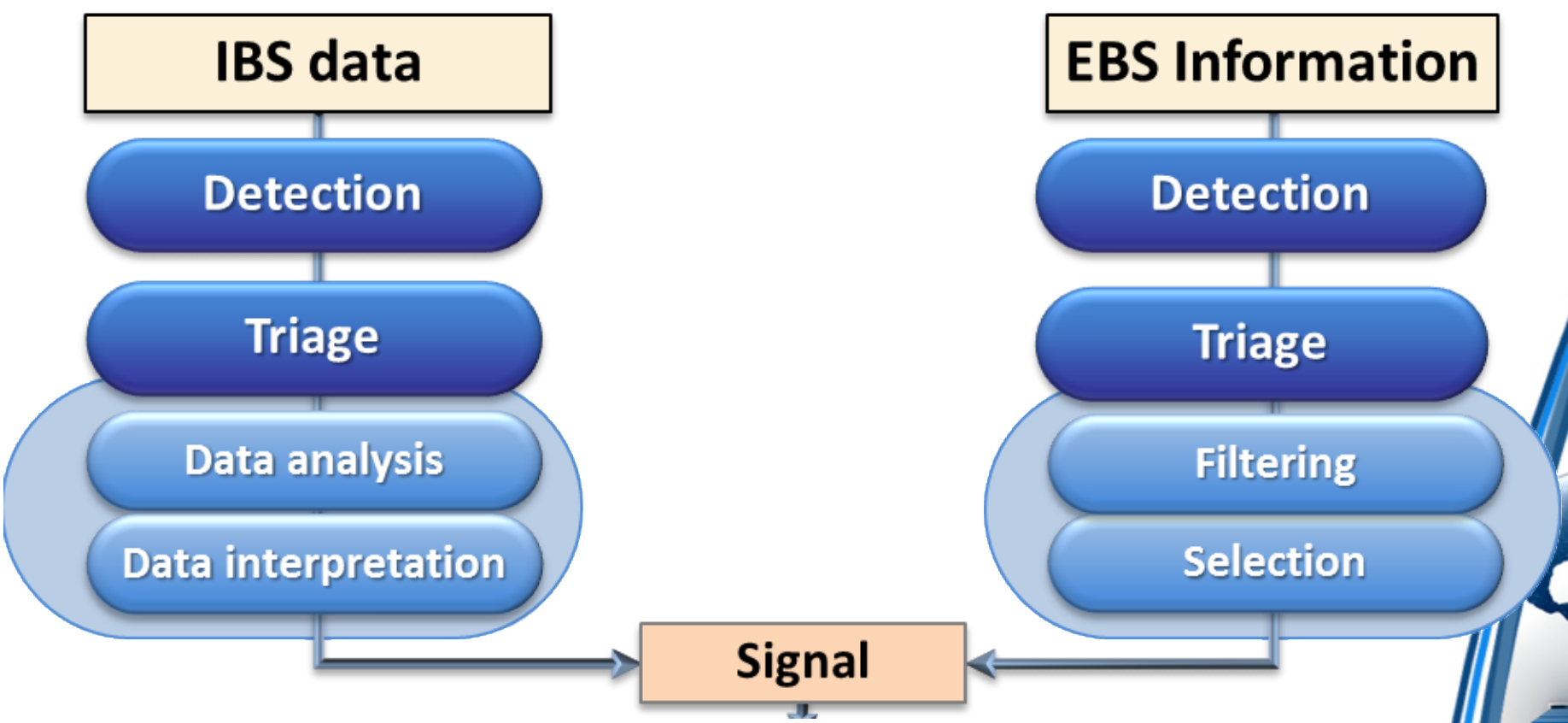
PROCESS:
Epidemic Intelligence - Signal Detection



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PROCESS:

Epidemic Intelligence - Signal Detection

Data on cases of priority diseases/syndromes collected from health sources

Data reported to designated surveillance unit

Data aggregated and analyzed

Disease patterns compared to baseline/threshold values

Analysts in a surveillance unit systematically monitor information from official and unofficial sources

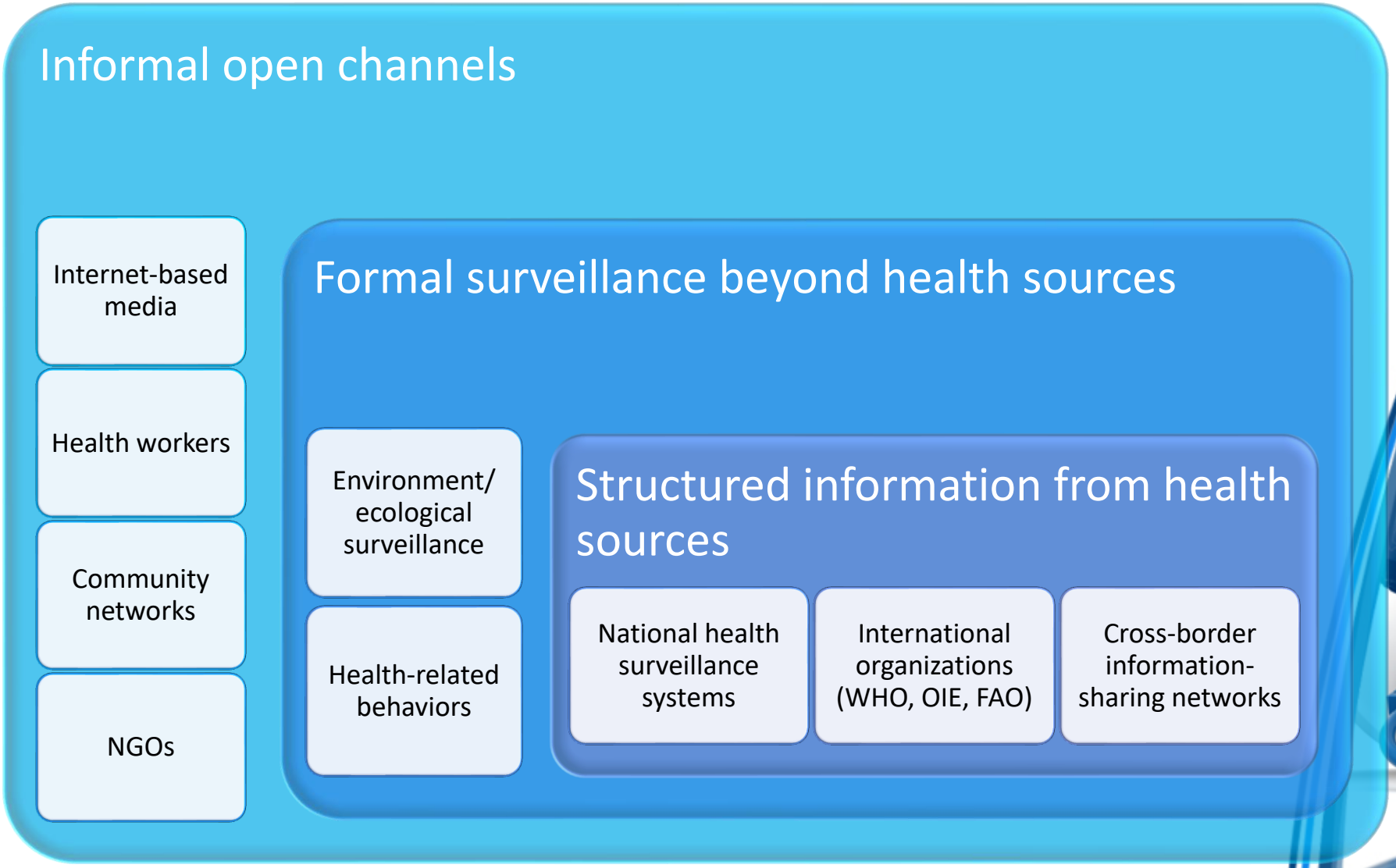
Data are collected and collated in real time

Data on any health-related occurrence which may affect human or animal health are reviewed and verified

Reports about public health events of importance/interest sent to leadership

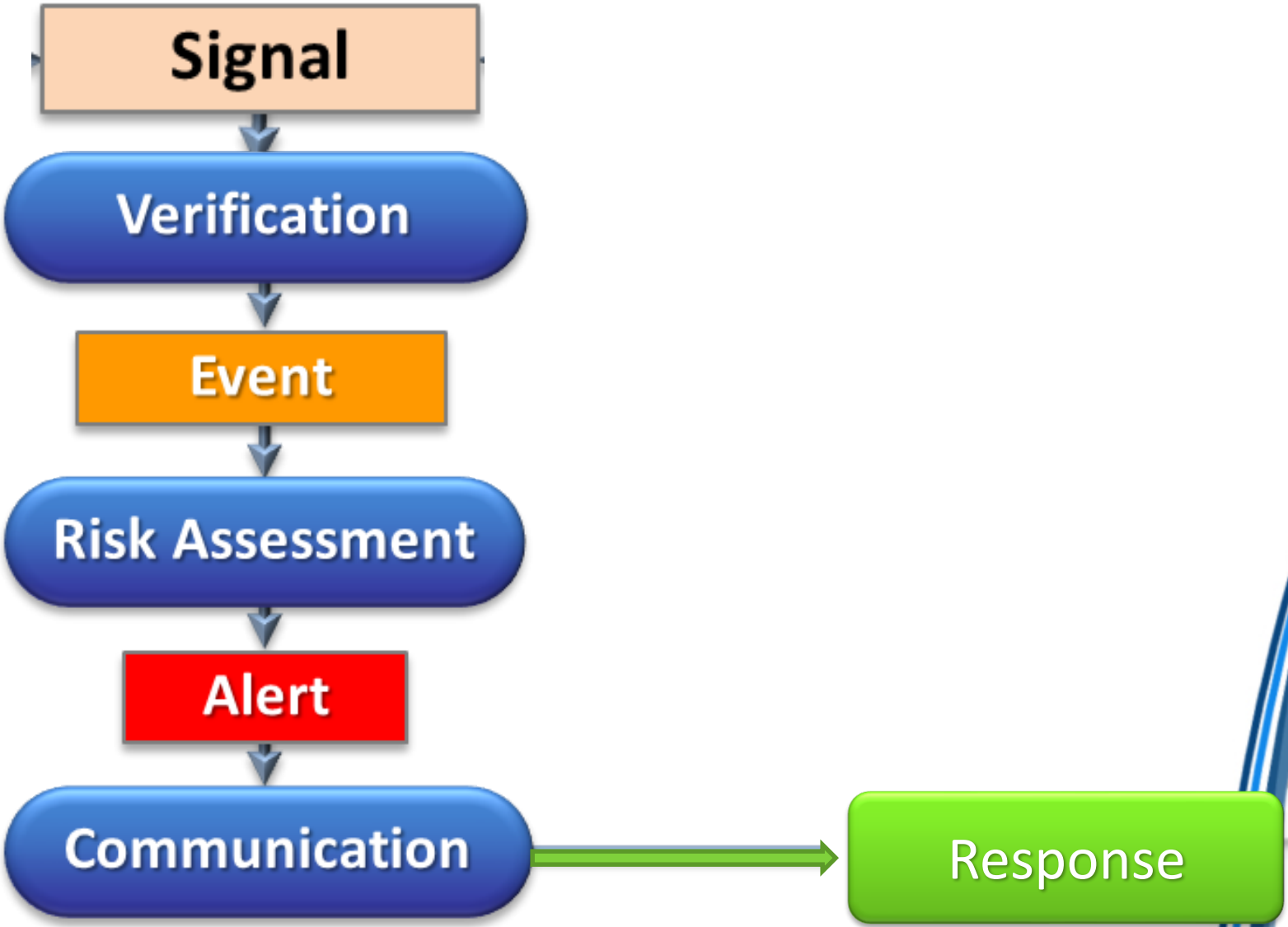
Signal

SOURCES OF INFORMATION:
Early Warning and Response (EWAR)



PROCESS:

Epidemic Intelligence – Response Determination



EARLY WARNING AND RESPONSE:

Event-based surveillance

Advantages of Event-based Surveillance

Traditional disease reporting mechanisms:

- produce credible information but reporting is often delayed; media monitoring systems are gathering information 24/7
- are designed for known diseases and often do not report cases until the etiology is known
- are not well established in all countries
- are limited to the health sector, whereas media reports come from reporters who are highly motivated to report disease events or health threats and have a way to promptly provide the information to the public

Technological advances in the past 20 years have revolutionized the way we access information

Event Based Surveillance (EBS)

Analysts in an EBS unit provide prompt, expert analysis to provide information

Roles

- Systematically collecting and analyzing international health event data for early detection
- Classifying the health risks associated with these events
- Disseminating event information
- Facilitating appropriate and rapid interventions

Resources

- Leveraging existing expertise in-country via formal and informal networks
- Working within the context of an overall surveillance system

Event Based Surveillance (EBS)

- The mission of an EBS unit is to provide a single source of reliable, comprehensive, and high quality information on international disease outbreaks and other health threats

Event Based Surveillance (EBS)

Human resources are critical to success

- Structure of EBS team will vary by country, based on the resources, organizations, and priorities of the health system, but trained personnel are essential
  - Range of disciplines
  - Skills and knowledge to use information technologies for analysis and communications
  - Ability to work collaboratively, transparently, and flexibly within a team

Event Based Surveillance (EBS)

Developing successful and sustainable EBS units requires resources and commitment

- Leadership and coordination
- Trained staff
- Information and communications technologies
- Country-specific tools for analysis and reporting

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/

Thank you!

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