Learning Objectives
Risk Assessment

At the end of the session participants will be able to:
- Understand that risk assessment is an iterative process that continues from the time of the events first detected to the time the event is closed
- Estimating a potential risk for a public health event is critical to determining which, if any, public health measures are required
- Explain why the port health authority must conduct this phase in collaboration with other stakeholders who may have information concerning the event
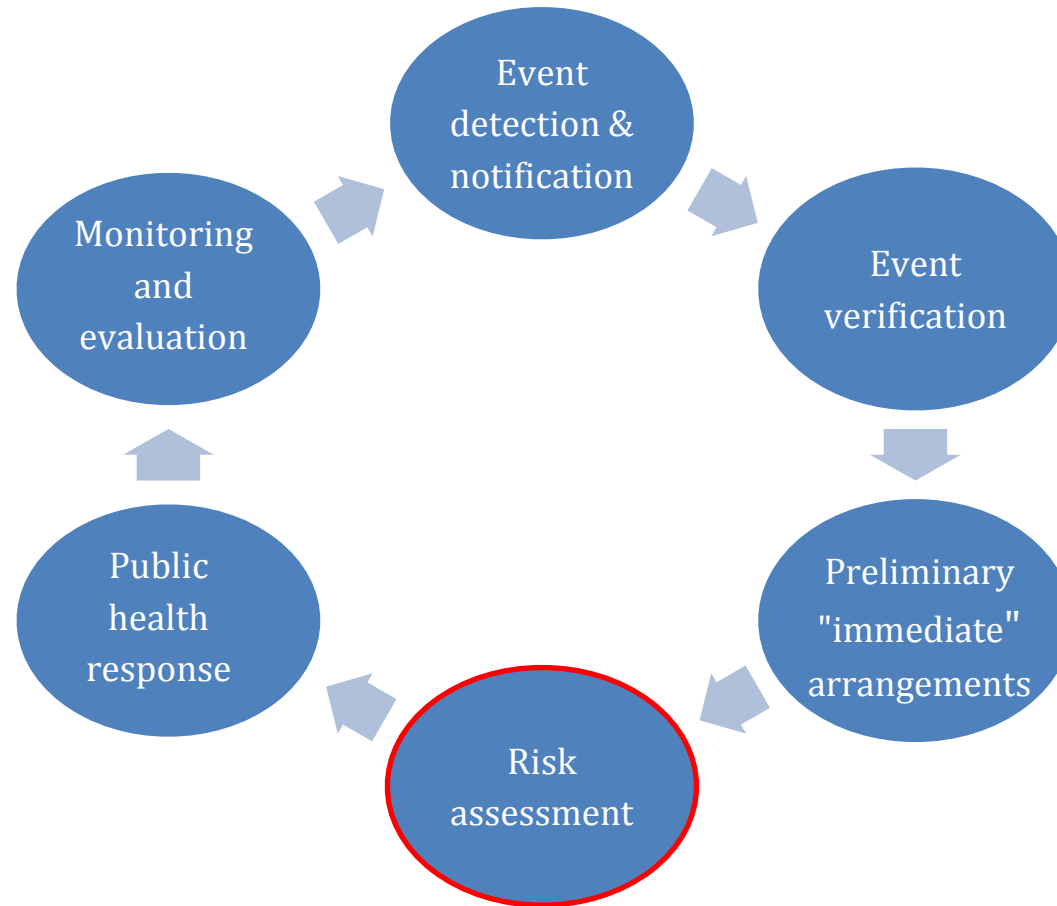
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Risk Assessment

"is an iterative process that continues
from the time the event is first detected
to the time the event is closed"

Risk Assessment

Risk Assessment

Iterative process for risk assessment

In the risk assessment phase, port health will consider the likelihood of the event and potential impact/consequences for travellers, the aircraft, the airport including other stakeholders and the environment (Figure 4). As noted earlier, the speed of air travel means that a rapid risk assessment process may be required

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Impact Assessment

The following questions should be considered during the assessment of potential impact/likelihood of the public health event, taking into consideration the questions posed in IHR Annex 2 – Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern.

1. Can the event be characterized as serious?

2. Does the public health hazard have the potential to affect a large number of susceptible or vulnerable people (e.g. outbreak) during their journey or at their final destination?

3. Is there a risk for introduction of the agent (e.g. disease, vector) in the country (if it is not already endemic or present)?

4. Is there evidence that international spread of the hazard and/or disease has already occurred?

5. Does the event have the potential to interfere with international traffic and trade?

6. Is there evidence that this event has had adverse consequences in public health in the past?

7. Are evidence-based prevention and control measures available, and can they be implemented?

8. What is the likelihood of spread?
   a. For chemical or radiological agents, consider protection for workers during assessment, containment and disposal.
   b. For identified infectious agents, consider the transmissibility and reproduction (Ro) number.
   c. For vectors, consider the potential for damage and establishment in new environments.

9. Is my airport/port able to deal with the situation?

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Risk Assessment Criteria Travellers

Population or sector	Potential risk factors or elements for inclusion in risk assessment	Potential impacts	Factors for consideration of likelihood
Travellers	• Itinerary – departure, in-transit and destination • Susceptible population • Seating arrangements in aircraft • Cabin locations on ships • Conditions at boarding including delays and over-crowding	• No effect • Mild/short-term illness • Severe/chronic illness • Death • Delay or disruption in travel plans • Medical assessment • Therapeutic measures • Medical treatment Impacts may occur during travel, immediately thereafter or at a future point in a traveller's life In most cases, the impact (illness or injury) will be noted during travel or immediately thereafter, but may be delayed for secondary or subsequent cases	Is the infectious agent known? If yes, what is the natural history or disease (transmission and/or reproduction number)? For chemical and radiological exposure, are specialists available to support port health? It is necessary to consider the ability to contain the release? Are there residual exposure and/or exposure pathways? Is the chemical agent known? Is the product safety sheet available? For radiological exposure, is the mechanism of exposure/isotope known?

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Risk Assessment Criteria
Aircraft Operator

Population or sector	Potential risk factors or elements for inclusion in risk assessment	Potential impacts	Factors for consideration of likelihood
Aircraft/Ship operator	Duration of the flight/sailing Type of aircraft/ship • PASSENGER CAPACITY • ACTUAL OCCUPANCY IN FLIGHT/ON BOARD SHIP How many crew are on board aircraft/ship and what is their training? What is the availability of medical supplies? • IS THERE A HEALTH PROFESSIONAL ON BOARD? • What is the availability of ground medical support?	• Business disruption (delays due to diversion whether in transit or upon arrival) • Customer dissatisfaction and reduction in confidence • Infection among crew • Occupational risk to ground crew/dock workers • Contamination of aircraft/ship • Damage to aircraft/ship (on board) • Cost to airlines/shipping company Impacts may be short term if they are due to delays or disruptions to the schedule Impacts may be medium term if the aircraft/ship requires servicing Impacts may be long term if the business's reputation is affected and/or customers are dissatisfied	• Was the ventilation system functioning on board the aircraft prior to take-off and in-flight? • Were infection control procedures implemented on board? • Was notification made prior to landing/docking? • Were PLFs completed prior to disembarkation?

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Risk Assessment Criteria
Airport and Ground Handling Services

Population or sector	Potential risk factors or elements for inclusion in risk assessment	Potential impacts	Factors for consideration of likelihood
Airport and airline ground handling services	Are IHR core capacities in place? Is the public health component of the aerodrome emergency plan in place? If so, was it developed and implemented in coordination with the public health sector and is it being exercised? Is there access to port health resources? • Is there a vector control programme in place? Were border services, including cargo, notified? Were airline ground handling services for water, waste and aircraft grooming notified? • Were food catering services notified? Were cleaning personnel notified?	Business disruption to travellers or the public due to delays, cancellations and/or restrictions on travel Introduction of disease or vectors to the environment and local population • Illness or injury among airport operational staff (physical illness, psycho-social effects) Contamination of the environment Impacts to the airport may be short term for airport disruptions or longer term if a vector or other contamination is introduced into the environment.	• Is infrastructure in-place and maintained to meet IHR core capacities? • Does the airport emergency plan include planning for a public health event? • Is there a central communication hub for airport stakeholders? • Can the airport provide appropriate space to assess travellers and aircraft?

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Risk Assessment
Environment and Port Health

Population or sector	Potential risk factors or elements for inclusion in risk assessment	Potential impacts	Factors for consideration of likelihood
Environment	Were environmental controls for contaminated water and waste implemented? Were there programmes for agriculture and wildlife?	Contamination of local environment including air, water and waste streams Introduction of disease to agricultural products or wildlife	Are environmental specialists available to assist in risk assessment?
Port health	• Are airport health resources available onsite or remotely for assessment? • Does the airport have the capacity/ability to prevent further travel, if necessary? • Is the public health component of the aerodrome emergency plan in place? If so, was it developed and implemented in coordination with the public health sector and is it being exercised?	• Affected passengers disperse into the community • Contact tracing is ineffective, resulting in transmission to the community • Affected travellers continue their travel to other countries, resulting in global spread of disease	Does port health have the resources to manage the event locally? Are other resources available to support contact tracing?

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