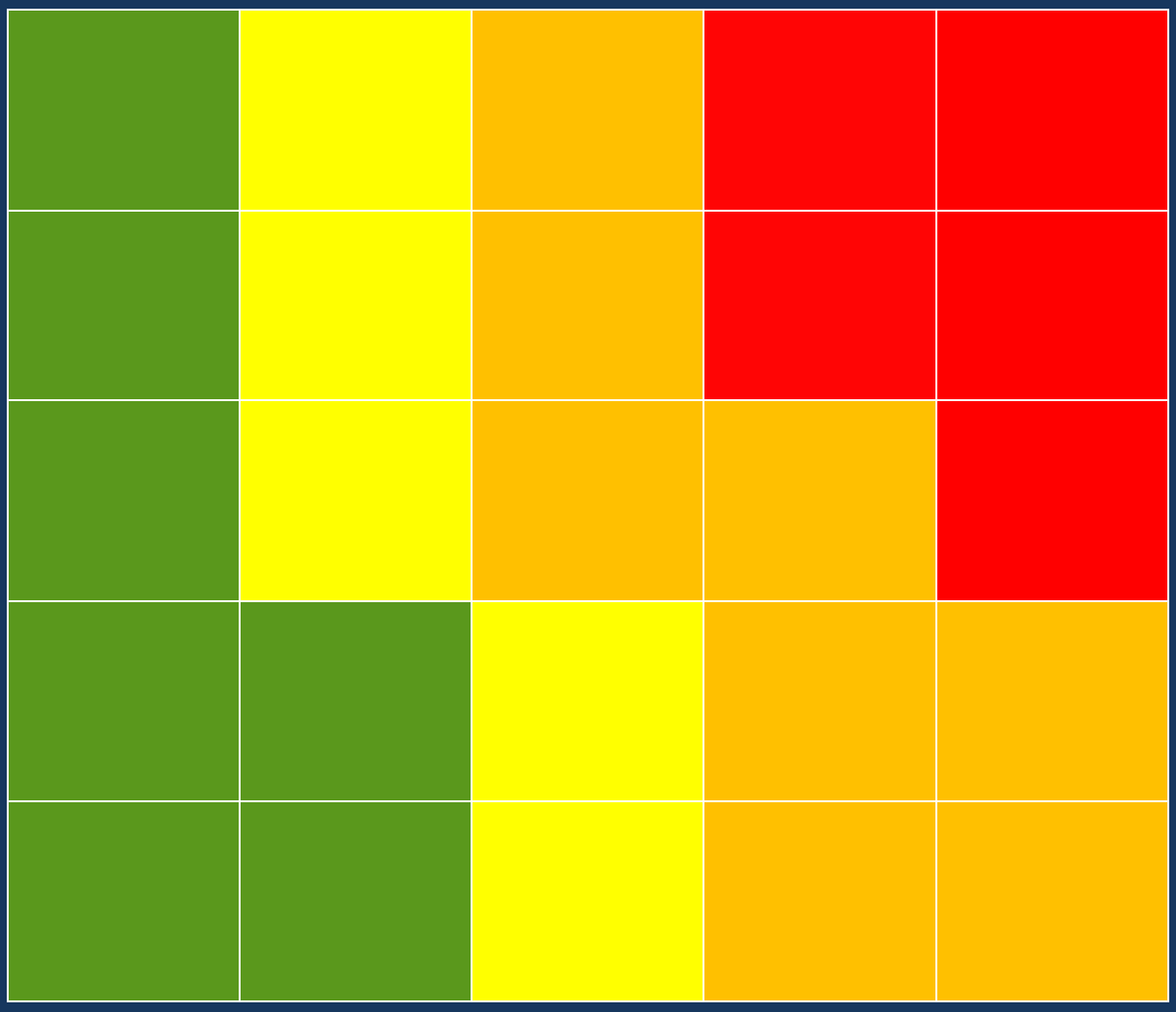
WHO Rapid Risk Assessment Guidance v.2.1



World Health Organization

WHO "Rapid Risk Assessment Guidance v.2.1

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Definitions

Event	Once a signal is verified/substantiated, it becomes an event (regardless of its severity). All events detected through Epidemic Intelligence are systematically risk assessed. The "initial" risk assessment may be conducted several times for the same event if changes in the epidemiological or contextual situation are reported.
Rapid Risk Assessment	A rapid risk assessment (RRA) is conducted for an event that meets the criteria requiring formalisation of the risk assessment to be conducted by WHO. It is done by using the template for "Rapid risk assessment, the acute event of potential public health concern". The process of triggering and conducting this is described in this guidance document.
National event	An event requiring attention/ support/ intervention from the national level authorities and potentially from a WHO country office.
Regional event	An event involving or impacting more than one country, requiring coordination of interventions/ response beyond national borders (usually adjacent countries).
Global event	An event transcending the regional level or that may affect several regions and may require coordination between and intervention across regions.
Confidence	In this document and on the RRA template, confidence refers to the **confidence in the data/information** available at the time the RRA is conducted.

Introduction

The Public Health Intelligence (PHI) teams of the WHO Health Emergencies Programme (WHE) at the regional and headquarters levels are responsible for conducting rapid risk assessments (RRA) of selected acute public health events.

This document describes the procedure of conducting an RRA using the "Rapid risk assessment of acute events of public health concern" template.

Depending on the outcome of the RRA, an immediate WHO **response** may be required and the event may be recommended for **grading** (3).

Objectives of Rapid Risk Assessment

- To evaluate the potential impact of an event on human health.
- To categorize the risk as low, moderate, high or very high, using the Hazard, Exposure and Context approach.
- To recommend specific actions for WHO based on the risk assessment finding, including whether the event should be graded.
- To identify relevant communications/ information products to be shared, and to which stakeholders

Elements for considering events for rapid risk assessment

The below elements are intended to guide the initiation of an RRA and are not exhaustive.

- Insufficient information to adequately assess the situation with a high level of uncertainty
- Event of unknown aetiology

- Event involving multiple countries
- Highly dangerous pathogen
- Occurring in a vulnerable country, setting or context
- WHO support/response anticipated/required (preliminary step for grading as per the Emergency Response Framework (ERF)
- The pertinence of carrying out an RRA should be systematically considered for all events meeting criteria for notification in the International Health Regulations (IHR) Annex 2

If the necessary elements for conducting an RRA are not met, the iterative routine initial risk assessment will proceed as additional information becomes available, and an RRA may be initiated at a later stage.

Conducting the rapid risk assessment

Overview

The RRA template is structured to have the **summarised key information presented on the front page**; the process of conducting the risk assessment does not follow the template sequentially and the section below aims to guide you on how the template is used.

Structure of rapid risk assessment template

- **Section 1 – Summary**
  - Gives a concise overview of the risk of an event, only including the most pertinent information:
    - Date(s) and version(s) of assessment
    - Overall risk
    - Risk statement with a brief summary of justification
    - Assessment of specific risk questions
    - Major recommended actions by the risk assessment team
    - Recommended communications regarding the assessed event
- **Section 2 – Supporting information**
  - Provides the most relevant background of the event required to inform the risk assessment, including a brief assessment of
    - Hazard
    - Exposure
    - Context
  - Lists immediate actions to be taken following the RRA, identifies the persons who conducted the RRA and provides a list of reference documents supporting the RRA.

References

1. World Health Organization. Implementation of Early Warning and Response with a focus on Event-Based Surveillance. Geneva: World Health Organization; 2014. 59 p. p.
2. World Health Organization. Rapid risk assessment of acute public health events. Geneva: World Health Organization; 2012. p. 44
3. World Health Organization. Emergency response framework. 2nd ed. Geneva: World Health Organization; 2017.

Appendix 1: Filling in the rapid risk assessment template

Steps of the rapid risk assessment

1. **Convene team to perform rapid risk assessment**
   Public Health Intelligence (PHI) teams across the three levels of the organization, as well as technical teams in the subject area and allied expertise as well as pillars of the response team need to be convened for a holistic rapid risk assessment.
2. **Name event** (section 1)
   - 2.1. Include pathogen name if known, otherwise describe the syndrome
   - 2.2. Include the name of the affected country (or countries)
3. **Complete the date and version section** (section 1)
   - 3.1. Date and version of current assessment: the date of finalising the risk assessment and the version of the assessment
   - 3.2. Date of previous assessment(s): If risk assessments for this event were conducted before, record the date(s) and the version number
   - 3.3. Tick which WHO level is leading on this risk assessment
4. **Gather and discuss available supporting information** (section 2)
   This may already be drafted before the risk assessment by the PHI teams at the headquarters (HQ), WHO Regional Office (RO), with support of WHO Country Office (CO) levels is convened. The aim is to keep this section brief and pertinent. Maps, graphs, and tables should not be included, as the risk assessment is not intended to replace a situation report. These materials are provided in the annex of the RRA. For further direction on what to include for hazard, exposure and context, refer to Appendix 4 in this document and to the "Rapid Risk Assessment of Acute Public Health Events" (2) guideline.
   - 4.1. **Hazard**
     - 4.1.1. Identify the hazard(s) that may be causing the event
     - 4.1.2. Review key information about the potential hazard(s)
     - 4.1.3. Rank the potential hazards when more than one is considered a possible cause of the event
   - 4.2. **Exposure**
     - 4.2.1. Brief update on the epidemiology (number of cases and deaths reported, the affected area, affected persons (age/sex, gender, occupation or any other relevant characteristics)
     - 4.2.2. Information on previous outbreaks
     - 4.2.3. Number of people or groups known or likely to have been exposed
     - 4.2.4. Number of exposed people or groups who are likely to be susceptible
   - 4.3. **Context**
     - 4.3.1. Consider social, technical/scientific, economic, environmental, ethical and policy/political (i.e. STEEEP) factors that may influenza the public health impact
     - 4.3.2. State the quality of the evidence used for the RRA
     - 4.3.3. Consider:
       - 4.3.3.1. Capacities → these can decrease the likelihood and the consequences of the event
       - 4.3.3.2. Vulnerabilities → these can increase the likelihood and the consequences of the event

Steps of the risk assessment

5. **Draft a response to the minimum set of risk questions as indicated on the template** (section 1)
   - 5.1. Assess these questions in the current situation and if no further interventions are implemented than those already available/ accessible at this point in time.

5.2. **Potential risk for human health**; consider:
This question focuses on the severity of the event
5.2.1. The hazard: morbidity, case fatality rate
5.2.2. The exposure
5.3. **Risk of event spreading;** consider**:**
5.3.1. Where is this event occurring?
5.3.2. Basic reproductive rate
5.3.3. Population mobility
5.4. **Risk of insufficient control capacities with available resources;** consider**:**
5.4.1. This question aims to identify if the country is able to implement control measures.

6. **Assessment of risk questions** (section 1)
6.1. Based on the hazard, exposure and context, fill in the table regarding each risk question
7. **Identify any additional risk questions** (section 1)
7.1. The team will discuss and add any additional question as required
7.2. Refer to "Rapid Risk Assessment of Acute Public Health Events" (2012) for detailed guidance on formulating risk questions
8. **Overall risk** (section 1)
8.1. Decide on the overall risk of the event by using a risk matrix (Appendix 6) and an interpretation of the overall risk is suggested (Appendix 7)

9. **Confidence in available information** (section 1)
9.1. This is not dependent on the assessment of the risk but on the reliability of the information on which the assessment was based.
10. **Risk statement** (section 1)
10.1. The risk statement will give a brief justification of why the overall risk categorisation was chosen.
11. **Actions to be taken** (section 1)
11.1. Agree on and tick the actions to be taken;
11.2. Possible actions include one or more of the following:
- Refer the event for review by IHR Emergency Committee for consideration as a Public Health Emergency of International Concern by Director-General (Art 12, IHR)
- Immediate activation of ERF response mechanism (IMS) as urgent public health response is required
- Recommend setting up of grading call
- Immediate support to response, but within the limit of Contingency Fund for Emergencies (CFE; no grading recommended at this point in time)
- Rapidly seek further information and repeat RRA (including field risk assessment)
- Support Member State to undertake preparedness measures
- Continue to closely monitor
- No further risk assessment is required for this event.
- Return to routine

12. **Agree on communications to be shared** (section 1)

Appendix 2: Brief guidance on hazard, exposure and context

See also "Rapid risk assessment of acute public health events" 2012 guideline (2) and "Implementation of Early Warning and Response with a focus on Event-Based Surveillance" 2014 guideline (1).

This section is meant to assist with identifying the information to be recorded in the hazard, exposure and context section of the risk assessment. Depending on the event, different information may need to be considered. This brief guidance includes excerpts from the 2012 guidelines but is not exhaustive. For a detailed description of hazard, exposure and context, please refer to the 2012 guidelines (2).

Hazard Assessment	
Definition	Hazard assessment is the identification of the characteristics of a public health hazard and the associated adverse health effects. Hazards can include biological, chemical, radiological and nuclear events.
Process	▪ Straightforward when laboratory confirmation of the causative agent is available, or when the event is easily characterized on clinical and epidemiological features. ▪ In all other cases, hazard assessment starts with listing possible causes on the basis of: the initial description of the event; known burden of disease in the affected community; and type and distribution of existing hazards (e.g. the number and location of chemical plants and the chemicals they use).

Exposure assessment	
Definition	Exposure assessment is the evaluation of the exposure of individuals and populations to likely hazards. The key output of the assessment is an estimate of the: ▪ Number of people or group known or likely to have been exposed; and ▪ Number of exposed people or groups who are likely to be susceptible (not immune).
Process	Information required to evaluate exposure includes: ▪ Mode of transmission (e.g. human-to-human: droplet spread, sexual transmission; animal-to-human; occupational risk); ▪ Information related to the vector (e.g. distribution, density, infectivity) and/or animal hosts (density, prevalence, existing control programmes); ▪ Incubation period (known or suspected); ▪ Estimation of the potential for transmission (e.g. R0 basic reproduction number); ▪ Immune status of the exposed population; and ▪ Dose of exposure (e.g. amount of ingested/absorbed/inhaled heavy metals, salmonella bacteria, radionuclides) and duration of exposure.

Context assessment	
Definition	Context assessment is an evaluation of the environment in which the event is taking place. This may include the physical environment such as climate, vegetation, land use (e.g. farming, industry) and water systems and sources, as well as the health of the population (e.g. nutritional status, disease burden and previous outbreaks), infrastructure (e.g. transport links, health-care and public health infrastructure), cultural practices and beliefs.
Process	Context assessment should consider all factors that can affect the risk of the event. These factors may be social, ethical, technical, scientific, economic, environmental and political. They will include the surveillance system's capacity to detect cases, health-seeking behaviour of the individual groups, the prevalence of malnutrition, environmental conditions favouring the multiplication of vectors and the presence of animal hosts. For instance: ▪ For measles, the risk of expansion of an outbreak after the detection of the event will depend upon factors including the immunization coverage of the population; the capacity to quickly organize a mass vaccination campaign if the coverage is too low; the local conditions of hygiene; the access to health care; the capacity to detect and isolate cases; and population behaviour. ▪ For an event such as contamination of a river by a chemical agent, the risk of human intoxication will depend on factors such as local practices about water use; season (cold or hot, rainy or dry); river flow; capacity to broadcast messages of prevention; and acceptability of control measures.

Appendix 3: Guide on categorizing the risk based on likelihood and consequences for the different risk questions

See also "Rapid risk assessment of acute public health events" 2012 guideline (2).

Likelihood

Level	Definition
Almost certain	Is expected to occur in most circumstances (e.g. probability of 95% or more)
Highly likely	Will probably occur in most circumstances (e.g. a probability of between 70% and 94%)
Likely	Will occur some of the time (e.g. a probability of between 30% and 69%)
Unlikely	Could occur some of the time (e.g. a probability of between 5% and 29%)
Very unlikely	Could occur under exceptional circumstances (e.g. a probability of less than 5%)

Consequences

Level	Definition
Severe	• Severe impact on a large population or at-risk group • Severe disruption to normal activities and services • A large number of additional control measures will be needed and most of these require significant resources to implement • Serious increase in costs for authorities and stakeholders
Major	• Major impact on a small population or at-risk group • Major disruption to normal activities and services • A large number of additional control measures will be needed and some of these require significant resources to implement • Significant increase in costs for authorities and stakeholders
Moderate	• Moderate impact as a large population or at-risk group is affected • Moderate disruption to normal activities and services • Some additional control measures will be needed and some of these require moderate resources to implement • Moderate increase in costs for authorities and stakeholders
Minor	• Minor impact on a small population or at-risk group • Limited disruption to normal activities and services • A small number of additional control measures will be needed that require minimal resources • Some increase in costs for authorities and stakeholders.
Minimal	• Limited impact on the affected population • Little disruption to normal activities and services • Routine responses are adequate and there is no need to implement additional control measures • Few extra costs for authorities and stakeholders

Appendix 4: Two matrices guiding the categorization of likelihood and consequences to determine risk

See also "Rapid risk assessment of acute public health events" 2012 guideline (2).

Figure 3a: A risk matrix showing clearly delimited boundaries between categories

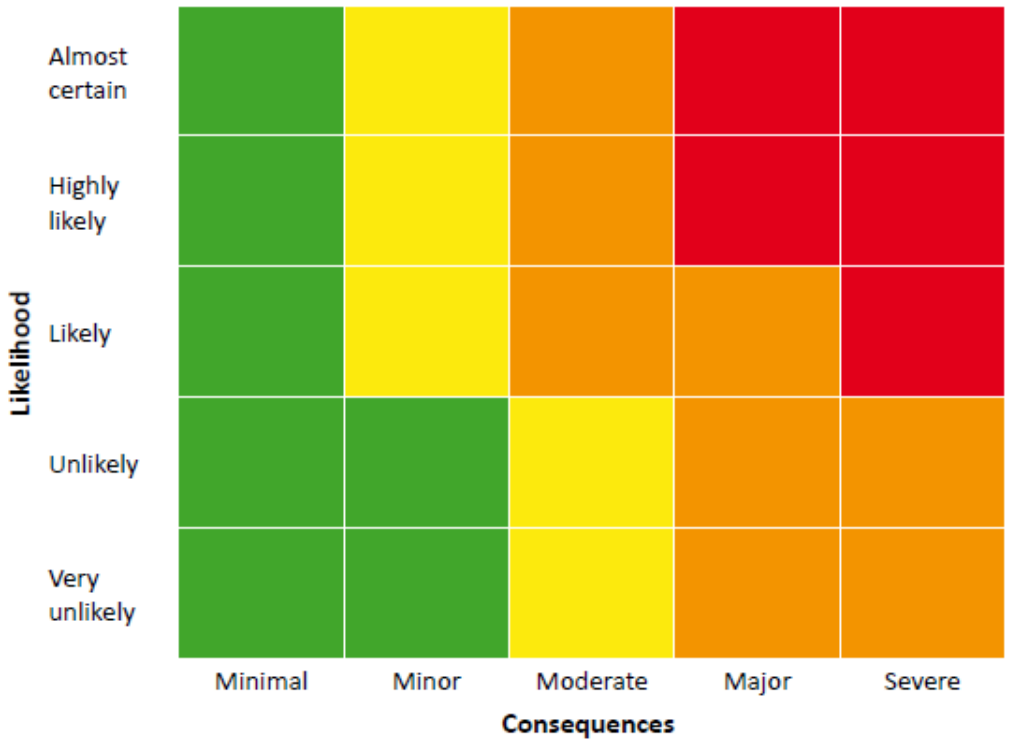
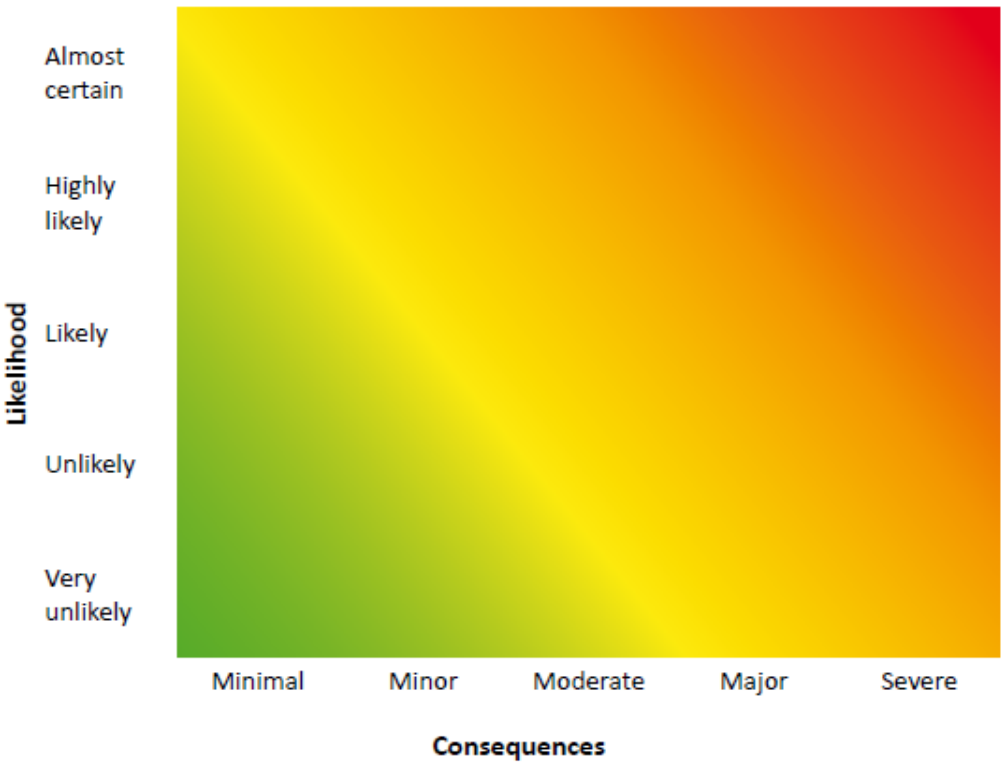


Figure 3b: A risk matrix without clearly delimited boundaries between categories



Appendix 5: Suggested interpretation of overall risk

See also "Rapid risk assessment of acute public health events" 2012 guideline (2) .

Table 6: How to read Figures 3a and 3b[6]

	Level of overall risk	Actions
	Low risk	Managed according to standard response protocols, routine control programmes and regulation (e.g. monitoring through routine surveillance systems)
	Moderate risk	Roles and responsibility for the response must be specified. Specific monitoring or control measures required (e.g. enhanced surveillance, additional vaccination campaigns)
	High risk	Senior management attention needed: there may be a need to establish command and control structures; a range of additional control measures will be required some of which may have significant consequences
	Very high risk	Immediate response required even if the event is reported out of normal working hours. Immediate senior management attention needed (e.g. the command and control structure should be established within hours); the implementation of control measures with serious consequences is highly likely