EXERCISE 1: DISEASE OUTBREAK RRA
and
EXERCISE 2: CHEMICAL INCIDENT RRA

Episouth training module
programme 2013

Objectives of the Practical Exercises

- To summarize the risk assessment (RRA) process
- To assess the Public Health Event Impact in your country and the response according to the level of risk.
  - For reducing or prevent disease in affected populations
  - For reducing negative social and economic consequences

Objectives of the Practical Exercises

- At the end of the exercise we will be able to:

- Recognize if it is an immediate risk and action is needed
- Assemble the risk assessment team and define the scope of the RRA
- Collect the technical information for the risk assessment
- Appraise quality of this information
- Estimate the level of risk
- Identify recommended public health measures according to the level of risk

Question 1: Given the information above, what is the first step in the analyses of the current situation?

1. **Detection and confirmation of the PHE-hazard**
   - **Is it a real event?**

2. **Risk identification and triage of the incoming signals:**
   - **Is it an important event?**

Question 2: What are the first steps for the RRA?

3. To Assemble the RA Team

4. To define the scope for this RRA

Formulating risk questions

- **Who** is likely to be affected? Specific groups at risk?
- **Which hazard** could cause this event?
- What is the **likely** exposure to hazard?
- **When, why and how** a population might be adversely affected by the exposure to a hazard?
- What is the likelihood of exposure to the hazard **if no action is taken**?
- What are the **consequences** (type and magnitude) to public health if the event were to occur **in your country?**
- **Level of the risk accepted** by decision-makers, other stakeholders and society (the acceptable risk)
- The **timing of the risk assessment** during the course of the event

Question 3: What is the technical information you need to assess the probability of occurrence in your country and the public health impact?

1. **Indentify the hazard risk and performed a structured literature search for collecting information →**

    1. **hazard assessment,**
    2. **exposure assessment,**
    3. **and context assessment**

2. **Appraisal evidence – Identify the gaps of knowledge**

Formulating the risk questions – chemical incident

- What is the identity of the chemical of concern?
- Is the chemical potentially hazardous to humans?
- What properties of the chemical have the potential to cause adverse health effects?
- Do guidance or guideline values from international organizations exist for the chemical?
- What assumptions about exposure and dose are incorporated into guidance or guideline values for the chemical?
- Do those assumptions reflect conditions specific to the local situation?
- In what ways could people come into contact with the chemical?
- How much exposure is likely to occur?
- For how long is exposure likely to occur?
- What metric of exposure is appropriate for characterizing health risks?
- How does the estimated exposure compare with the health-based guidance or guideline values?

Perform a structured literature search/ systematically collecting information (stage 2).

Where?

- Textsbooks
- Key references texts: including similar events
- Academic and journal articles → Bibliographics database: Pubmed, Cocrhane, Embase, web of Knowledge (defined the question we need, search terms, search strategies…)
- Technical protocols
- Specific websites and grey literature

Appendix 3 for infectious disease:

http://www.ecdc.europa.eu/en/publications/Publications/1108_TED_Risk_Assessment_Methodology_Guidance.pdf

Perform a structured literature search/ systematically collecting information (stage 2).

Where? For chemical toxic

- CDC: Agency for toxic substances and disease registry: http://www.atsdr.cdc.gov/
- CDC: Public health statement for Benzene: Public Health Statement for Benzene
- http://www.atsdr.cdc.gov/phs/phs.asp?id=37&tid=14
- EPA, US Environmental Protection Agency Integrated Risk Information System (IRIS): http://www.epa.gov/iris/
- International Agency for Research on Cancer: http://www.iarc.fr
- The National Institute for Occupational Safety and Health (NIOSH) http://www.cdc.gov/NIOSH/
- International Chemical Safety Cards: http://www.cdc.gov/niosh/ipcs/icstart.html

Question 4: Risk characterization, Which is the current level of risk related to the event for your country?

Risk= **likelihood** **x** **Impact**

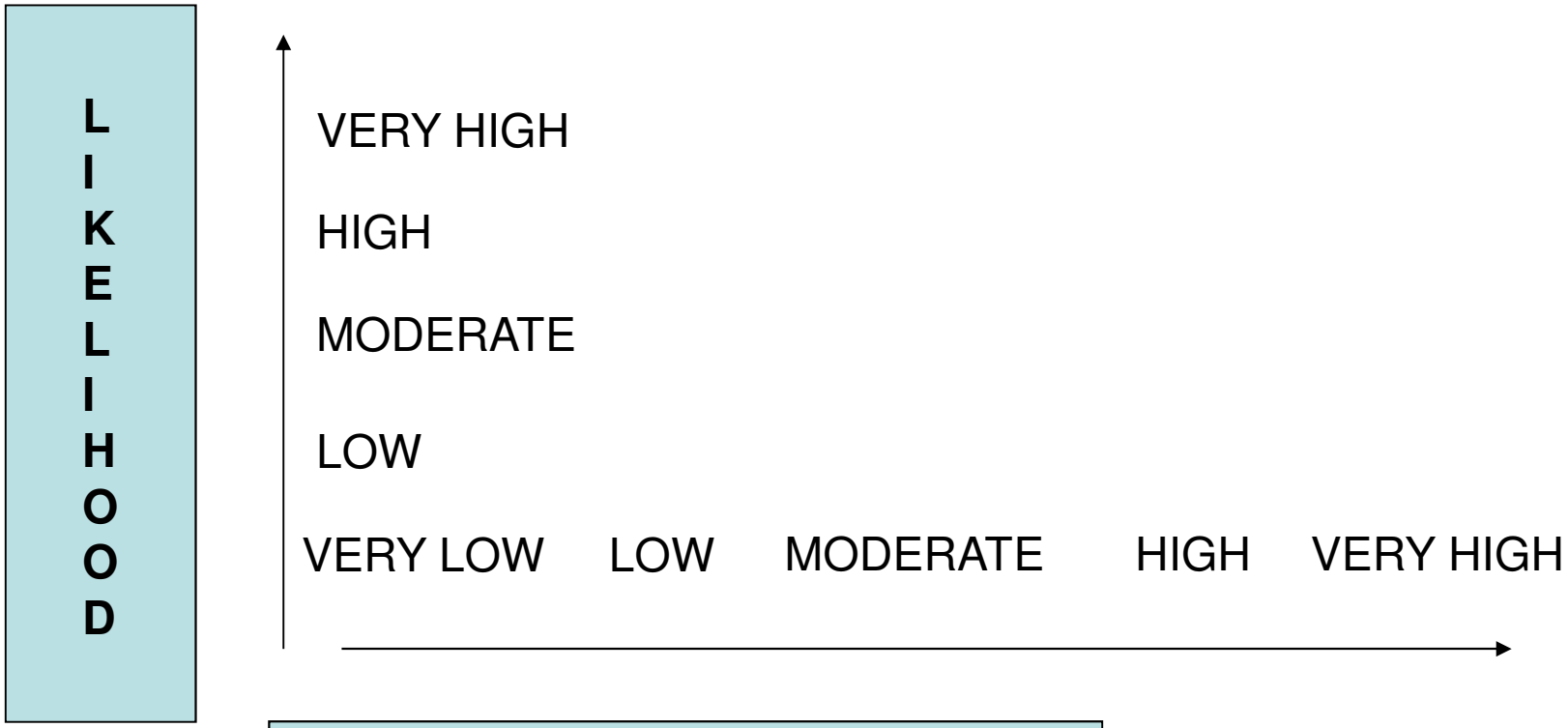
- Potential national transmission
  - Hazard Exposure
  - Capacity of the hazard for adverse health effect
  - Population Susceptibility
- Potential International transmission
  - Routes of introductions
  - Transmission and exposure

- The threat is unusual or unexpected
- Availability of interventions
- Severity of the disease

Contextual Factors

Question 4: Risk characterization, Which is the current level of risk related to the event for your country?

USEFUL TOOL TO ASSIGN A LEVEL OF RISK - MATRIX

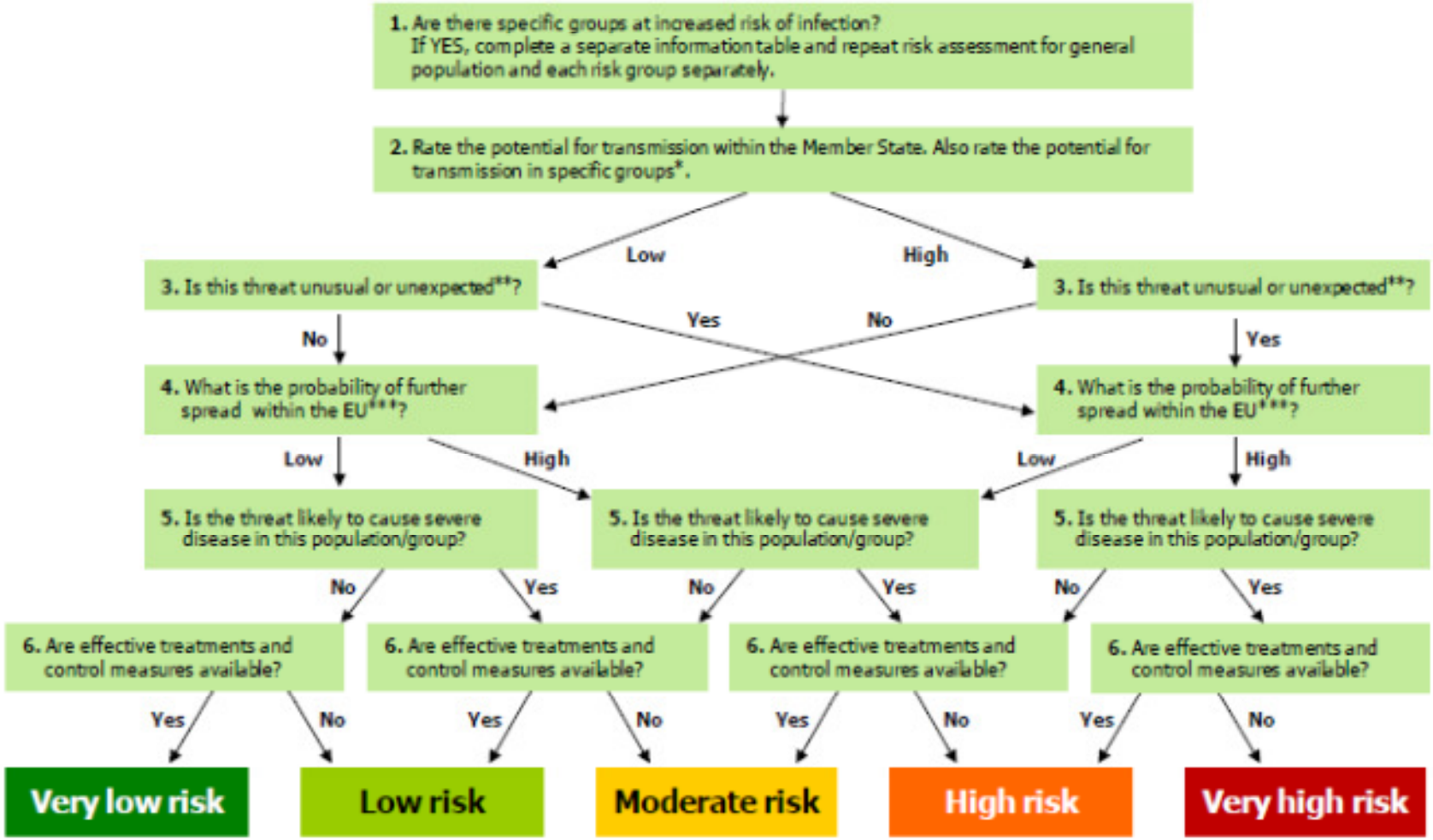


IMPACT OR CONSEQUENCES

WHO

Figure 1: Single algorithm combining probability and impact resulting in single overall risk level (option 1)

If in doubt (e.g. due to insufficient evidence), select the higher-risk option.



ECDC

Question 5: What are the actions and recommendations for the local, national or international level?

- Public Health actions
  - Control measures
  - Operational communication risk to
    - Stakeholders
    - Public Health Unit
    - Health services centers
  - Communication to the public

- Update the risk assessment