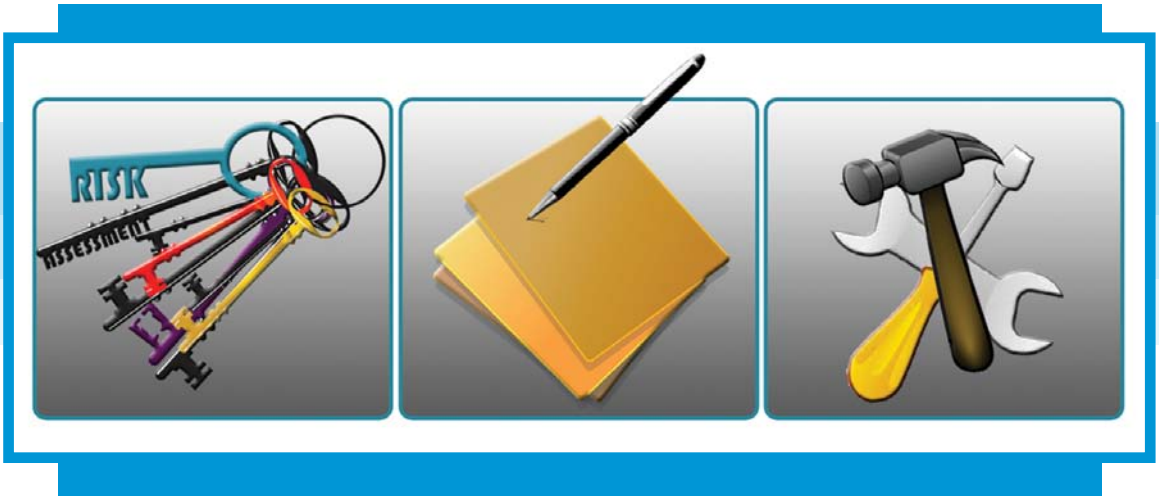
Meeting Report

Informal Consultation on Tools for the Assessment of Risk for Acute Public Health Events in the Western Pacific Region



Manila, Philippines
21-22 June 2011

World Health Organization
Western Pacific Region

WORLD HEALTH ORGANIZATION

REGIONAL OFFICE FOR THE WESTERN PACIFIC

REPORT

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NOTE

The views expressed in this report are those of the participants in the Informal Consultation on Tools for the Assessment of Risk for Acute Public Health Events in the Western Pacific Region and do not necessarily reflect the policies of the Organization.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for governments of Members States in the Region and for those who participated in the Informal Consultation on Tools for the Assessment of Risk for Acute Public Health Events in the Western Pacific Region, which was held in Manila, Philippines, from 21 to 22 June 2011.

CONTENTS

Keywords:

Public health, Risk assessment, Risk Management; Disaster Planning

SUMMARY

An Informal Consultation on Tools for the Assessment of Risk for Acute Public Health Events in the Western Pacific Region was held in Manila, Philippines, from 21 to 22 June 2011. Experts in surveillance and risk assessment reviewed the draft tools that had been developed for assessing risk in key activity areas of surveillance and response for acute public health situations. In addition, they discussed the challenges presented in establishing appropriate guidance for categorizing the likelihood of occurrence and consequences of acute public health events.

Fourteen people attended the informal consultation. Their expertise covered risk assessment in public health and the animal sector. Participants had extensive national and international experience in disease surveillance, humanitarian emergencies, and managing risk in public health in both developing and developed countries. The WHO Secretariat consisted of representatives from Headquarters, the Western Pacific Regional Office, and Country Offices in the Lao People's Democratic Republic and Viet Nam.

The informal consultation consisted of six sessions. Two sessions were held on the opening day, one that described how risk assessment is part of an overall strategy for emerging diseases in the Asia Pacific region, and another that provided an overview of the current state of development of tools for risk assessment in acute public health events. These sessions also confirmed the need for a set of simple tools for front-line staff to assist them in undertaking systematic documented risk assessments for acute public health events. The use of a common methodology across the Member States in the Region would assist in all parties understanding the outcome of risk assessments when they were undertaken.

During the third session, which discussed four simple tools for assessing risk for acute public health events, participants provided valuable reflection and input into the drafted tools. The four tools covered event screening, rapid risk assessment, emerging infectious disease risk assessment and humanitarian emergency risk assessment.

The three remaining sessions stimulated discussion of the use of the matrix in deriving overall risk of an acute public health event, and the development of practical indicators to grade consequences and likelihoods of acute public health events. Discussions on phrasing the risk question identified a need to understand the context of the situation, the population affected and type of hazard that was causing the risk. It was also recognized that phrasing the risk question was critical to the ability of managers to ascertain the most effective intervention for reducing the risk to the population. These items would need to be discussed by individual Member States prior to assessing risk for any particular event.

The meeting was an excellent opportunity to fine-tune the four tools that had been drafted for assessing risk for acute public health events and to gain insight into the challenges presented in risk assessment methodology. Agreement and support were obtained for the approach and methods used in the four tools. Furthermore, it was recommended to publish the modified tools in an electronic toolbox for easy access by Member States. A suggestion was also made to add a fifth tool for assessing the public health situation for mass gatherings.

1. INTRODUCTION

Through the Asia Pacific Strategy for Emerging Diseases, or APSED (2010), the Western Pacific Regional Office of the World Health Organization has recently re-affirmed its commitment to meeting the challenges of emerging diseases that pose serious threats to regional and global health security. Risk assessment is a key part of this strategy and is nested within the surveillance and response focus area.

Preliminary work to establish a systematic approach to the assessment and management of risks associated with all-hazards acute public health events in Member States of the Western Pacific Region started in 2010. That year, three regional workshops on the theoretical and conceptual approaches to risk assessment were held at the national Ministry of Health level. Since November 2010, the WHO Regional Office has been engaging with Alert and Response Operations, Department of Global Outbreak Alert and Response at WHO Headquarters in Geneva to assist in the development of a manual that would provide a similar multi-regional approach to the assessment of risk in all-hazards acute public health events.

Practical tools have been drafted to assist with the pragmatic roll-out of the assessment of risk for public health events occurring within the scope of the Division of Health Security and Emergencies for the Regional Office for the Western Pacific. An informal consultation with experts who have regional experience in risk assessment—either all-hazards or emerging disease acute public health events—was conducted on 21 and 22 June 2011 in Manila, Philippines. This report documents the proceedings of the two-day consultation where the tools were reviewed to ensure that a regionally appropriate systematic approach to risk assessment can be offered to all Member States.

1.1 Objective

The objective of this informal consultation was to discuss and finalize the draft tools to enable implementation of risk assessment for acute public health events in the Western Pacific Region.

1.2 Session 1: Welcome and opening remarks

Dr Takeshi Kasai, Director of the Division of Health Security and Emergencies, WHO Western Pacific Regional Office

Dr Kasai welcomed participants to the meeting. He stressed the importance of the informal consultation as an opportunity to get expert advice on risk assessment for acute public health events.

Following the success in building core capacity for Member States through APSED (2005), risk assessment was identified as a key component for moving forward in the revised APSED. This component not only serves as a core part of the focus area for surveillance, risk assessment and response, but also connects other focus areas that form APSED (2010), such as encouraging better information collection through indicator-based surveillance and laboratory notifications of disease.

Member States have expressed a need for standardized methods to ensure a common understanding of methodology and outputs when assessing information. Creating appropriate risk assessment guidance tools will promote one standardized method around the globe. This consultation is an opportunity for WHO to learn whether they are going in the right direction, and give advice on technical issues to improve the tools that are being developed.

1.2.1 Risk assessment in APSED (2010)

Dr Chin Kei Lee, WHO Western Pacific Regional Office

APSED was adopted to strengthen systems in Member States of the South-East Asia and Western Pacific Regions of WHO, in preparation for public health emergencies. Strategies implemented through APSED (2005) and APSED (2010) focus on different areas, and go well beyond developments associated with the core capacity requirements of the International Health Regulations, or IHR (2005).

Through APSED, the Region has experienced a 7.3% improvement for detecting and reporting outbreaks over the last five years. As published in the *Proceedings of the National Academy of Sciences*, the Western Pacific Region was the only WHO Region with a statistically significant improvement in outbreak detection.

APSED not only addresses emerging diseases but also provides a common framework for Member States and WHO to use for reaching common regional goals. Following the success of the 2005 strategy, the scope of APSED was broadened in 2010 to include public health entry points, regional preparedness, and monitoring and evaluation. Focus area 1 (originally surveillance and response) was also broadened to include risk assessment. Risk assessment provides the link between event-based surveillance, indicator-based surveillance and response.

WHO and Member States are currently developing workplans to assist in implementing APSED (2010) over the next five years. The risk assessment workplan has three stages: (1) identify people and opportunities; (2) develop human capacity, embed risk assessment into routine functions; and (3) use risk assessment for management and response to diseases and other hazards using regional expertise.

APSED (2010) is underpinned by the legal binding of IHR (2005). It takes an all-hazards approach and is endorsed by Member States. At a meeting of the Technical Advisory Group for Emerging Infectious Diseases in July 2011, Dr Kasai hopes to get agreement on the use of the tools for risk assessment as part of the strategy for focus area 1.

1.2.2 Objectives and agenda

Dr Ruth Foxwell, WHO Western Pacific Regional Office

The objective of the meeting was to get agreement on four tools and functional areas for undertaking acute public health risk assessment that can be placed in an electronic toolbox available on the Web. These tools would be made accessible to front-line staff in Member States to apply a standardized protocol when assessing risk. The four tools cover different areas and objectives. The toolbox will also provide links to comprehensive references for risk assessment for acute public health events and examples of decision-making assistance for use within the tools.

2. PROCEEDINGS

2.1 Session 2: Risk assessment for acute public health events

2.1.1 Overview of risk assessment in acute public health events and current draft manual on rapid assessment in the risk management of acute public health events

Dr Mike Nunn, Department of Agriculture Forestry and Fisheries, Australia

Little guidance is available on undertaking risk assessment for acute public health events. Currently, people do assess risk, but they are poor at sharing ideas and outcomes and tend to do it in silos. The solution is to have multidiscipline input and participation in training workshops. The approach so far has involved training programmes that present multiple scenarios, use hypothetical countries and ensure a consideration of more than the technical aspects in assessing the risks of a potential event. Social, technical, economic, environmental, ethical and political (STEEEP) considerations are necessary for establishing context and assessing risk. Information is often limited when considering an event; however, reporting to inform political leaders and media is required early and often.

During the training workshops, the following issues were encountered: linguistic uncertainty; being outside their comfort zones; focusing on small details instead of the big picture; being too technical; and fitting assumptions to the data rather than vice versa. It was emphasized that documenting decisions and recommendations is critical for monitoring and evaluation and can be used for self-improvement. Post-event review is powerful for junior staff.

A manual for rapid assessment in the risk management of acute public health events is currently being developed. Many disciplines use risk assessment and have documents, which, at the core, are the same (covering likelihood, consequences and confidence) though the details are different. The current draft manual is targeted at a broad audience, is all hazard, aims to complement existing hazard-specific guidance, and has a series of steps including: detection, confirmation, risk assessment (hazard exposure control) and risk characterization. While the manual's current approach to risk questions may need simplifying, common areas, such as the use of the risk matrix, will help multidisciplinary teams work together as they confer using the same terms. The manual takes care to emphasize that in risk assessment, one needs to be mindful of outrage and that subpopulations may have different risks.

The next steps in the development of the manual are to add case studies, insert checklists (simple tools), train the trainers, involve other disciplines and include existing courses.

During the discussion following the presentation, it was noted that a different approach was needed for humanitarian emergencies and that the approach in the manual was not appropriate for both all-hazard events and humanitarian emergencies. It was agreed that the form presented in the manual is similar to what is already being undertaken in some developed countries, but gives more structure. This structure ensures that documentation and risk assessment are done in a systematic and organized way. It forms a generic framework. If this framework is standardized, it will allow for comparison of lessons learnt following events.

A systematic framework also allows for documentation of a balanced approach to prepare for risk communication to politicians and a wider audience. It should allow for a balance between all aspects of STEEEP without compromising the technical messages.

A further challenge comes in finding out about events as early as possible (rather than the event being reported by media sources first). This can be a further challenge if the event is in another country.

2.1.2 General discussion on the value and use of risk assessment in public health work

All participants contributed to the discussion on their background, their experience in assessing risk, where they use risk assessment, why they think risk assessment is important and whether they currently use a systematic method for undertaking risk assessment.

Participants reported the variety of areas of their current use and methodologies for risk assessment as indicated below:

(1) It is used every hour to assess the level of response required for events reported through an SMS alert system. However, the method is not documented and is a series of flow charts in people's heads. It would be useful to have a standard method to follow.

(2) It is used for specific larger-scale issues such as for avian influenza, severe acute respiratory syndrome (SARS), polonium poisoning and floods in United Kingdom of Great Britain and Northern Ireland. No particular method has been followed, but the process is iterative as new information comes to hand.

(3) It is used as events occur, but there is an effort to try to incorporate risk assessment as a way of thinking in everyday work. The area where it is applied has been renamed as Public Health Intelligence. The Member State has also done an assessment for West Nile virus for planning purposes. No particular method has been applied and it would be good to have a structured approach.

(4) It is used in daily meetings with a multi-disciplined team to assess potential events that have been screened from the event-based surveillance system. More formal assessments are done to provide advice to senior management for specific issues. No current tools are used, although specific areas (food, radio-nuclear) have their own process that should be used in tandem with the current tools being considered.

(5) It is used for specific events in planning for mass gatherings, during significant outbreaks and after earthquakes to examine communicable diseases.

(6) It is used for assessing information as part of intelligence gathering for agriculture and veterinary issues. Multiple stakeholders (including industry) are involved during outbreaks. It is also used for forward planning for agricultural and veterinary import analysis. Methods used include Monte Carlo simulations, foresight tools and informal consultation. There is an effort to have a simple output—a plan on a page.

(7) It is used for outbreak situations in the WHO Country Office. It would be useful in planning for mass gatherings. Currently there is no documented systematic method.

(8) It is used for the assessment of significant events such as SARS and *E. coli* 0104:H4. There is a need for this type of assessment to assist in risk communication and understanding if legal instruments need adjusting to manage a situation. Methodology is through a system of media monitoring, consideration of information by an experienced person and higher managerial alert. Events such as the Japan triple event are dealt with as a separate issue.

(9) It is used in media monitoring and planning for mass gatherings. No systematic method is used for daily assessment of events; however, for larger events, methods such as initiating a meeting of the rapid assessment team (RAT) is undertaken to determine if further action needs to be taken. A management intervention team (MIT) is activated if iterative assessments and advice are required to manage interventions over a period of time.

(10) It is used in health assessments post humanitarian emergencies for planning in acute, early recovery, recovery and rehabilitation phases. These assessments systematically determine how the situation is evolving, the implications and the needs for response.

Reasons why participants thought risk assessment and a systematic method in public health were important included:

(1) for understanding the level of response required for the reporting of an event;

(2) for predicting and projecting how the event is evolving and the kinds of responses needed;

(3) for planning and management with respect to emerging infectious diseases and for mass gatherings;

(4) for providing an intellectual framework for what is done intuitively and a standardized method for allowing comparison of lessons learnt when monitoring and evaluating;

(5) for providing systematic documented evidence for reporting, which can balance technical and other areas of STEEEP;

(6) for quality improvement, prioritization of resources (human and financial) and information management/risk communication (for those above, below and at the same level of a team);

(7) for providing information on all aspects of a situation including technical, travel, trade and economy;

(8) for engaging partners, particularly from animal and environmental areas;

(9) for harmonizing tools for technical aspects and other needs to make a macro tool to assist in decision-making for operations manager; and

(10) for providing a common platform and standardized tools for understanding outcomes from other countries and comparing between assessments for lessons learnt.

Therefore, this session concluded that risk assessment is important for (1) operations response capacity, and (2) pre-emptive rather than reactionary management. Because the participants were unaware of any documented systematic method, they would greatly benefit from producing standardized tools. These tools can be used in tandem with existing area-specific methods.

2.2 Session 3: Regional experience and simple tools

Dr Ruth Foxwell, WHO Western Pacific Regional Office

A WHO meeting on indicator-based surveillance (IBS) and risk assessment in Kuala Lumpur, Malaysia, in June 2011 recommended that two manuals on risk assessment should be prepared: (1) a comprehensive manual focussing on context and theory; and (2) a simple manual with specific tools and standard operating procedures for front-line staff.

Specific tools are needed for different functions/objectives and are applicable for different circumstances. The most common uses for risk assessment in acute public health events are reporting events from event-based surveillance (EBS) sources, making rapid decisions for action when responding to outbreaks, preparing for response following humanitarian emergencies, and assessing policy intervention requirements, specifically for emerging infectious diseases. For each of these objectives, it can be seen that there are fundamental differences in the time frame of information input and implementation of actions, the people undertaking the risk assessment or preparing the information for senior management, and the category of hazard, be it single or multiple.

Currently, there are two comprehensive documents for risk assessment in acute public health: (1) a document on communicable diseases following humanitarian emergencies; and (2) a draft manual on rapid assessment of risk management in acute public health events.

2.2.1 General discussion on tools

Four front-line tools were presented to the group for their comments and approval. Participants commented on how much adaptation would be needed for introducing the methods to Member States and what adjustments would be required to benefit the tools. A synopsis of the outcomes is presented below.

(1) Event notification risk assessment

Description of the tool: This tool uses a series of key questions to help decide if information screened should be notified. The tool is an algorithm that is applied once per event, usually as soon as the information is first noticed. The tool covers all hazards, but should be used for only one hazard per event. The components are: potential notification, confirmation, risk assessment and risk communication.

Comments were as follows:

- *How much adaptation will be needed for Member States?*
  - The questions put forth by the tool for determining if an event should be reported are all appropriate. There is no need to add more questions; however, they may need to be adapted by each Member State (e.g. sensitivity required from the system).

- *Would the tool benefit from an adjustment at this point in time?*
  - The tool should be labelled as “event reporting” or “event-screening risk assessment”. The term “notification” should be reserved for IHR notifications.

Other comments:

- This tool would be useful for junior staff screening information from the media. Since some media reports may have incomplete information, however, senior staff may have to help answer questions not covered by the media report.
- Some Member States might use this format for either local or international events, not both, depending on their internal policies.
- Two types of reporting form (A and B) were presented as alternatives for recording information from the sources of information about the event. Both example A and example B may be used in event reporting, example A for the very initial information recording and example B once more information is acquired. While example B prompts people better, it may be time consuming to use it for every event.
- The questions used to indicate an event may be of public health importance do not need to be under two headings. Therefore combine into one set of questions.
- The tool can be used independently or nested as part of the rapid risk assessment tool. The way the tools interact needs clarification.
- The tool should specify the recipient of the reporting.
- A decision needs to be made by Member States as to whether this type of recording is done not only for reports or rumours that are deemed to be potential acute public health events, but also for those deemed not to be of interest. WHO Headquarters in Geneva has a process of checking all rumours and marking those that should be discarded and those that require further investigation. This information was previously shared, but not recently; however, they are moving towards sharing both positive and negative reports.

(2) Rapid Risk Assessment

Description: This tool is for used when rapid decisions for action are required. It is first used immediately after an event is reported and is repeated whenever new significant information comes to light. It involves the participation of a surveillance team and managerial staff. It is used for a single, known or unknown hazard. It has eight key steps and a template to guide the format for meetings and subsequent risk communication.

Comments were as follows:

- *How much adaptation will be needed for Member States?*
  - Very few or no changes would be required as it is a generic tool.

- *Would the tool benefit from an adjustment at this point in time?*
  - Regarding Step 5, the meaning of "event" depends on the risk questions and clarification is required. Therefore, removing "of the event occurring" may solve this issue. The description in the text of the document is clearer than that on the slide.
  - Inclusion of Steps 7 and 8 is controversial. Some consider that management and communication should be separate from assessment. In emerging infectious disease situations, it is usually people doing the rapid risk assessment who would suggest initial action as the rapid nature of this risk assessment is due to the need for rapid action.
  - A different approach may be required for consideration of known and unknown hazards, which might be addressed through use of tabular examples.
  - A glossary of terms should be provided either in the document with the tools or in the more comprehensive material.
  - More direct language would improve the tool.

(3) Emerging infectious disease risk assessment

Description: The amount of time available for this type of risk assessment is usually more generous than for a rapid risk assessment. Therefore, while the same eight steps are used as the rapid risk assessment, differences occur in the time available to research information for input, find the appropriate time for having experts to meet to consider the assessment and to implement the intervention measures.

Comments were as follows:

- *How much adaptation will be needed for Member States?*
  - None for the tool, but each assessment will have its own challenges determined by the risk question.

- *Would the tool benefit from an adjustment at this point in time?*
  - As this tool's steps are the same as those of the rapid risk assessment, we need to consider how to align the tools in a better way. Perhaps it is better to have one method section and an introduction that addresses the unique nature of each of the tools.
  - It is important to consider the different objectives of this tool and therefore, it may be advantageous to get more experience with this tool before finalizing the format for presentation.
  - Participants suggested finalizing the format after further use and said they would be happy with whichever format appeared most sensible.

(4) Humanitarian disasters risk assessment

Description: This tool is used post humanitarian emergencies for prevention, response and enhanced surveillance. The assessment would be done by the surveillance team and experts available at the time.

Comments were as follows:

- *How much adaptation will be needed for Member States?*
  - Examples given were very site specific. Therefore, disease categories will need to be altered depending on the setting (e.g. tropical countries would need to include vectorborne diseases).
- *Would the tool benefit from an adjustment at this point in time?*
  - The name should be changed to "humanitarian emergency risk assessment".
  - Vulnerability needs to be considered for humanitarian emergencies as the setting is extremely important for public health impact.
  - The tool assumes that the incidence of disease and the impact are inherently the same. However, one event may have different effects on different parts of the population (e.g. those in evacuation centres would have different risks than those in less affected areas). Therefore, state a risk question and be population specific when undertaking an assessment and reporting the results.

(5) Further tool development

Participants suggested developing a risk assessment tool for the health impacts of mass gatherings. It was proposed that the humanitarian emergency risk assessment tool could be adapted for this purpose once the four basic tools had been completed and launched.

2.2.2 Overall conclusions

Overall, participants generally accepted the four tools as presented, with the suggestion of incorporating the changes where appropriate. The tools can be stored into a toolbox and used as part of training, but not necessarily as a replacement for training. Member States should use these tools as guidance, for standard operating procedures once adapted as indicated to local needs. The tools fit well with other WHO activities in risk assessment and maintain a common philosophy, with a slightly modified approach.

2.3 Session 4. Use of the matrix for deciding the overall level of risk

Dr Mike Nunn, Department of Agriculture Forestry and Fisheries, Australia
Dr Babatunde Olowokure, WHO Viet Nam

Risk assessment is used intuitively and decisions are made based on a virtual risk matrix of likelihood and consequences. The level of acceptable risk differs between people, and people react differently if the risk is imposed or is something accepted by choice. In addition to this, the perception of risk varies by levels of unfamiliarity and dread.

"Outrage" is a term used in risk communication that is seen by some as being as real as the hazard and is part of risk. It is a challenge to have a group of people agree on the level of risk posed by an event and also to understand what each individual means by stating a particular level of risk.

The current draft WHO manual on rapid assessment in the risk management of acute public health events uses a 5x5 table to facilitate discussion of overall levels of risk. It splits the risk into four categories: extreme, high, moderate and low. Extreme may not often be used; however the category is useful for the "unthinkable".

2.3.1 General discussion on the clarity of the matrix

The following is a summary of the discussion points on the clarity of the 5x5 matrix:

- Users need to understand that actions are context dependent and that levels of risk are often about how quickly action needs to occur. The actions should be linked to speed of response and resource allocations.
- The current descriptors (low to extreme) are emotive and might be confused with likelihood and consequence descriptors. Therefore, consideration should be given to numeric or colour descriptors, accompanied by a code for indicating the lowest and highest risk categories.
- The current definitions used in "consequences" use very subtle English. The granularity between the five categories currently present may result in three useful categories once translation occurs into some Asian languages.
- Consequences are considered to be very context dependent and may need to be addressed by each individual Member State. Examples should be given to guide this process.

- As part of consequences, it needs to be understood that economic consequences may exceed public health consequences and this should be considered under indirect impacts.

2.4 Session 5. Practical indicators to grade consequences

Dr Ruth Foxwell, WHO Western Pacific Regional Office

Consequences due to a public health event can range from minimal to catastrophic. Consequences not only impact on health, such as the health of the population and the effects on health infrastructure and human resource, but also have wide-reaching effects on the economy through lack of workforce participation and also through political protectionism. A recent example of public health event that had economic consequences was the Russian Federation banning importation of salad goods from Spain and Germany early in the outbreak of *E. coli* 0104:H4.

In times of uncertainty, social reaction and political response (as well as political anticipation) become important factors in how public health officers consider situations. Unfortunately, these factors often become the most important factors. It is easy to drift away from common sense in order to find a middle ground that appeals to the political side of decision-making and management. Systematic, documented risk assessment assists in collating data, thoughts and expertise to provide an evidence base and logic for proportional response and communication.

Pragmatic grading of consequences that may result from a public health event is a challenge. No single factor that public health officers consider is clear cut—the loss of one life may not be considered a key factor from a population health perspective; however, it is an individual tragedy that can have a large political impact depending on who it is. One case of a disease is usually not considered a large impost; however, if that disease is polio in a polio-free region, the political impact will be high, and the health resource use will be high. Experience of past events and knowledge of health resources (system and human) are just two aspects that give senior management a “sixth sense” in predicting the level of consequences at any point in time when considering a public health event.

Participants were divided into two groups to develop examples for grading consequences from public health events. They were asked to document direct and indirect consequences (impact) separately to ensure full consideration of each type of consequence. Each group then described the events they considered, documented the risk question and developed an example set of consequences. A summary of challenges indicated below.

(1) Consequences for an event were thought to be contextual (including the size of the event). Therefore, it may be more useful to consider the categories of consequences that should be considered at each level of impact. The consequences will also depend on the stage of the event being considered.

(2) Categories that may be considered were identified as: (a) direct – spread (isolated case, clusters, epidemic), severity (case fatality rate), vulnerability of group affected; and (b) indirect - economic factors (cost of control, reduced earnings), health services (impact, resilience, length of response), restrictive control measures (personal versus social, e.g. school closures), political factors (who is in charge, political impact), availability of control measures, absenteeism, and legal aspects (new laws).

(3) An event may not cover the entire spectrum (minimal to catastrophic); however, participants agreed that having a spectrum of five categories was necessary to cover all circumstances.

(4) Member States may need to develop their own tables for level of consequences that are specific to their own circumstances – this may be different for province, district or local events. The tables may also be disease specific and will change over time. Examples of consequences should be provided as part of the toolbox.

(5) In less developed countries, consideration of consequences may rely on resource availability; whereas in developed countries, consequences may be more dependent on absolute numbers of deaths and morbidity. All countries are dependent on historical evidence and local knowledge of socioeconomic status and local behaviour/customs. This is particularly relevant when considering interventions.

The outcome of the discussion on consequences and the overall level of risk were considered to be dependent on the way the risk question was phrased. Therefore, a session was convened on the phrasing of the risk question. Outcomes of this discussion are summarized below.

(1) Risk questions can be phrased in different ways. It is important to always state the population being considered as part of the question or the scope of the risk assessment.

(2) A broad generic risk question can be phrased as: "What is the public health risk posed by exposure to *the hazard* to *population x* at *y point in time*?" This then needs to be accompanied by sub-questions on likelihood and consequences.

(3) When answering the generic question, sub-questions can be posed relating to incidence or spread of a disease within the overall geographic area being examined. The risk statement is then worded in the appropriate way. An example appears below.

Event: Dengue in non-endemic country. Single case with no travel history
Risk questions: What is the risk of spread, widespread outbreak, becoming endemic?

	Cases in 1 district	**Cases in >1 district**	**Widespread cases**
Likelihood	++++	+	±
Consequences (D / I)	+/+	++/+++	++++/+++
Matrix overall risk	++	+	+
Level of confidence	++++	+++	++++
Reason for confidence	Has occurred previously	There is geographic closeness	Vectors are present

(1) This model for risk questions could be used for examining the risk of a disease that is not endemic such as viral haemorrhagic fever, dengue or measles. It can also be used for cases with unknown hazard (including biological, chemical, radio-nuclear).

(2) For diseases that are endemic, the first column of questions may need to establish the current situation. Therefore, the column headings may be: risk related to current situation; risk of spreading to a city; risk of widespread cases (giving an indication of what widespread means) or risk of disease getting into export products.

2.5 Practical indicators to grade likelihood

Dr Ruth Foxwell, WHO Western Pacific Regional Office

Grading the likelihood that an event of significance to public health will occur is not an exact science. A lot of time has been spent modelling scenarios and possibilities. For infectious disease events, systematic collection of reliable data through indicator-based surveillance systems gives a certain capacity to prepare for the future, particularly for seasonal diseases. Having a good knowledge of levels of immunization and the capacity of the health system to do diagnosis and treatment in a timely manner can also assist in predicting outcomes to events that have been notified.

However, history is not a foolproof predictor of the future. Prior applications of preventive measures, such as vaccination, are not available for all diseases. To complicate matters even further, many notifications are for events for which the hazard is currently unknown. Therefore, the grading of likelihood that an event of greater size and impact would occur needs to be undertaken as part of risk assessment.

Participants were divided into two groups. They were asked to comment on the current qualitative descriptors found in the rapid risk assessment tool, and ascribe quantitative descriptors to the five levels of likelihood that an "event" would occur.

Both groups agreed that the qualitative descriptions did not to add value to the names given for each level of "likelihood". The two groups approached the quantitative descriptors differently, particularly at the extreme levels of "likelihood". After careful deliberation, the groups suggested the following possibilities: almost certain: 99% or 80%–95%; highly likely: 70%–98%; likely: 30%–70%; unlikely: 1%–30%; and rare: <1% or <5%.

There was no overall agreement on whether qualitative or quantitative descriptors were best. It may depend on the person undertaking the risk assessment to decide.

3. CONCLUSIONS AND RECOMMENDATIONS

(1) It was agreed that a systematic approach to risk assessment for acute public health events was needed. A common set of simple tools would assist in establishing a common methodology and similarity in documentation and reporting.

(2) The four tools discussed at the informal consultation was a basic set of tools for the most common situations where risk assessment is needed in acute public health settings. Suggestions for improvements will be incorporated into the tools prior to placing them into an electronic toolbox for easy access by Member States.

(3) Discussions on phrasing the risk question identified a need to understand the context of the situation, the population affected, and the type of hazard that was causing the risk. It was also recognized that phrasing the risk question is critical to the ability of managers to ascertain the most effective intervention for reducing the risk to the population.

(4) Grading of consequences is dependent on a country's socioeconomic, political, health and geographic context. However, grading can be guided through consideration of a set number of issues. These issues would need to be discussed by individual Member States prior to assessing risk for any particular event.

(5) A suggestion was also made to add a fifth tool for assessing the public health situation for mass gatherings.

ANNEX 1

W O R L D H E A L T H ORGANIZATION

ORGANISATIONS MONDIALE DE LA SANTE

REGIONAL OFFICE FOR THE WESTERN PACIFIC
BUREAU REGIONAL DU PACIFIQUE OCCIDENTAL

INFORMAL CONSULTATION ON TOOLS FOR THE ASSESSMENT OF RISK FOR THE ACUTE PUBLIC HEALTH EVENTS IN THE WESTERN PACIFIC REGION

WPR/DSE/ESR(06)/2011/IB/2
20 June 2011

Manila, Philippines
21 – 22 June 2011

ENGLISH ONLY

INFORMATION BULLETIN NO. 2

LIST OF TEMPORARY ADVISERS, AND SECRETARIAT

1. TEMPORARY ADVISERS

Dr Shuk Kwan CHUANG, Consultant Community Medicine, Communicable Disease, Department of Health, 3/F 147C Argyle Street, Kowloon, Hong Kong, Tel. No.: (852) 2125 2200 Fax No.: (852) 2574 2113, E-mail: sk_chuang@dh.gov.hk

Dr Lyn JAMES, Director, Office of the Deputy Director of Medical Services (Public Health), Public Health Group, Ministry of Health, Singapore, Republic of Singapore, Tel. No.: (65) 6325 8347, Fax No.: (65) 6325 1168, E-mail: lyn_james@moh.gov.sg

Dr Sovann LY, Deputy Director, Department of Communicable Disease Control, Ministry of Health # 151-153 Kampuchea Krom Avenue, Phnom Penh, Cambodia, Tel. No.: (855) 1282 5424 Fax No.: (855) 880 441, E-mail: sovann_ly@online.com.kh

Dr Michael John NUNN, Principal Scientist (Animal Biosecurity), Australian Government Department of Agriculture, Fisheries and Forestry, GPO Box 858, Canberra ACT 2601, Australia, Tel. No.: (612) 6272 4036, Fax No.: (612) 6272 3399, E-mail: Mike.Nunn@biosecurity.gov.au

Ms Rhonda OWEN, Director, Vaccine Preventable Diseases Surveillance Section, Communicable Disease and Surveillance Branch, Office of Health Protection, Department of Health and Ageing, GPO Box 9848, Canberra ACT 2601, Australia, Tel. No.: (612) 6289 2740, Fax No.: (612) 6289 2600, E-mail:Rhonda.Owen@health.gov.au

Annex 1

2. SECRETARIAT

WHO/WPRO

Dr Takeshi KASAI, Director, Division of Health Security and Emergencies,
World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila
Philippines, Tel. No.: (632) 528 9730, Fax No.: (632) 521 1036, E-mail: kasait@wpro.who.int

Dr Chin-Kei LEE, Team Leader, Emerging Disease Surveillance and Response,
World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932,
1000 Manila, Philippines, Tel. No.: (632) 528 9944, Fax No.: (632) 521 1036
E-mail: leec@wpro.who.int

Dr Tamano MATSUI, Medical Officer, Emerging Disease Surveillance and Response
World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932
1000 Manila Philippines, Tel. No.: (632) 528 9828, Fax No.: (632) 521 1036
E-mail: matsuit@wpro.who.int

Dr Alice Ruth FOXWELL (Responsible Officer), Epidemiologist, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932
1000 Manila, Philippines, Tel. No.: (632) 528 9916, Fax No.: (632) 521 1036,
E-mail: foxwella@wpro.who.int

Dr Arturo PESIGAN, Technical Officer, Emergency and Humanitarian Action, Division of Health Security and Emergencies, World Health Organization, Regional Office for the Western Pacific
P.O. Box 2932, 1000 Manila, Philippines, Tel. No.: (632) 528 9810, Fax No.: (632) 521 1036
E-mail: pesigana@wpro.who.int

Ms Jennifer BISHOP, Technical Officer in Food Safety, World Health Organization, Regional Office for the Western Pacific, PO Box 2932, 1000 Manila, Philippines, Tel. No.: (632) 528 9862
Fax No.: (632) 521 1036 or 526 0279, E-mail: bishopj@wpro.who.int

Dr David SNIADACK, Acting Team Leader, Expanded Programme on Immunization, Division of Combating Communicable Diseases, World Health Organization, Regional Office for the
Western Pacific, P.O. Box 2932, 1000 Manila, Philippines, Tel. No.: (632) 528 9748
Fax No.: (632) 521 1036, E-mail: sniadackd@wpro.who.int

WHO/LAOS

Dr Francette DUSAN, Zoonotic Diseases Epidemiologist, Emerging Disease Surveillance and Response, Office of the WHO Representative in the Lao People's Democratic Republic
World Health Organization, 125 Saphanthong Road, Unit 5, Ban Saphangthongtai, Sisattanak District
Vientiane, Lao People's Democratic Republic, Tel. No.: (856) 2135 3902,
Fax No.: (856) 2135 3905, E-mail: dusanf@wpro.who.int

Annex 1

WHO/VIET NAM

Dr Babatunde OLOWOKURE, Epidemiologist and Team Leader, Communicable Disease Surveillance and Response, Office of the WHO Representative in Viet Nam
63 Tran Hung Dao Street, Hoan Kiem District, Ha Noi, Viet Nam, Tel. No.: (844) 943 3734
Fax No.: (844) 943 3740, E-mail: olowokureb@wpro.who.int

WHO/HQ

Dr Thomas GREIN, Coordinator, Alert and Response Operations, Global Alert and Response
World Health Organization, 20, Avenue Appia-CH 1211, Geneva, Switzerland,
Tel. No.: (4122) 791 1652, Fax No.: (4122) 791 1397, E-mail: greint@who.int

ANNEX 2

WORLD HEALTH ORGANIZATION | **ORGANISATION MONDIALE DE LA SANTE**

REGIONAL OFFICE FOR THE WESTERN PACIFIC
BUREAU REGIONAL DU PACIFIQUE OCCIDENTAL

INFORMAL CONSULTATION ON TOOLS AND RISK ASSESSMENT OF PUBLIC HEALTH EVENTS IN THE WESTERN PACIFIC REGION

WPR/DSE/ESR(06)/2011.3
20 June 2011

Manila, Philippines
21 – 22 June 2011

ENGLISH ONLY

PROGRAMME OF ACTIVITIES

Activity/Agenda item /Subject of presentation		**Facilitator/Presenter**
Day 1 - Tuesday, 21 June 2011		
08:00 – 08:30	**Registration**	
08:30 – 09:30	**Session One: Opening**	
	• Welcome and opening remarks	*Dr Takeshi Kasai*
	• The place of Risk assessment in the Asia Pacific Strategy for Emerging Infectious Diseases (2010)	*Dr Chin-Kei Lee*
	• Objectives and agenda	*Dr Ruth Foxwell*
	• Introduction of participants	
	• Administrative announcements	
09:30 – 09:45	Group photo	
09:45 – 10:05	*Coffee break*	
10:05 – 11:30	**Session Two: Risk assessment for acute public health events**	
	• Presentation: Overview of risk assessment in public health and current draft manual on Rapid Assessment in the Risk Management of Public Health Events	*Dr Mike Nunn*
	• Question and answer session	
11:30 – 13:00	*Lunch*	
13:00 – 15:30	**Session Three: Regional experience and simple tools**	
	• Presentation: Regional experience and four simple tools	*Dr Ruth Foxwell*
	• Discussion	
15:30 – 15:50	*Coffee break*	

Annex 2

Activity/Agenda item /Subject of presentation		**Facilitator/Presenter**
15:50 – 17:50	**Session Four: How do we use the matrix for deciding the level of overall risk?** • Presentations • Discussion	*Dr Mike Nunn* *Dr Babatunde Olowokure*
18:00	*Cocktail Reception*	

Day 2 - Wednesday, 22 June 2011

09:00 – 10:15	Summary of Day 1 **Session Five: Practical indicators to grade consequences** • Introduction to group work • Group work: Four practical outputs	
10:15 – 10:45	*Coffee break*	
10:45 – 11:30	Plenary: Feedback from group work and agreement of four practical outputs	
11:30 – 12:30	*Lunch*	
12:30 – 14:30	**Session Six: Practical indicators to grade likelihood** • Introduction to group work • Group work: One practical output • Plenary: Feedback from group work **Session Seven: Limitations in information – how does this affect confidence in our overall statement of risk?** • Introduction to group work • Group work: One practical output • Plenary: Feedback from group work **Closing**	*Dr Chin-Kei Lee*
14:30 – 15:00	*Coffee break*	