RRT training package

A1.3 Case-scenarios from the Tutorial for Notification Assessment under the IHR (2005)

Facilitator guide - Feedback to the 2nd Tutorial on Annex 2

Conclusions of an expert panel

In order to provide NFPs using the tutorial with reliable and valid feedback on the assessment of the Annex 2 decision instrument criteria as well as with regard to the notification decision under the IHR (2005), three experts were consulted on the scenarios used (Table 1). These experts have both great experience in the assessment of public health events as well as an in-depth knowledge of the IHR and the development and application of Annex 2.

Table 1. Members of the expert panel

Expert name	Country	WHO Region
Dr Kumnuan Ungchusak	Thailand	South-East Asia
Dr Eduardo Hage Carmo	Brazil	Americas
Dr Preben Aavitsland	Norway	Europe

Expert panel's notification assessment of scenarios

Overall the expert panel considered that three events met the requirement for notification under the IHR (scenarios 1, 3 and 4), while two events were not deemed notifiable (scenarios 2 and 5). For all five scenarios, the expert panel members were unanimous in their assessment regarding notification under the IHR. Please see the discussion of the expert panel's views regarding both the notification of the event and the application of the four decision instrument criteria for each scenario in the following section.

Scenario 1 – Fungal contamination of injectable drug

You are informed by the National Regulatory Authority for Medicines and Healthcare that a pharmaceutical company is recalling all lots of an injectable drug due to potential fungal contamination during the manufacturing process. It is likely that all batches of methylprednisolone acetate solution became contaminated with *Aspergillus fumigatus* due to a series of errors. Approximately 12,200 vials from these lots were already distributed to local health care facilities, while about 3,500 vials were exported to a number of other countries. These lots of the injectable product are used to treat peripheral joint and back pain. *Aspergillus fumigatus* is known to cause disease in humans, including fungal meningitis and joint infections.

Questions	Is the public health impact of the event serious?	Is the event unusual or unexpected?	Is there a significant risk of international spread?	Is there a significant risk of international travel or trade restrictions?	Does this event need to be notified to WHO under Article 6 of the IHR?
Expert panel	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

The expert panel concurred that the event has potential high public health impact, that it is unusual and unexpected and there is a risk of international spread as well as of trade restrictions. The event therefore needs to be notified to WHO under the IHR. For this scenario, the expert panel members were also unanimous in their assessment of the individual decision instrument criteria. This scenario highlights that notifiable events at time extend beyond communicable diseases and address pharmaceuticals or other products. It is very likely that the event has already been communicated by the existing national authorities responsible for the detection, assessment and prevention of adverse effects of medicines. However, while the notification obligation under the IHR does not seek to replace the existing pharmaco-vigilance systems, it provides a further safeguard to make sure that the relevant information reaches every involved country.

A fungal contamination of an injectable drug has potentially a high public health impact (see questions no 2 in Annex 2, to be used as specific guidance in the assessment process). This event is especially serious because some of the contaminated vials may already be ready for use in hospitals and medical practices. The expert panel pointed out that urgent public health actions are required to reduce the risk of infection. The event was considered unusual and unexpected by the expert panel because of the large contamination of an injectable product despite existing quality assurance processes in the pharmaceutical industry (questions no 4 and 5 in Annex 2). As some vials were already exported to other countries, illness due to *Aspergillus fumigatus* infection may occur in several places (question no 7). Accordingly, the expert panel deemed the risk of international spread to be significant. The expert panel considered that there was also the risk of trade restrictions against the specific pharmaceutical company involved.

Scenario 2 – Rise of chikungunya infection in an area dependent on international tourism

During the last six months, 1800 cases of chikungunya virus infection have been reported from a sentinel network in your island country, including 224 cases during the previous week. Chikungunya is generally a self-limiting febrile viral disease that is transmitted to humans by infected mosquitoes, and deaths are only rarely encountered. It has been endemic in the country for 12 years. While there had been a consistent decrease of chikungunya in the last three years, weather conditions facilitated the proliferation of the disease vectors and led to a moderate rise in the reported incidence. Neighbouring island countries are also experiencing a similar trend in the reported incidence. Recent investigations showed that larval indices remained at high level in all areas monitored. The MoH is therefore sending a team to assess the existing vector control measures underway. Additional control activities are being put in place, including a public health education campaign to sensitize the population about protective measures, and the reinforcement of epidemiological and vector surveillance. The small country (population 1,360,000) is very dependent on international tourism.

Questions	Is the public health impact of the event serious?	Is the event unusual or unexpected?	Is there a significant risk of international spread?	Is there a significant risk of international travel or trade restrictions?	Does this event need to be notified to WHO under Article 6 of the IHR?
Expert panel	**No**	**No**	**No**	**Yes**	**No**

This event was assessed by the expert panel not to require notification. The expert panel members considered for this scenario that three of the four criteria of the decision instrument were not fulfilled, and that this was therefore not a notifiable event. However, national authorities may decide to consult with WHO (under Article 8) and reassess the event in the coming days.

The moderate rise in the incidence of chikungunya fever in an endemic country and its neighbouring countries would in general not be regarded as having a serious public health impact. In addition, alert and control mechanisms are in place in the described country and the disease itself is not very serious. However, the situation may change, and a reassessment is necessary following the receipt of new information concerning the epidemiological situation and the status of the existing vector control measures. Given the endemicity of chikungunya, the expert panel did not consider this event to be

unusual or unexpected. Although the reversal of the trend of the previous three years is of some concern, changes in incidence from year to year, based on weather conditions, are expected in endemic countries, and disease severity does not seem to have changed. The expert panel considered that there was little risk of international spread. While individual cases may occur in tourists, international disease spread is unlikely given the dependence on the vector. The expert panel deemed the risk of travel restrictions to be significant because the event occurs in a tourist destination (question no 10 in Annex 2).

Scenario 3 –Novel swine-origin influenza virus

You received a report from the National Influenza Centre regarding a case of human infection with swine-origin triple reassortant Influenza A(H3N2). According to the report, a 16-year-old male became ill with fever, headache, cough, rhinorrhea, sore throat, body aches and lethargy. The patient was seen by an outpatient care provider, where he tested positive for influenza A by rapid test. He did not require hospitalization and has since fully recovered. As part of a routine surveillance program, the clinical specimen was sent to the National Influenza Centre for further testing. The National Influenza Center determined yesterday that the virus was a novel swine-origin influenza A(H3N2)v virus. Humans are periodically infected with zoonotic influenza viruses from swine. Public health officials conducted an initial investigation which showed that the adolescent boy had exposure to pigs three days before illness onset. Illness among family members or close contacts was not reported.

Questions	Is the public health impact of the event serious?	Is the event unusual or unexpected?	Is there a significant risk of international spread?	Is there a significant risk of international travel or trade restrictions?	Does this event need to be notified to WHO under Article 6 of the IHR?
Expert panel					**Yes**

This scenario is different from the rest, because any case of human influenza caused by a new subtype is notifiable under the IHR, irrespective of the context in which they occur. A new influenza subtype, as defined in the WHO case definitions, is deemed always to be unusual or unexpected and may have serious public health impact, and hence must be notified to WHO in all circumstances.

Scenario 4 – Chemical accident

Two hundred persons are reported to have been killed and a further 800 people have sought medical assistance following a chemical plant explosion. The site of the disaster is at the edge of a town of 230,000 inhabitants located in a densely populated region. As a consequence of the accident, more than 150 tons of a mix of organic solvents, including toluene, benzene and xylene were released into a fast flowing major river. The solvents can cause neurological effects as well as damage to he liver and kidneys, while benzene is a known human carcinogen. The river is used for recreational purposes (e.g. boating, swimming and fishing). It is also a main source of drinking water for a city in a neighbouring country 20 km downstream from the site of the event. Water extraction points downstream of the chemical release show benzene and xylene levels in the polluted water exceeding the national safety standards 20 times. Reliable meteorological forecasts are not available for the next days.

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Expert panel	**Yes**	**Yes**	**Yes**	**No**	**Yes**

This event describes the chemical contamination of the environment. The expert panel considered the event to be notifiable because it has a potential high public health impact, it is unusual and unexpected and there is a risk of spread of a public health hazard across an international border. This scenario emphasizes that notifiable events can extend beyond communicable diseases and may arise from chemical agents. Notification of this event may give WHO an opportunity to offer assistance, to inform other countries and prevent unnecessary travel and trade restrictions.

The expert panel affirmed the first Annex 2 criterion because many people in this densely populated area may be exposed to the highly toxic and carcinogen chemicals through swimming and drinking water. In addition, the event might have serious consequences on human health in the future because of delayed health effects of chemical exposures. The notification assessment must therefore also consider whether an event carries a potential for future impact on public health and requires immediate action to reduce the potential consequences. The expert panel assessed the disastrous explosion in a chemical plant and the massive environmental contamination with chemical agents to be unusual and unexpected (questions no 4 and 5). The expert panel also deemed the risk of international spread to be significant because the transboundary spread of the contaminants via the river to another country might have already happened or appears very likely (subquestion 7). The risk of travel and trade restrictions was considered by the expert panel not to be significant because of the low probability that countries will institute restrictions on travels and trade out of fear of contamination. At the same time, the expert panel emphasized that one could also regard the last decision instrument criterion as fulfilled in case that contaminated food is traded internationally (i.e., if affected countries export fish caught in the contaminated river). Expert panel members commented that the information given in the scenario is insufficient to make a clear decision about the fulfilment of the last decision instrument criterion. In any case, proactive information through the IHR mechanism regarding risk assessments for drinking water and fish may reduce the risk of unnecessary travel and trade warnings.

Scenario 5 – Outbreak of cutaneous anthrax

You received a report about four cases of cutaneous anthrax occurring in a remote rural area. Two cases were confirmed by isolation of *Bacillus anthracis* from skin lesions, the other two cases were identified by epidemiological link. All cases have been in contact with cows that were dying with hemorrhagic signs. The onset of symptoms of the index case was ten days ago with the presence of ulcer in the right arm associated with oedema, heat, rush and fever. All cases received treatment and are recovering. As of to date, no additional case was identified. Anthrax has not been identified in the country in the last ten years. A Disease Control and Research team is at the site to assess the situation. It is also planned to conduct an emergency vaccination campaign for cattle and an awareness campaign.

Questions	Is the public health impact of the event serious?	Is the event unusual or unexpected?	Is there a significant risk of international spread?	Is there a significant risk of international travel or trade restrictions?	Does this event need to be notified to WHO under Article 6 of the IHR?
Expert panel	**No**	**No**	**No**	**No**	**No**

The expert panel considered that for this scenario none of the four criteria of the Annex 2 decision instrument were fulfilled, and that this was therefore not a notifiable event. However, there are uncertainties regarding the risk of international spread through the exportation of affected cattle and cattle products and the restrictions on such exports. National authorities may therefore decide to consult with WHO (under Article 8) and then reassess the situation when more information has been collected.
The event, not involving respiratory or gastrointestinal anthrax infections in humans, is not serious. The few cases are already recovering. The expert panel did not consider this event to be unusual or unexpected as new cases occur from time to time in cattle given that the agent is probably present in soil. Transmission to humans from cattle is therefore not unexpected. The expert panel considered that there

was little risk of international spread and travel and trade restrictions as all cases occurred in a remote area. However, the expert panel commented that it might be difficult to decide whether the two criteria were fulfilled because it is not known whether cattle from this area or cattle products are exported. Given the lack of relevant details, the expert panel was unanimous about the application of the two last criteria. The expert panel members also commented that the event might raise the attention among foreign officials given the intense interest in anthrax from a bioterror defence perspective (question no 11). Individual differences in the assessment may also attest to the influence of the specific users' experience, knowledge and perception on their judgement (please see the below comment on deviating assessments of the notifiabilty and the four decision instrument criteria).

Comment on discrepant outcomes of individual assessments

In general, determining whether the Annex 2 decision instrument criteria have been met requires an informed judgment on the part of the user. Such judgment is always influenced by the users' particular experience, knowledge and perceptions. As such there is no absolute right or wrong answer to the assessment questions and a certain level of disagreement in the assessment of the decision instrument criteria between different users is to be expected. The limited amount of contextual information in these scenarios and the deliberately non-specific nature of Annex 2 leave considerable room for individual users' interpretations. This tutorial seeks to give users an opportunity to practice the systematic assessment of the criteria and an opportunity to compare the outcomes of their assessment with that of a small group of experienced experts. The value is in understanding the assessment processes to make good use of Annex 2 rather than arriving at identical conclusions among all users.