****

****

**RRT Advanced Package**

**B5.1b RRA case-scenario – Instructor guide**

**PART 1: Gathering Information on Undiagnosed illness Jojo Province, Country A, 1 Apr 2012**

**Background:**

An unidentified illness affecting people in 4 communes from the Mama District of Jojo Province remains under investigation in Country A. Cases have presented with symptoms ranging from stiffness in the limbs, ulcers on hands and feet to multi-organ failure.

Cases were first identified in late 2010. Mama District Hospital reported nearly 50 local residents presenting with similar symptoms between 19 April and 24 May 2011. Two cases were transferred to the Tegument Hospital in Sepple City and two other cases died (Source: TholspkNews). The total case number reported for 2011 was 150 (Source: Sepple Daily).

The Director of Mama District Medical Centre, reported that 62 cases, with 6 deaths, have been reported between 1 January and 1 April 2012 (Source: Sepple Daily).

**Action to date:**

An investigation has been initiated by the Ministry of Health.

* On 24 Nov 2011, an investigation was undertaken in Bees village of Mama district where there were 57 patients. Initial reports indicated high levels of copper in the blood and signs of liver damage.

**Initial diagnosis:** inflammation of hand and foot due to contact by suspected chemicals used in agriculture (based on symptoms, development of disease, results of investigation on environmental condition, living condition, nutrition status, and laboratory test, the national and international experts). However, exact diagnosis has not yet been confirmed, some samples were taken to further analysis.

**Instructions to participants:**

Participants will have to complete the tables below with the missing information and indicate sources of information.

*Note: suggested answers are in bright blue.***Table 1: Hazard Information**

|  |  |
| --- | --- |
| **Information for Hazard Assessment** | **Source of Information** |
| **What is Hazard?**   * unknown * possibly chemical herbicide poisoning after spraying the chemical in cassava filed * possibly environmental chemical   **Is it Laboratory confirmed?**  Not yet  **What are the Characteristic?**   * Genetic/mutation capacity: n/a * Predominant strain/antigen city: n/a * Antibiotic Resistance: n/a * Proliferation capacity: n/a * Toxin/toxicity: n/a * Dose effect: Not known   **Clinical presentation and Progression of illness of current and potential cases**  Incubation period: not known   * Period of communicability: n/a * Serial interval: n/a * Signs and Symptoms:   + all patients had skin inflammation on hand and foot without acute infection and toxic infection then resembles severe burns and flaking of skin   + Some of patients have inflammation on mouth and red rash in 2 cheeks   + Laboratory test of blood of some patients shows that level of glucose, Ca2, albumin in blood is low but liver enzyme was 4-5 time higher than normal * Reported Case Fatality Rate: 2011: 1.3% (2/150); 10 % (6/62) to date for 2012 * Potential clinical outcomes associated with the hazard: Multiple organ failure (liver damage) | * Promed 15 September 2011 reporting TholspkNews accessed at <http://english.tholspkn.zz/en.html> * Promed 14 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * Promed 6 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * ProMed 1 April 2012 * Sepple English edition 11 and 1 April 2012 * Email to Dr. Son Sa, 1 April 2012, 1344 |

**Table 2: Exposure information**

|  |  |
| --- | --- |
| **Potential Information for Exposure Assessment** | **Source of Information** |
| **General Information**   * Potential Population exposed (# of age and sex distribution):   + 2 cases late 2010   + 150 cases in 2011, 1 death   + 62 cases to date 2012; 6 have died   + Most of them are using chemicals of unknown origin for agriculture activities   + No information about sex distribution * Data about cases already known (# of age and sex, Epi Curve)   + Age range 4-72 years; 'most' under 15 years   + No other information neither Epi Curve   **Human to Human transition**   * Potential transmission mode: Unlikely H2H * Estimate of the potential for transmission to susceptible people: Unlikely * Who present as a case: Jojo district people   **Path way for Human exposure**   * Water source for community: No information * Environmental flow pattern:   + Poor sanitation condition, no household latrine   + Bad behaviour in using chemical in agriculture activities: unknown origin of agricultural chemicals   **Live Vector**   * Type of vector present: Unlikely, however a large cave near to human living, may result in vector exposure   **Exposure information relevant to geographical**   * Case report information from surrounding area /country:   + No report at this moment * Location of potential source: Ba To District, Quang Nai Province, Minh Louang * Travel and trade information of the spread: No information * Local control measures that would contain the hazard to its current location: Investigation team sent from MOH in November 2011 to find out then cause of this hazard   + Sample of water, soil from cassava field and herbicide were collected for testing   + Advice given: washing hand and feet after coming from the field   + Avoid direct contact with pesticide and other chemical   **Susceptibility to exposure**   * Vaccination level for community: n/a * Prior disease circulation producing natural immunity: n/a * High co-morbidity level in exposed population: * Nutritional status of the community: Most people in areas lack adequate nutrition, poor quality of rice, lack of safe water | * Promed 15 September 2011 reporting TholspkNews accessed at <http://english.tholspkn.zz/en.html> * Promed 14 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * Promed 6 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * ProMed 1 April 2012 * Sepple English edition 11 and 1 April 2012 * Email to Dr. Son Sa, 1 April 2012, 1344 |

**Table 3: Vulnerability information:**

|  |  |  |
| --- | --- | --- |
| **Vulnerability information for RA** | **Source of Information** | |
| **Managing the hazard:**   * Infected people received treatment * Precautionary advice provided to affected areas * Unknown communication to communities   **Surveillance system**   * Reporting site in affected areas: no information * How suspected cases are identified: Media?   **Health Care infrastructure**   * Number of health care facilities in affected areas: n/a * Laboratory capacity for chemical testing: n/a * Health Care seeking behaviour in affected areas: n/a * Environment: Cases living in poor condition, no house has latrine * Social: n/a * Economical: n/a * Political: n/a | | * Promed 15 September 2011 reporting TholspkNews accessed at <http://english.tholspkn.zz/en.html> * Promed 14 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * Promed 6 October 2011 reporting Sepple news accessed at <http://english.tholspkn.zz/en.html>/strange-disease.html * ProMed 1 April 2012 * Sepple English edition 11 and 1 April 2012 * Email to Dr. Son Sa, 1 April 2012, 1344 |

**PART 2: Report on Rapid Risk Assessment of undiagnosed Illness in Jojo Province, Country A, 1 April 2012**

**Background:**

An unidentified illness affecting people in 4 villages from the Mama District of Jojo Province remains under investigation in Country A. Cases have presented with symptoms ranging from stiffness in the limbs, ulcers on hands and feet to multi-organ failure.

Media reports that cases were first identified in late 2010. Mama District Hospital reported nearly 50 local residents presenting with similar symptoms between 19 April and 24 May 2011. Two cases were transferred to the Tegument Hospital in Sepple City and two other cases died (Source: TholspkNews). The total case number reported for 2011 was 150 (Source: Sepple Daily). 62 cases, with 6 deaths, CFR 10% (6/62), have been reported between 1 January and 1 April 2012. Age ranging from 4 to 72 years (Source: Sepple Daily). Personal communication sources indicate that the event has occurred in 3 waves (April-May 2011, August to October 2011, November 2011-April 2012) with the least number of cases presenting in the middle 'wave'.

Investigation teams have been sent to field:

* On 24 February 2011, an investigation was undertaken in Bees village of Mama district where there were 57 patients. Initial reports indicated high levels of copper in the blood and signs of liver damage.

Action in place by Country A authorities:

* Supportive therapy has been provided to affected people
* Advice of washing hand and feet after field work has been provided to assist with indirect contact with herbicide and other chemical
* Selective testing from 300 households has been done with sampling of blood, skin and hair taken for analysis
* Information on progress is being formulated for media

**Level of risk from event:**

1. **Question related to risk**

Several questions can be asked. One of the questions could be:

What is the risk level associated to an important increase in morbidity and mortality linked to this event?

1. **Evidence used to assess the level of risk:**
   * Exposure:
     + As cases continue to be reported, it was concluded that exposure will continue to occur.
     + The hazard and source have not been identified
   * Transmission:
     + There have been 3 waves of the cases reported.
     + It is unknown if secondary transmission occurs from primary cases.
     + It is unknown if the incidence of cases reported is high or low or changing over time as the size of the exposed population remains unknown.
     + It is also unknown whether people present as a clinical case each time they come in contact with the hazard as the hazard is unknown.
     + The number of cases reported relative to the time period involved would suggest that a high number of cases would not be expected in future unless the hazard is introduced to a different community.
     + As there have been no other cases reported from other areas in Country A, the event is considered to be geographically isolated since first reports in April 2011.
   * Disease severity:
     + Is moderate to high in the cases that have been identified (i.e. 6 deaths in 62 cases (CFR = 10%) from 1 Jan to 1 Apr 2012).
     + As the size of the population exposed is unknown, there is a possibility that a large number of cases with very low severity have not reported to healthcare facilities. If this were the situation, this would decrease the assessment for disease severity.
   * Capacity and control measures:
     + Control measures are not in place as the hazard and source of transmission are unknown.
     + Capacity to treat the disease appears mixed with relatively few deaths in 2011, however a higher case fatality rate in 2012.
     + Diagnosis remains an issue as a comprehensive case definition has not been provided.
     + The population appears to seek healthcare early.
2. **Risk declaration:**

Considering the important increase in morbidity and mortality linked to the event, the probability is very likely and the consequences for Public Health are moderate to major.

According to the analysis of the evidences, probability and potential consequences of the questions related to risk, the level of risk is high.



1. **Level of action**

A high level of risk requires immediate senior management attention and the establishment of an event management team. The addressing of the perception issues will also need to be taken account of through specific risk communication messages

1. **Recommended further action beyond that already in place:**
2. A mutli-disciplinary team including expertise in epidemiology, environmental health, dermatology, occupational health, food safety, toxicology and haematology should investigate the ongoing event
3. The broader expertise should be consulted about control measures to interrupt disease occurrence despite the difficulty in identifying the hazard
4. Epidemiological expertise to identify the source and the hazard can be sought through FETP trainees with clear roles and responsibilities.
5. Laboratory results on hair, blood and skin samples should be followed up to identify potential hazard. This may have added importance if the hazard is a centrally distributed item that can be sent to other villages (e.g. fertilizer from a central distributor).
6. Specific risk communication messages should be actioned directly from the government sources through appropriate channels for: (i) the local community; (ii) the media; (iii) the international community.
7. **Perception issues:**

Further to the level of risk from the technical risk assessment, issues that need addressing include:

1. Local villagers are beginning to panic and not work the fields as they are worried about catching the 'disease';
2. Media are reporting on rumours about this disease spreading to other communities;
3. Governments from other countries are worried about the potential for the event to spread to other places.
4. **Assessment limitations:**
5. This risk assessment has been conducted using a wide variety of sources and the best evidence available as of 1 April 2012.
6. As laboratory data is still pending and epidemiology and clinical data are preliminary, it is expected that the level of risk may change.
7. A new risk assessment will be conducted once the laboratory results are confirmed and/or if there is a significant surge in case numbers or case severity.

**Risk assessment team:**

1. Dept. Health surveillance and outbreak team: Mo Tan Sol, Jon Dost, Mary Speg, Be Khelphamaphong
2. Dept Health environmental health team: Susan Yong
3. Dept Health Event Management team: Sony Kang

|  |
| --- |
| **Disclaimer**  **WHO Health Security Learning Platform - Training Materials**​  These WHO Training Materials are © World Health Organization (WHO) 2022. All rights reserved.​  Your use of these materials is subject to the “[WHO Health Security Learning Platform, Training Materials – Terms of Use](https://extranet.who.int/hslp/?q=content/terms-use)”, which you accepted when downloading them and which are available on the Health Security Learning Platform at: <https://extranet.who.int/hslp>  ​  ​  Should you adapt, modify, translate, or in any other way revise the contents of these materials, you shall not imply that WHO is any way affiliated with such modifications and shall not use the WHO name or emblem in such modified materials. ​  ​  Should you adapt, modify, translate, or in any other way revise the contents of these materials, you shall acknowledge the source of the material providing the following attribution: “These training materials are a modified version of the Rapid Response Teams Advanced Training Package (available at: https://extranet.who.int/hslp/), which is © the World Health Organization (WHO), 2022, and used with permission from WHO. WHO disclaims any responsibility for any modifications to, or revisions of, the WHO copyrighted materials.”  ​  Further, please inform WHO of any modifications of these materials that you use publicly, for record-keeping purposes and continued development, by emailing [ihrhrt@who.int](mailto:ihrhrt@who.int)​ |