

**Guidelines for  
Multi-Country Joint Outbreak Investigation**

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## **Purpose**

The purpose of this document is to provide a guidance for the multi-country joint outbreak investigation. It is the standard operational guideline for the outbreak investigation team members from neighboring countries and not designed to be an in-depth resource for outbreak investigation, for which other resources are widely available. There are many outbreak plans for the investigation and control of communicable disease in each country; however, these plans don't necessarily mention about the joint outbreak investigation by the joint team of neighboring countries.

## **Aim of Guidance**

This SOP aims to ensure an effective and coordinated approach for joint outbreak investigation team (JOIT) in the management of outbreak from initial detection, verification to the formal declaration that the outbreak has ended and review of lessons learnt. It can promote a reliable approach based on the best practice across all countries through a set of standards for outbreak response.

The appendices provide guidance on identifying the roles and responsibilities of JOIT members, countries, organizations and individuals, investigation and control procedures, media relations etc.

## **Management for Joint Outbreak Investigation**

The primary objective in the outbreak investigation is to secure the public health by identifying the source of the outbreak and implementation of appropriate control measures to prevent further recurrence of the infection across the countries. This should be supported by a risk assessment.

The secondary objective includes management of the outbreak by the team, provide training and using lessons learned to further strengthening of the disease control between countries. Responsibility for managing the outbreaks is shared by all countries, who are the part of the JOIT. This responsibility includes the provision of adequate resources including financial, technical, and others in order to control the outbreak.

Majority of outbreaks are dealt as part of the routine provision of each country. However, on occasion, outbreaks are high magnitude across the countries, especially in the border areas, where the routine services of each country may not be adequate and often requires additional resources from other countries. On these kinds of occasions, the joint outbreak investigation team is often required.

## Recognition of an Outbreak

### **An outbreak or event can be defined as:**

- an event in which two or more people have a similar illness are linked in time or place;
- a greater than expected rate of infection compared with the usual background rate for the given time and place, where the outbreak is occurring;
- a single case for certain rare diseases such as poliomyelitis, rabies, avian influenza (H5N1);
- a diseases of Public Health Emergency of International Concern as defined by International Health Regulations (2005)<sup>1</sup>

Outbreaks may be recognized by countries across the border. Each country has its own system for surveillance and response to an outbreak that has occurred at the border area. However; during these outbreaks in the border area, country may contact other countries for the joint investigation. In addition, initial investigation to elucidate the nature of the outbreak should begin as quickly as possible after receiving the initial report. Immediate control measures should be in place if necessary. To establish key facts and inform the decision to declare an outbreak the following steps may be undertaken:

- Confirm the validity of the initial information about the potential outbreak is based on;
- Consider whether or not the cases have the same diagnosis and what are the provisional diagnosis;
- Carry out preliminary interviews with initial cases to collect basic information and any common factors;
- Collect relevant clinical and/or environmental specimens;
- Form preliminary hypothesis;
- Consider the likelihood of a continuing public health risk
- Conduct an initial risk assessment to guide the decision-making process (Follow WHO Risk Assessment Guideline).

## Declaration of an Outbreak

It is often outbreaks are declared by the surveillance focal person of Ministry of Health of respective country. However, when there is an outbreak across the border affecting two or more

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<sup>1</sup> <http://www.who.int/ihr/procedures/pheic/en/>

countries, then the outbreak should be declared jointly by the countries affected. National Focal Point for International Health Regulations (2005) could be an ideal person. After verifying and declaration of the outbreak, respective country needs to decide on the need and urgency to arrange a multi- country joint outbreak investigation team (JOIT). This decision should be evidence based on the risk assessment. The establishment of a JOIT will be the appropriate response if outbreak is characterized by one or more of the followings:

- Immediate and/or continuing significant communicable disease health hazard to the population at risk across the border
- One or more cases of serious communicable disease (zoonoses) or any diseases of potential Public Health Emergency of International Concern as per the decision instrument of Annex 2 of IHR (2005)
- High morbidity and mortality
- Involvement of large geographical area across countries
- Significant public or political interest

## **Joint Outbreak Investigation Team (JOIT)**

The purpose of the JOIT is to agree and coordinate the activities for the investigation and control of the outbreak in order to assess the risk to the public's health and ensure that the etiology, vector/vehicle and source of the outbreak are identified and immediate control measures are put in place.

Details regarding the country and functioning of the JOIT are contained in Appendix 2. Specifically:

- The terms of reference should reflect the team's purpose and should be agreed upon at the first meeting and recorded accordingly;
- The chair of the JOIT should be appointed at the first meeting. The chair will normally be the senior health official of the country, who has officially declared the outbreak, but there may be occasions when it is more appropriate that another member of the JOIT is appointed as a co-chair; Membership of the JOIT should be in accordance with Appendix 2. It is the duty of the chair and members to safeguard that all key individuals relevant to the outbreak are represented and invited;
- Responsibility for handling the outbreak should be given to the JOIT by the country and representatives must be a senior to make and implement decisions and to ensure that adequate resources are available to undertake the outbreak management

- The JOIT should agree further investigations and actions.

## **Investigation and Control of the Outbreak**

- An aide memoire for outbreak investigation and control is contained in Appendix 3;
- Control measures should be elucidated with clear implementation plan and responsibilities;
- A case definition should be agreed and reviewed as required during the investigation;
- Basic descriptive epidemiology is essential and should be reviewed by the JOIT. In some outbreaks descriptive epidemiology might be sufficient to take action and it is crucial for generating a hypothesis as to the source of the infection.
- The objective of conducting an analytical study is to confirm a hypothesis regarding the source of infection or mechanism of spread of infection in order to confidently take action. An analytical study should only be undertaken if there is a hypothesis to test. Conducting an analytical study should be considered early in the investigation. Criteria and further information are contained in Appendix 4
- A written protocol for any analytical study should be drawn up at the earliest possible point, with level of detail appropriate to the nature of the outbreak. A template is shown in Appendix 5

## **Legal Issues**

Between countries, they have their own legal mechanism; however, in principle each country is obliged for followings:

- the protection of the citizens against infectious disease and other hazards; and
- the prevention of the spread of infectious disease.

The common of legal responsibilities and duties in the handling of an outbreak lie with the local authority. Legal powers relating to the investigation of outbreaks for this JOIT should be in line with the legal system of the country of investigation. The JOIT must give due consideration to the possibility of the legal proceedings of respective country.

## **Communication**

It is crucial to establish effective communication between all members of the team and maintained throughout the outbreak in accordance with Appendix 3 (Outbreak Investigation and Control) and 6 (Media Relations). The Chair should ensure that minutes are taken at all meetings

of the JOIT and circulated in a timely fashion. All key decisions should be recorded and the minute-taker is accountable to the Chair for this function.

To ensure the appropriate dissemination of critical information, standard communications protocols should be followed. A communications strategy for informing the public and key stakeholders should be discussed and agreed within the JOIT. Use of communication through the media may be a valuable part of the control strategy of the outbreak. The JOIT should consider the risks and benefits of pro-active versus reactive media engagement in any outbreak.

## **End of Outbreak**

The JOIT will decide when the outbreak can be considered over and will make a statement to this effect. The decision to declare the outbreak over should be informed by ongoing risk assessment and considered when:

- There is no longer a risk to the public health that requires JOIT to conduct further investigation or to manage control measures
- The number of cases has declined
- The probable source has been identified and withdrawn

At the conclusion of the outbreak, the JOIT will prepare a written report. Final outbreak reports are primarily for dissemination to a distribution list agreed by the JOIT members and should be completed within 6 weeks of the formal closure of the outbreak. Lessons learnt and recommendations should be disseminated widely. Appendix 7 contains a standard format for the final outbreak report.

A debriefing meeting of the JOIT would normally be convened after the end of the outbreak to consider lessons learned and any further preventative action required. The lessons learnt should be reviewed within 12 months of the formal closure of the outbreak.

## Appendices

### Appendix 1 – Risk Assessment

Risk assessment should be based on the WHO guideline on Risk Assessment.<sup>2</sup>

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<sup>2</sup>[http://apps.who.int/iris/bitstream/handle/10665/70810/WHO\\_HSE\\_GAR\\_ARO\\_2012.1\\_eng.pdf;jsessionid=0697143520F52E403F5CFCA368FD3CAF?sequence=1](http://apps.who.int/iris/bitstream/handle/10665/70810/WHO_HSE_GAR_ARO_2012.1_eng.pdf;jsessionid=0697143520F52E403F5CFCA368FD3CAF?sequence=1)



## Appendix 2 – Joint Outbreak Investigation Team

### Membership of the JOIT

Membership of the JOIT will vary according to the nature of the outbreak. Government staff of respective country are expected to be involved in a joint investigation. Usually an Epidemiologist, a Clinician, an Environmental Health specialist, a microbiologist and the Director of Disease control are required. Additional members can be involved depending on the nature of the outbreak. In some circumstances it may be appropriate for the JOIT to consist only the staff of respective health ministries.

#### Usual members

- Staff or focal person of Disease Control/ Epidemiologist of respective countries
- Clinician
- Environmental Health Officer (where appropriate)
- Microbiologist (where appropriate)
- Director of surveillance or disease control

#### Additional members (this is not an exhaustive list)

- Regional Epidemiologist
- Administrative Support
- Data analyst/statistician
- Communications Officer
- Relevant Director
- Community Nurse/midwife
- Toxicologist
- Other members: as determined by the nature of the outbreak, representatives from
  - Animal Health and Veterinary Laboratory Agency
  - Water and sanitation authority
  - Environment and food Agency
  - Customs or home affairs
  - Other relevant institution

### JOIT Terms of Reference

The terms of reference should be agreed upon at the first meeting and recorded accordingly.

#### Suggested terms of reference:

- To review the epidemiological, clinical, microbiological and environmental evidence and verify the outbreak;
- To conduct the risk assessment during the outbreak regularly;

- To develop a strategy to deal with the outbreak and allocate responsibilities to members of the JOIT based on the risk assessment
- To agree appropriate further epidemiological, clinical, microbiological and environmental investigations
- To ensure that appropriate control measures are in place to prevent further spread of the disease
- To communicate with other professionals as required, the media and the public providing an accurate, timely and informative information;
- To make recommendations on developing the system and procedures to prevent a future occurrence of similar events and where feasible enact these
- To determine when the outbreak can be considered over on the basis of ongoing risk assessment
- To produce a report/s at least one of which will be the final report containing lessons learnt and recommendations.

### Template Agenda for JOIT Meeting

#### Joint Outbreak Investigation Team Meeting Agenda

Title, Date, Time and Venue

1. Introductions
2. Apologies
3. Minutes of previous meeting (for subsequent meetings)
4. Purpose of meeting
  - At first meeting agree on selection of chair and/or co-chair
  - Terms of Reference
5. Review of evidence
  - a. Epidemiological
  - b. Microbiological
  - c. Environmental
6. Current Risk Assessment
7. Control Measures
8. Further Investigations
  - Epidemiological
  - Clinical
  - Microbiological
  - Environmental
9. Communications
  - Public
  - Media
  - Healthcare providers

10. Agreed Actions
11. Any other business
12. Next Meeting

## **Roles and Responsibilities of Countries and other organizations**

### ***Local Authorities***

Local authorities play a vital role in managing outbreaks. The investigation of outbreaks usually carried by local health authorities either by local rapid response team or by others local means. Local authorities have powers to assist both on investigation and control of outbreaks.

### ***Country***

Ministry of Health of respective country has communicable disease surveillance and investigation roles and managing the outbreaks within their territory. But at a time of outbreak across the border, countries across the border may seek for the joint investigation. In order to initiate the joint investigation, National Focal Points for IHR can play pivotal role on coordinating and initiating the joint investigation with the support of technical units of respective countries.

The Laboratory services of respective countries can be used for the identification and investigation of the outbreak. Preferably the existing reference laboratory facilities will be used, however, in absence of capacities, testing can be done in any WHO reference laboratory as agreed by the JOIT.

## Appendix 3 - Outbreak Investigation and Control

Although the methodology for the investigation and control of an outbreak is possibly depends on the circumstances, the following “aide memoire” is designed to support in systematically addressing the issues. A written protocol for the investigation must be developed at the earliest, usually after confirmation of the outbreak. Some of the steps below may be completed before the outbreak is declared. It is not envisioned to infer that each action must automatically follow the one preceding it, or that all steps are needed on every occasion. In practice some steps will be carried out simultaneously whilst others, for example, communication and collation of data, will be required throughout the entire process.

### Initial response

- Confirm the validity of the information about the potential outbreak
- Confirm the diagnosis of the cases or establish a provisional diagnosis if not obvious and collect relevant clinical and demographic information
- Conduct preliminary interviews with primary cases to collect basic information including any common exposure factors e.g. consumption of a particular food, visit to a particular premises, direct or indirect contact with animals etc
- Identify the population at risk of countries
- Agree on a case definition
- Agree arrangements for case finding

### Descriptive epidemiology

- Review initial information and establish the number of cases – confirmed, probable, based on the agreed case definition;
- Describe the outbreak in terms of person (describe cases by age, sex or other factors), time (epidemic curve: plot the cases by date of onset of symptoms or, if not available another variable such as date of diagnosis or date of report) and place (describe the geographical distribution of cases and, if relevant, map them);
- Conduct in-depth interviews with primary cases to establish any common factors; and
- Form preliminary hypothesis based on the descriptive epidemiology and the exploratory interviews with cases.

### Other Actions

- Consider probability of the ongoing public health risk;
- Perform an initial risk assessment to guide the decision-making process and implement any immediate control measures required;
- Agree any immediate additional investigations required such as microbiological testing of people, animal and environmental sampling;
- Conduct on site investigations at implicated premises
- Identify the need to convene a formal JOIT

- Review the information gathered, assess the need for further investigation and identify the roles and responsibilities of the relevant partners

### **Communication**

- Agree who will lead media responsibility (as per the agreement between countries and the JOIT members)
- Identify all stakeholders that need to receive the outbreak information e.g. those dealing with the event, health services, national and international agencies, those affected by the outbreak, the local community as well as rest of the world
- Identify the most effective routes of communication
- Ensure accuracy and timeliness of communication, while following national rules and regulation of the countries involved.
- Use the media constructively
- Safeguard relevant material is collected to inform a final written report for local and, where appropriate, wider distribution

### **Analytical epidemiology and further investigation**

- Confirm factors common to all or most cases
- Calculate attack rates
- Review preliminary hypotheses and consider whether further epidemiological or microbiological investigations are required
- Collect any necessary further clinical and other specimens for laboratory tests
- Conduct further analytical epidemiological studies (case control or cohort studies). See Appendix 4
- Conduct further microbiological studies (e.g. specialized typing)
- Ascertain source and mode of spread

### **Control measures**

- Control the source (animal, human or environmental)
- Control the mode of spread
- Protect citizens at risk
- Monitor effectiveness of control measures / maintain disease surveillance

### **Final phase**

- Identify the end of the outbreak (usually when the number of new cases has returned to background levels)
- Produce outbreak report and lessons learnt.

## Appendix 4 – Analytical Studies

To test a hypothesis for possible causation generated by descriptive epidemiology, an analytical study can be carried out. Analytical studies are resource intensive but they are necessary to support or to refute the hypotheses identified. They enable the investigator to generate convincing evidence and establish with a greater degree of confidence the suspected source of infection. This may be important to enable appropriate action to protect public health and to justify sometimes costly interventions. The key considerations for conducting an analytical study include:

- A disease with unknown source, or unknown mode of transmission
- Large number of affected persons and source or mechanism of transmission unclear or needing confirmation
- Where new risk factors for a disease may have been recognized
- A new or unknown pathogen or hazard
- To meet the need for new knowledge to inform future public health action
- An outbreak of a rare disease not normally occurring within the region or continent

### **Other factors to consider include:**

- An outbreak linked to an event of national or international significance or disease of Public Health Emergency of International Concern (PHEIC)
- An outbreak of particular cross border interest where evidence to support or justify an intervention may be needed
- An outbreak of disease with significant morbidity or mortality
- A high level of public or media concern
- An absence of known effective control measures
- An outbreak potentially linked to a nationally distributed product
- An outbreak which may be related to poor standards of institutional care
- Expectations for strong underpinning evidence are high
- Training experience can be gained

Cohort and case control studies are the traditional study designs and offers a scientifically sound frame to measure the relationship between exposure to a risk factor and the incidence of illness. The type of design that is appropriate will depend on the nature of the outbreak.

### **Case-control studies**

A case-control study may be employed when it is not possible to identify and investigate a defined population at risk, or when that population is so large in proportion to the numbers who are ill that it is not cost effective to include them all in the study. In a case-control study, there should be a specific hypothesis to test. This might include the risk factors is/are associated with disease or that people who were ill were more likely to have had a certain medical procedure or be cared for in a certain ward/theatre. Controls should be people who have had similar opportunities to be exposed and to be diagnosed as cases. Consideration needs to be given to whether or not controls should be matched. Controls can be chosen from neighbors and friends of the cases or from various registers and lists. Each case will usually have one, or preferably more, controls. When the data for a case-control study have been collected, they are analyzed by standard statistical methods to find the ratio of the odds of exposure in the cases to the odds of exposure in the controls (the odds ratio).

### **Cohort studies**

Cohort studies are the gold standard for outbreak investigations because they enable the relative risk to be estimated and often fit the circumstances of a group of people, who have been exposed to an agent together, with illness becoming recognized relatively soon afterwards. The cohort method has the advantage over case-control studies that there is no need to identify and select controls, so the possibility of bias is reduced.

### **Tests for statistical significance**

The chi-square ( $\chi^2$ ) and Fisher's Exact tests are the most commonly used in this calculation. The level of significance required to demonstrate that a difference is not merely a result of chance (i.e. not due to any cause) is specified beforehand. The commonest significance level used is 95%; that is, there is a one in 20 (5%) likelihood that chance alone would account for the statistical difference between the two groups.

## **Appendix 5 – Investigation Protocol**

The following are guidelines for the structure of the outbreak investigation protocol. The level of detail depends on the nature of the outbreak, and will reflect the resources available with the JOIT. The preparation of a detailed investigation protocol should not detract from management of the outbreak.

### **Title**

The title should contain, at a minimum, the type of outbreak, suspected pathogen, location and date.

### **Background**

This section would include, for example:

- Information on the pathogen
- Outbreak details (e.g. number affected, date first cases reported, date and time of onset of first cases and any laboratory confirmation, symptoms, geographical distribution, gender distribution)
- Geographical description and/or setting of events
- How the outbreak was detected
- The initial response to the outbreak.

### **Aim and Objectives of Investigation**

#### **Epidemiological Investigations**

This section would describe the methods and timescales for the:

- Descriptive epidemiological study (e.g. case definition, case finding, questionnaires).
- Analytical epidemiological study, if necessary

#### **Microbiological Investigations**

This section would describe the laboratory methods for the characterization of isolates (clinical, environmental, veterinary) to distinguish the outbreak strain.

#### **Environmental Investigations**

This section would describe the methods for the microbiological sampling and analysis of food, water, animal and environmental samples as part of the outbreak investigation. If the outbreak is zoonotic, this section would also describe methods for source tracing of animal products and market chain etc.

#### **Veterinary Investigations**



This section would describe the methods for the microbiological sampling and analysis of animal samples taken as part of the outbreak investigation.

### **Management and Communications**

This section will set out how the requirements of the protocol are met through the provision of adequate coordination, resources and through the timely communication of information.

## Appendix 6 – Media Relations

As delineated in Appendix 2, part of the membership of the JOIT is a communications officer. The role and responsibility of the communications officer in the JOIT is to guarantee that any media implications are considered and planned for. Depending on the event it may be necessary to keep the public fully informed via the media, especially if there is a wider public health risk. This would need to happen without prejudicing the investigation and without compromising any legal responsibilities or legal requirements and without revealing the identity of any case.

At the first meeting of the JOIT, arrangements for dealing with the media should be discussed and agreed with the lead communication officer. This should include a nominated spokesperson(s) and a process for arranging press conferences and releasing press statements.

All media materials will be prepared by the JOIT communications officer and signed off by relevant JOIT members, usually the epidemiologist as well as the JOIT chair. In events where it is appropriate for the media response to be joint media material would then also need to be shared and agreed with lead members of the JOIT.

Once all the media materials have been signed off by all relevant JOIT members, the communications officer will be responsible for all the external communication, except with professional stakeholders. Again depending on the nature of the event and the media response agreed on, this will include uploading a tweet, a facebook update, a web statement and all the other public communications. It can be uploaded in website of ministries of respective countries.

No other member of the JOIT or others will release information to the press or arrange press conferences - this will be solely the role of the communications officer with the concurrence of JOIT members and a chair. The communications officer will also share any media materials with the communications officers with the relevant stakeholders.

## **Appendix 7 – Final Outbreak Investigation Report**

### **Standard Structure**

A written final report should be prepared preferably within 6 weeks of the end of the outbreak investigation, and definitely within 12 weeks. This report should ideally be agreed by all members of the JOIT.

The final report should be comprehensive, protect confidentiality and be circulated to appropriate individuals and authorities. Publication in a peer-reviewed journal should be considered. The report should follow the usual scientific format of an outbreak investigation report and include a statement about the effectiveness of the investigation, the control measures taken and recommendations for the future.

### **Standard Structure:**

#### **Title Page**

The title should contain, at a minimum, the type of outbreak, pathogen, location and date.

Name of author(s) and investigators with affiliations, including members of the JOIT should be listed.

#### **Executive Summary**

This section should be concise and contain all of the key facts that describe what happened. The summary should provide an overview of the background (e.g. how many people were affected, severity of disease, what pathogen caused the outbreak, setting, etc.), outbreak investigation methods, results, how the outbreak was controlled, and any recommendations for preventing future outbreaks.

#### **Introduction**

This should contain a brief introduction to the outbreak, including details of outbreak recognition, initial investigations, immediate control measures, other contacted, timeline and objectives of the investigation.

#### **Background**

The background to the outbreak and implicated organism should include a brief description of clinical features, incubation period, infectious dose, recognized sources and modes of spread, and diagnosis etc. Also provide the background prevalence of the disease locally, nationally and globally if relevant.

## **Outbreak Investigation Methods**

- Epidemiological, e.g.:
  - a. Descriptive: Description of initial cases, case definition, case finding, epidemic curve, data collection, and hypothesis generation
  - b. Analytical: Case control study (control definitions and selection of controls, data collection, statistical analysis outline) and/or cohort studies
- Microbiological  
Front line laboratories and reference laboratories are used for examination of clinical, food/water, animal and environmental samples and characterization of isolates.
- Environmental, e.g.: Food, water, risk assessment of production and distribution including food chain etc., staff interviews
- Veterinary, e.g.: Animals, risk assessment of farms and live bird markets etc

## **Results**

The Results section should present all of the results from all of the methods used, with analysis and interpretation of the data, e.g.:

- Epidemiological – essential time, place, person
- Microbiological
- Environmental
- Veterinary

## **Control Measures**

This section should describe the outcome of measures taken to control the outbreak, and how effective they were, for example:

- Overall co-ordination and management of the outbreak
- Care of cases
- Prevention of further cases (primary and secondary spread)
- Public information
- Information to professionals/businesses, etc.
- Outline of food safety, infection control, health and safety, enforcement action
- Media response

## **Discussion and Conclusions**

This section should describe:

- The summary of the main findings

- The validity of the data and possible sources of bias
- Interpretation of epidemiological and microbiological findings
- Justification for conclusions drawn and actions taken
- Assessment of the control measures implemented
- Explanation of action to protect public health
- Problems encountered

### **Lessons Learned and Recommendations**

Lessons learned and recommendations should be specific and directed at the appropriate authorities and be realistic (feasible actions).

Lessons learned could cover:

- Areas of good practice
- Shortcomings and areas for improvement
- Key learning points

Recommendations are provided to propose changes in policies, procedures and/or guidance in order to:

- Prevent future outbreaks
- Improve surveillance and detection of outbreaks
- Improve the process of outbreak investigation and control

### **References**

### **Appendices**

Appendices may include:

- Chronology of events
- Details of risk assessments undertaken including date and time
- General background
- JOIT (members, terms of reference, roles and responsibilities, meeting dates)
- Detailed results
- Maps
- Epidemiological questionnaire
- Environmental questionnaire
- Letters to patients/physicians
- Press releases
- Costs of the outbreak
- Acknowledgements

**To be considered by JOIT:**

- Purpose of the report and who it is for. If there will be lessons identified relating to the response of individual organizations to the outbreak, consideration should be given to including these in a separate report for internal circulation only.
- Ownership of the report. If multi-agency signs-off procedure, ownership of copyright and responsibility for formal disclosures needs to be agreed.
- Disclosure and publication. Clear arrangements for formal and informal disclosure are needed. Agreement is required regarding where the report will be published and whether this will be in full. It is normal good practice to allow those affected by the report see it in advance of publication
- The identification of individuals, organizations and business. If to be identified, consideration should be given to whether they are content for disclosure.
- Legal and reputational risks around the report. If these are high, consideration should be given to increasing the scrutiny of the report and getting a legal opinion before publication.

**To be considered by authors:**

- Proof read the document, use a date and version number and remember to take the word “draft” off the final document
- Is further assurance through independent professional/expert scrutiny or peer review needed? Are the conclusions supported by evidence and would the conclusions and opinions stand up to independent scrutiny
- State who contributed what to the report and who signed the report off

## References

1. WHO. PHEIC procedures (<http://www.who.int/ihr/procedures/pheic/en/>)
2. WHO. Rapid Risk Assessment of Acute Public Health Events ([http://apps.who.int/iris/bitstream/handle/10665/70810/WHO\\_HSE\\_GAR\\_ARO\\_2012.1\\_eng.pdf;jsessionid=0697143520F52E403F5CFCA368FD3CAF?sequence=1](http://apps.who.int/iris/bitstream/handle/10665/70810/WHO_HSE_GAR_ARO_2012.1_eng.pdf;jsessionid=0697143520F52E403F5CFCA368FD3CAF?sequence=1) )

