



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

Outbreak Investigation and Response Workshop

**16-18 December 2014
Copenhagen, Denmark**

ABSTRACT

The WHO Regional Office for Europe, together with the Robert Koch Institute (RKI) in Germany, arranged a workshop, under the aegis of the Pandemic Influenza Preparedness (PIP) Framework, on outbreak investigation and response (OIR) on 16-18 December 2014 in Copenhagen, Denmark. Participants included representatives from the national Sanitary Epidemiological Service/Communicable Disease Centre (head, deputy head, lead for outbreak response, national influenza focal point) and the post-graduate training institute involved in outbreak response training; from Armenia, Tajikistan, Turkmenistan and Uzbekistan. The meeting focused on the development of operational OIR guidelines and their implementation including: intercountry exchange on OIR guidelines and training, introduction to best practises in operational guidance development, review of national OIR guidelines and planning next steps for revision and implementation of the guidelines. Countries concluded that a national generic OIR operational guideline should be developed which is flexible enough to be used for emerging/atypical pathogens. Also, that implementation should be conducted through training on the guideline content by national post-graduate training institutes.

Keywords

DISEASE OUTBREAKS
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UNEXPLAINED RESPIRATORY DISEASES
PANDEMIC PREPAREDNESS
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RISK ASSESSMENT

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Introduction

The WHO Regional Office for Europe (WHO/Europe) is working with Armenia, Tajikistan, Turkmenistan and Uzbekistan through the 2014–2015 Biennial Collaborative Agreement to strengthen preparedness and response to epidemic and pandemic prone diseases. This work is supported by donations provided through the Laboratory & Surveillance component of the Pandemic Influenza Preparedness (PIP) Framework Partnership Contribution Implementation Plan¹. The PIP Framework is a global approach to pandemic influenza preparedness and response, which aims to improve and strengthen the sharing of influenza viruses with human pandemic potential and to increase access to vaccines and other pandemic related supplies in developing countries.

There have been significant developments related to public health preparedness in recent years. Member States have been implementing, or are in the process of implementing, the International Health Regulations (IHR 2005) and reviews of lessons learnt have taken place after the influenza (H1N1) pandemic of 2009. There has been a growing recognition that many of the components of a sound pandemic preparedness strategy could be beneficial to other types of health threats. New emerging threats including Ebola and outbreaks of novel respiratory viruses (SARS, MERS) have highlighted this in recent years.

Under the aegis of the PIP framework, WHO/Europe aims to improve the capacity and capabilities of countries to rapidly detect, and respond to, outbreaks and pandemics in central Asian republic and Caucasus through development of national OIR guidelines and their implementation through training programs. The focus of the PIP framework is on influenza viruses with pandemic potential however a generic ‘all hazard’ approach is preferred in-line with the IHR which requires WHO Member States to develop and maintain capacities to prevent and respond to acute public health risks caused by any hazard.

In light of the above, the WHO Regional Office for Europe, together with the Robert Koch Institute (RKI) in Germany, arranged a workshop on outbreak investigation and response (OIR) on 16-18 December 2015 in Copenhagen, Denmark. The Agenda can be found at Annex 1.

Participants (Annex 2) included representatives from the national Sanitary Epidemiological Service or Communicable Disease Centre (head, deputy head, lead for outbreak response, national influenza focal point) and head of the faculty of the post-graduate training institute involved in outbreak response training; from Armenia, Tajikistan, Turkmenistan and Uzbekistan. Facilitation was provided by national officers from WHO country offices in each country and consultants from the RKI, Germany.

Scope and purpose

To assess national OIR capacities, a standard questionnaire (in-line with IHR 2005 core capacity requirements²) was implemented in Armenia, Tajikistan, Turkmenistan and Uzbekistan. The main conclusion was that there is a solid surveillance and response foundation to build on in all countries. Three main recommendations were reached from the assessment:

- (i) Conduct a focused review of the national surveillance system; with focus on early warning mechanisms.
- (ii) Conduct an assessment of existing guidelines and Orders (‘Prikaz’) for routine surveillance and outbreak response against IHR 2005 requirements.

- (iii) Provide updated multidisciplinary OIR training.

A number of factors, including (i) recent publication of international guidelines for surveillance, risk assessment and response, (ii) threats from novel viruses, and (iii) request from all countries for training for rapid response teams (RRT) indicated that revision of OIR guidelines and refresher training is a priority.

The focus of the three day workshop was therefore to determine countries OIR /RRT guideline and training needs, and to start addressing these needs. Specific objectives included:

- (i) Intercountry exchange on outbreak investigation and response guidelines and training in place,
- (ii) Introduction to best practises in operational guidance development: the main components of an outbreak response guideline,
- (iii) Review of national outbreak investigation and response plans and guidelines,
- (iv) Planning next steps for revision and implementation of operational outbreak guidelines.

An inter-active workshop program was designed around these objectives (Annex 1).

Summary of key sessions and discussions

1. National outbreak response mechanism

Each of the four countries presented the main components their national OIR system using a standard template provided. Laws and Orders ('Prikaz') covering national legal obligations for outbreak response, and recent training related to OIR were outlined. In general, there has been a focus on developing strategies and guidelines for pandemic and avian influenza, and for other dangerous pathogens, via vertical programs e.g. Plague, Cholera, Crimean-Congo Hemorrhagic fever, Rabies. For training, all countries deliver continued professional development training in conjunction with the post-graduate training institute and occasionally receive ad-hoc donor-funded training. Countries shared experiences on the frequency and content of training and the funding mechanisms.

Each country presented an example of an outbreak or event where the national OIR mechanism could be demonstrated: acute respiratory infection (Armenia), Polio (Tajikistan and Turkmenistan) and an imported Malaria case (Uzbekistan). All countries described the event and the investigations that had been undertaken, prevention and control measures implemented, improvements made to the system following lessons learned and the ongoing challenges for OIR. All countries highlighted the benefit of having a standardized urgent notification system which was the alert for all events. Participants also considered the following as important aspects: sensitive outbreak surveillance thresholds, standard investigation forms and guidelines, data management expertise, timely control measures, effective inter-agency communication and international reporting. Continuing challenges include limited lab capacity for (re-)emerging diseases, lack of human resources/high turn-over of specialists, adherence to infection control practices, lack of health facility surge capacity and logistical problems when cross-border restrictions are applied. OIR is considered to be complex and challenging work and therefore motivation and training of health care professionals needs to be continually addressed.

The discussion session included four key discussion points:

- (i) The need for generic OIR guidelines that are flexible enough to be used for emerging diseases
 - Strategies and plans developed for pandemic and Avian Influenza are now outdated (pre-pandemic H1N1 2009) and require revision.
 - New approaches are needed for emerging threats in which the response can be easily modified.
 - Generic deployment plans exist.
 - It is a lengthy and challenging practice to align different programs and work across ministries, both of which are required to meet IHR Requirements.

- (ii) Multidisciplinary RRT composition and mechanism
 - RRT exist at all levels: national, regional, district.
 - RRT are only mobilized when there is a high risk of spread or a high case fatality rate.
 - National level is always involved when there is a risk of international spread.
 - Each RRT comprises a core group of experts (e.g. Epidemiologist, Infectious Disease Clinician, Laboratory) with addition of specialists for certain threats e.g. vet for zoonoses.
 - Activities to be undertaken during OIR are taught during doctor's specialization training.
 - There is a generic approach/basis to the RRT mechanism and therefore a generic approach to OIR would also be useful.

- (iii) Networking and information exchange for early outbreak recognition
 - Uzbekistan and Tajikistan are part of the Shanghai Cooperation Organization (SCO) and send standard surveillance data (e.g. for Polio) to bordering countries also within the SCO each month. Armenia also exchanges information with SCO.
 - Web sites (incl. the weekly European influenza surveillance bulletin FluNewsEurope¹) and information exchange between IHR Focal Points are used as sources of information to monitor events in other countries.
 - Countries were in agreement that collaboration for sharing of information could be improved. Currently, the process cannot be timely as clearance from the relevant Ministries is required and because some information is considered confidential.
 - Informal information sharing may take place but this is unofficial and is built on personal relationships and cannot therefore be discussed.

- (iv) Reporting and response to public health threats and 'unusual events' by health care workers (HCW)
 - HCW know which diseases to notify/report as lists of notifiable and extra-ordinary diseases exist in Orders ('Prikaz'). However, it was noted by participants that respiratory diseases are often underreported.
 - It was agreed that there is a need for:
 - a legal definition of an outbreak,
 - clear instructions for HCW on when and how to report events (not only disease-based but based syndromes, and clusters in time and place),
 - instructions for when a response is required linked to assessment of the nature of the event.

¹ The former WHO Euroflu bulletin, and the ECDC European Surveillance System (TESSy).

2. Operational outbreak investigation and response guidelines

This session began with plenary presentation describing the importance and requirements of operational guidelines for an effective and coordinated approach to OIR. Such guidelines should include agreed procedures for effective implementation of OIR activities and also need to include the roles and responsibilities of key personnel and agencies. They should be technical, country-specific and detailed (covering who, what, where, when and how each activity should be conducted). The exact content and style of a guideline will depend on country needs and other documents available. A balance between comprehensiveness and usability must be reached. The process of development is an interactive one and will cut across many disciplines.

A discussion followed in which participants identified the following needs to make guidelines operational within their country context:

- Relevant specialists involved in drafting the guideline.
- Good practice examples from other countries, preferably in Russian, would enable the design of effective operational guidelines.
- Review of the draft guideline by end-users.
- Pilot testing of guidance before finalization.
- An instruction is required to enable publication and distribution.
- For guidelines involving Ministries other than MoH, approval is required from all Ministries and sometimes also from a higher level (e.g. Justice Department).
- Hard copy and digital version of the guideline to be shared with end-users. Also to publish on line if content is not confidential.
- For local level, instructions must be easy to follow because staff are multitasking.
- How any new guidelines integrate with existing Orders ('Prikaz') must be clear.
- Staff should be trained on the content and use of guideline as part of the medical curriculum and within continued professional development.
- Training of Trainers (ToT) is the preferred method to share guidelines to all levels because the local level is most in need of orientation.

3. Emerging respiratory virus scenario

An emerging respiratory virus scenario (case study) had been developed for use in the workshop to: (i) assist participants describe country-specific procedures required for outbreak investigations, (ii) find strengths and gaps in current national guidelines, especially for unknown respiratory pathogens, and (iii) to help determine which parts of plans are operational, and which are not.

As such, participants had been requested to bring national OIR documents including strategies, plans, methodological guidelines and SOPs (either generic or for Avian Influenza/Pandemic Influenza) for reference and use during the scenario.

It was acknowledged that all participants are OIR experts with knowledge and hands-on experience however transfer of knowledge to others is also important. One way of doing this is by providing the information in a guideline to ensure that knowledge is shared and that a number of people can perform the required outbreak investigation/response tasks.

The scenario consisted of injects of background information and 11 questions. Each question took participants through one of the steps in outbreak investigation. For each question, participants discussed the OIR actions that would be taken nationally and then mapped the

relevant instructions within their national guidelines to their answer. When gaps were found within national guidelines, a note was made in the 'gap analysis table' provided.

The first question and answer were conducted within plenary to orientate participants to the exercise. The background information provided was that a Provincial-level Infectious Disease hospital in Province A had reported that 20 pneumonia patients were seen at their facility in the last 2 weeks, and five cases had died. The cases came from three different districts in the Province. The first question the asked: 'SES/CDC are still on the telephone with the hospital. Which additional questions should national SES/CDC ask the hospital when hearing about this event? Where should the event information be recorded?' A lively discussion ensued whereby participants discussed the additional time, place and person information that would be needed and the various case-based epidemiological forms that exist for reporting. It was noted that there was a gap in national guidelines as an 'information gathering form' for SES/CDC to collect information on the event/outbreak (rather than individual cases) being reported did not exist.

On the second day of the workshop, the rest of the scenario was conducted in country groups with facilitation from WHO national staff and external consultants. The 'gap analysis table' was completed and collected from each country. Each country group presented their main findings from the scenario to the plenary.

One unique aspect of this scenario was that the emerging respiratory virus remained unexplained throughout the scenario as the country could not make a laboratory diagnosis.

Common findings reached by the four country groups were as follows:

- Current OIR guidelines/protocols are disease specific and cannot be easily applied to emerging or atypical pathogens, especially when the diagnosis remains unknown.
- Countries have a number of OIR Orders ('Prikaz') and protocols but the urgent information required during a response is scattered among these documents and therefore not easy to retrieve. It would be useful to link all relevant instructions together within one document.
- In some places, current guidelines are not detailed enough and information is not systematic (step-by-step) which makes instructions difficult to follow in urgent situations.
- Not all steps of OIR are covered in current guidelines, including: how RRT would organize its work, roles and responsibilities of RRT, legal definition of an outbreak, rapid risk assessment methodology, forming standard case definitions, infection prevention and control measures, transport and collection of samples, and sharing information between sectors incl. epidemiology and laboratory.
- The addition of practical forms (e.g. information gathering form for events/outbreaks), templates (e.g. for outbreak report, standard line list) and algorithms (e.g. for risk assessment) would be helpful tools and make guidelines more operational.
- A database for collection and analysis of outbreak epidemiological data, and training in its use, is needed.

After the scenario, best practice examples from three different operational OIR guidelines were presented and discussed including from Public Health England³, US-CDC⁴ and Lao PDR. Key sections in these guidelines were presented as examples, including: roles and responsibilities of key agencies and personnel, definition of an outbreak, instructions on when investigation should be conducted, the procedures for risk assessment, checklists for outbreak kits, how to confirm

the diagnosis, how to describe the outbreak, standard format for outbreak reports and instructions for control measures.

4. Planning next steps for development and implementation of operational outbreak investigation and response guidelines

Participants worked in country groups to develop an action plan for the development and implementation of the OIR guidelines. Common elements to these action plans included:

1. Development of the OIR guideline at country level rather than to adapt a generic format to country context, especially as most countries already have existing OIR Prikaz that can be modified. Participants noted that:
 - Any new guideline on OIR is required to be a legal instrument (Prikaz) as should be mandatory for specialists at all levels.
 - As Prikaz are legal, and therefore somewhat turgid documents, it is important to provide detailed 'methodological' guidelines as annexes.
2. Development of the guideline should be through a multidiscipline working group including all levels of SES/CDC. Participants noted that:
 - Membership of the working group should include RRT members, Field Epidemiology Training Program graduates, other relevant specialists and academic representatives.
 - Technical support from WHO would be welcome.
 - Other technical agencies working in the countries (e.g. USCDC, GIZ) should be invited.
 - Working group to be provided with best practice examples.
 - Working group members to receive training in guideline development during the process.
 - Process would take 3 months to 1 year, depending on country.
3. Prikaz to be implemented at all levels of MoH/SES.
4. Update postgraduate training curriculum and modules with the new materials.
 - Case studies should be developed to be used within postgraduate training.
 - Conduct ToT to all levels.

Most countries envisaged the main guidance document to be under the MoH and with the primary end-user as health care workers within SES/CDC and health care facilities. However, parts of the guideline will need to address inter-linkages with other Ministries e.g. for zoonoses. Multisector collaborations are important and emphasized under the IHR (2005). Some countries (e.g. Armenia) already have Prikaz and guidelines to address these collaborations. How the guideline is developed will therefore vary by country and it was suggested that the first step should therefore be a national scoping meeting to review existing Prikaz, and clarify the objective and end-users for the OIR guideline. This will then determine the membership of the working group for guideline development.

5. Ebola preparedness

Following a presentation by Dr Caroline Brown, Programme Manager for Influenza and other Respiratory Pathogens at WHO/Europe on her experiences as a Laboratory Coordinator during a recent Ebola mission in Sierra Leone, there was discussion about laboratory needs in countries. The upcoming training in transportation of infectious materials under PIP Framework was welcomed. It was clarified that Ebola testing can be done at BSL3 but needs to be done by those with expertise in BSL3 pathogens e.g. CCHF. The best strategy would be to ship samples to a WHO Collaborating Centre abroad, as would need to be done for confirmation in any case. Following a question about funds for transportation, WHO-Europe will confirm with WHO headquarters about the use of emergency shipment funds in the European-region.

The overview of the results from returned Ebola preparedness questionnaires was presented. When asked how WHO could further support preparedness, increased awareness among health care worker and the general public was considered as a priority e.g. financial support for printing of guidelines and posters, and implementation of risk communication strategies.

Conclusions

In general, response to the meeting was positive, and participants considered the scenario to be an important and educational exercise which led to the conclusion that although capacities for outbreak response have been developed, that more needs to be implemented for emerging and atypical pathogens.

At the end of the meeting, countries concluded that a national generic OIR operational guideline should be developed which is flexible enough to be used for emerging/atypical pathogens. In some countries, the aim would be to revise existing Prikaz (e.g. amendments and addition of Annexes) rather than developing a completely new document. Implementation of the guideline should be conducted through training on the guideline content by national post-graduate training institutes.

Funded by the PIP Framework Partnership Contribution, the WHO Regional Office for Europe, in collaboration with the RKI, will support PIP eligible countries in developing and implementing operational OIR guidelines in 2015.

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3. Communicable Disease Outbreak Management: Operational Guidance. Public Health England; 2014. (<https://www.gov.uk/government/publications/communicable-disease-outbreak-management-operational-guidance>)
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Annex 1. Agenda

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ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ
ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ БЮРО

**Outbreak Investigation and Response
Workshop, Pandemic Influenza
Preparedness Framework
Press Room, United Nations City,
Copenhagen
16-18 December 2014**

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19 November 2014

Original: English

Programme

Tuesday, 16 December 2014

- | | |
|-------------|---|
| 08:30-09:00 | Registration |
| 09:00-09:30 | Opening, status of PIP implementation and introduction of participants
(<i>Michala Hegermann, WHO Regional Office for Europe</i>) |
| 09:30-10:30 | Introduction to the Outbreak Response component of the PIP Framework
and summary of the situation in Member States (<i>Hannah Lewis Winter,
WHO Consultant Epidemiologist</i>) |
| 10:30-11:00 | Coffee break |
| 11:00-12:30 | Presentation by Member States on national outbreak response
(<i>30 mins per country, Armenia, Tajikistan, Turkmenistan</i>) |
| 12:30-13:30 | Lunch break |
| 13:30-14:00 | Presentation by Member States on national outbreak response cont.
(<i>Uzbekistan</i>) |
| 14:00-14:30 | Discussion on national outbreak response (<i>Moderator: Mohir Ahmedov,
WHO Consultant</i>) |
| 14:30-15:00 | Operational Outbreak Response Guidelines (<i>Hannah Lewis Winter, WHO
Consultant Epidemiologist</i>) |
| 15:00-15:30 | Coffee break |
| 15:30-16:00 | Discussion (<i>Moderator: Hannah Lewis Winter, WHO Consultant
Epidemiologist</i>) |
| 16:00-17:00 | Introduction to emerging respiratory virus scenario (<i>Andreas Gilsdorf,
Head of Surveillance Unit, RKI, Germany</i>) |
| 17:00 | Reception |

Wednesday, 17 December 2014

- 09:00–09:30 Organize groups for emerging respiratory virus scenario exercise: allocate chairman, note taker and reporter (*Armenia, Tajikistan, Turkmenistan and Uzbekistan*)
- 09:30-10:30 Scenario Exercise in country groups (*Armenia, Tajikistan, Turkmenistan and Uzbekistan*)
- 10:30-11:00 Coffee break
- 11:00-12:30 Scenario Exercise in country groups cont. (*Armenia, Tajikistan, Turkmenistan and Uzbekistan*)
- 12:30-13:30 Lunch break
- 13:30-14:30 Scenario Exercise in country groups cont. (*Armenia, Tajikistan, Turkmenistan and Uzbekistan*)
- 14:30-15:30 Country group feedback on Scenario Exercise (*30 mins per group, Moderator: Anna Pashalishvili, WHO Uzbekistan*)
- 15:30-16:00 Coffee break
- 16:00-17:00 Country group feedback on Scenario Exercise (*30 mins per group, Moderator: Sayohat Hasanova, WHO Tajikistan*)

Thursday, 18 December 2014

- 09:00-10:00 Planning next steps for completion of operational outbreak guidelines: country groups (*Armenia, Tajikistan, Turkmenistan and Uzbekistan*)
- 10:00-11:00 Country group feedback on next steps (*15 mins per group, Moderator: Jeren Myratdurdyeva, WHO Turkmenistan*)
- 11:00-11:30 Coffee break
- 11:30-12:00 Implementing outbreak guidelines: discussion incl. training needs (*Moderator: Hannah Lewis Winter, WHO Consultant Epidemiologist*)
- 12:00-12:30 Conclusions and Meeting closure (*Caroline Brown, WHO Regional Office for Europe*)
- 12:30 Lunch (canteen)

Annex 2. List of participants

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ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ
ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ БЮРО

**Outbreak Investigation and Response
Workshop**
**Press Room, United Nations City,
Copenhagen**
16-18 December 2014

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1 December 2014

Original: English

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