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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

MEETING REPORT

Outbreak investigation and response in the EU Stockholm, 3 – 5 April 2006

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INTRODUCTION

The Parliament and council regulation 851/2004 establishing a European centre for disease prevention and control (ECDC) called for an effective response to disease outbreaks through a coherent approach among Member States and input from experienced public health experts, coordinated at Community level. In order to do so, the ECDC shall identify competent bodies and public health experts who could be made available to assist in Community responses to health threats, such as field investigations in the event of disease clusters or outbreaks.

A consultation was called among the Member States (MS) in order to define the role of ECDC in outbreak investigation and response in various contexts, including multi-MS outbreaks with or without the presence of a dedicated surveillance network (DSN) involved in investigation, and outbreaks outside the European Union. (Annex 2)

Invited to the consultation were the MS epidemiologists, as well as international organizations involved in the response to outbreaks of communicable diseases. (Annex 1)

The role of ECDC in outbreak investigation and response

Outbreaks affecting a single MS

In most of the EU Member States, responsibility for outbreak investigation and control lies at the local or regional level. Epidemiologists collect and analyse data on outbreaks and cooperate with other responsible bodies, such as the environmental health office or the regional veterinarian in implementing control measures. For larger outbreaks, or for those that cover more than one region, the national surveillance institute is often called for assistance. In accordance with the principle of subsidiarity the ECDC is not involved in such intra-national outbreaks, except for providing training, guidelines and possibly expertise when requested.

Outbreaks threatening or affecting more than one MS

MS and the ECDC should be informed through EWRS if the investigation of an outbreak of national scope shows that:

- The contamination of cases may be related to an exposure that may affect other EU citizens (food product distributed in EU countries, environmental exposure in another country…);
- The outbreak is likely to spread in other EU countries because of its transmission mode and infectiousness.

Notification of these outbreaks is covered by annex II.2 of the Commission decision 2000/96/EC. The role of the ECDC consists of carrying-out a risk assessment at Community level to confirm the threat. In these situations, the ECDC should, in close collaboration with experts from MS:

- Play a leading role to ensure a coordinated approach to investigation and control;
- Cooperate closely with other EU agencies, notably the EFSA;

- Ensure proper communication through the network, with the Commission and the public;
- Offer assistance to the Member States involved.

When the outbreak is caused by a disease covered by a dedicated surveillance network (DSN), the ECDC coordination should be done through specific mechanisms agreed upon with those DSNs and the Member States.

Outbreaks outside the EU

When an international outbreak threatens to affect the EU, ECDC should lead the consultative process with MS and the Commission on the risk for the Union, in order to advise on the most appropriate preparedness and response measures. Furthermore, ECDC may be asked to provide support for the investigation and control of outbreaks occurring outside the EU.

Such requests may originate from:

- WHO regional office for Europe and headquarters through the Global Outbreak Alert and Response Network (GOARN), for outbreaks presenting an international public health threat. In these instances, the ECDC should identify relevant expertise in the Member States and ensure smooth communication with WHO to provide a list of suitable experts;
- A non-EU country requesting ECDC support. For such requests, the ECDC shall consider the pertinence of responding positively, on the basis of an added-value for the EU and in close collaboration with WHO to avoid duplication of efforts.

Roles of partners in outbreak detection, investigation and response

The roles of the actors involved are thus:

1. Member States

- Set up and maintain a surveillance system for all the diseases and health conditions listed in 2000/96 and 2003/534;
- Timely detection and control of outbreaks within its own territory;
- Report through the EWRS (2000/57), outbreaks that threaten to spread;
- Supply names of experts for an outbreak force roster.

2. ECDC

- Carry-out and disseminate though EWRS epidemic intelligence information for outbreaks within and outside EU that may present a threat to EU;
- Perform regular surveillance for outbreaks that may be appearing in more than one MS;
- Offer assistance to MS who may require it;
- Coordinate multi-MS outbreak investigations;
- Contribute to investigation and response teams called for by WHO to control non-EU international outbreaks;
- Identify and coordinate outbreak investigations teams for responding to bilateral request from non-EU countries;

– Develop a training strategy for EU outbreak assistance teams;
– Inventory and coordinate the development of guidelines pertaining to outbreak investigation and response.

3. Commission

– Consider and propose changes to the regulatory framework around Community surveillance and control (e.g. follow up and possibly revise Decision 2119/98);
– Initiate individual MS plans to control outbreaks;
– Take initiatives regarding common EC response (e.g. stock-piling of vaccines or drugs).

OBJECTIVES OF THE CONSULTATION

The main objectives of the consultation were:

– To define practically the support functions of ECDC in various scenarios of outbreak situations;
– To review the mechanism for mobilizing European expertise to contribute to outbreak assistance teams and to explore practical implications.

PROCESS

Case studies

In order to define the role of ECDC in the different contexts, the meeting participants worked in three groups on a practical case study referring to each one of these main contexts. The results of the working group discussions were presented to, and discussed with, all participants the next day in a plenary session.

1. Outbreak of multi-resistant *Salmonella Typhimurium* DT 104 in several MS in the European Union (Annex 3, page 12)

The objective of this case study was to identify the main players as well as their respective roles in the response to an outbreak of a communicable disease covered by a DSN that involved more than one MS.

The context presented refers to the identification of Salmonella cases with a particular anti-biogram at first in one EU country, and later in several other MS. The vehicle is finally identified to be a meat product produced in the first affected country, and exported to the others.

From the discussions related to the case study, the following points were raised:

- The internal organisation of a MS to respond to an outbreak differs between countries. It would be interesting to document these differences, as well as to compare best practices.

- The functioning of Enter-net will be under discussion, in relation to the establishment of the ECDC. Enter-net has proven its use on several occasions, in particular in case of unusual events with potential for international spread. The network is more informal than EWRS and an overload of messages is avoided through active moderation. The question was raised whether a similar functioning could be implemented for other diseases as well or whether this experience could be used to create a more generic communication system between state epidemiologists.
- While the national authorities are responsible for the national outbreak investigations, ECDC can provide support with scientific advice, and mediation in the provision of European human resources. In the longer term, ECDC can support the capacity and competence building in each MS.
- As for international outbreaks, the coordination and the leadership may be assured by ECDC and/or by the national authority of the country where the outbreak started, according to the decision of the different MS involved. Meetings related to the outbreak response are co-chaired by ECDC and the first affected country. In addition, ECDC can provide technical assistance and mediate the participation of European experts.
- Other partners to be kept informed of the outbreak investigation include WHO and the European Commission. The exact role and communication procedures between the national food safety authorities and EFSA or RASF would need more clarification. Finally, an outbreak investigation report should be published in Eurosurveillance.

In the plenary session several additional points were brought up:

- The need to establish a clear information flow with WHO, and to identify the department and persons to be involved.
- In case of international outbreaks, there should be a close collaboration between the ECDC and Enter-net, to discuss the magnitude of the outbreak and decide on the appropriate response.
- The need for rapid information exchange was stressed.

2. Outbreak of measles in several MS in the European Union (Annex 4, page 15)

The objective of this case study was to identify the main players as well as their respective roles in the response to an outbreak of a vaccine preventable disease across Europe.

The current situation of measles in Europe was used as a basis for the discussions, describing a cluster of cases in one country, and 2 imported cases to a second country.

The following criteria were identified for notifying an outbreak at EU level:

- Involvement of more than one MS, where it was stressed that MS need to be informed on what is going on in the other MS, even before the EWRS warnings;
- Risk or likelihood of spread to another country, related to travelling communities, or to specific groups with low vaccine uptake;
- Suspected vaccine failure;
- Sharing of relevant experience in the handling of outbreaks;
- Other criteria related to particular situations, such as the country elimination level, national surveillance capacity, etc.

It was concluded that instead of using criteria for notification on EU level, the use of algorithms would be more appropriate. The measles situation is different in each country, and benchmarks are needed.

In terms of communication flow, it was recognized that direct communication between affected MS is an important source of information. The ERWS tool should be used more correctly in order to avoid an overflow of information. The type of information to be communicated in case of an outbreak of European importance includes the reason for notification, an epidemiological description of the outbreak, overall incidence and incidence in specific affected groups, laboratory confirmation, immunization coverage among the cases and contacts as well as national coverage, possible risk for exposure in other MS, measures taken, etc.

The role of ECDC was linked to the current role of Euvac-net, as an intermediate channel. The group felt that the current objectives and contract of Euvac-net are not adapted to the needs, and the need for an early warning function was discussed. Expectations from the network included the need for timely information sharing between countries, including information on unusual events, enquiries or signals. Information exchange on this level needs to remain technical (epidemiological) and should not be political.

The group also saw a role for ECDC in assisting the MS to establish appropriate laboratory capacity, including diagnostic confirmation for surveillance purposes, as well as sequencing in countries reaching elimination. If requested by the MS, ECDC could provide technical support in the form of tools, guidelines, or algorithms, and create opportunities for more informal discussions between MS and ECDC. Finally, ECDC could play a role in assessing the need for further outbreak investigation, and in ensuring the continuous risk assessment outside Europe.

With regards to the leadership of an outbreak involving several MS, the group felt that the role of ECDC was to be decided on a case-by-case basis. The different affected countries should decide together who will take the leadership in a particular outbreak, while a more moderating role would be designated to the ECDC. In order to play such a role, ECDC needs to be informed and involved from the beginning. In case no agreement can be reached, or in case of lack of resources, ECDC could take the lead.

In the plenary session several additional points were brought up:

- Arguments were given for applying a very low threshold for notification of measles cases, although this would mean almost weekly notification for some countries. No clear criteria currently exist for when cases should be notified. However, it was stressed that timely information from all MS, would allow for data analysis and interpretation on EU level.
- The suggestion to decide the level of ECDC involvement on a case-by-case basis in a measles outbreak was extensively discussed. The need for clear regulations was suggested, and caution was raised with regards to the most affected country always automatically taking the lead.

3. Outbreak of avian influenza in humans outside of the European Union (Annex 5, page 18)

The objective of this case study was to identify all the main players as well as their respective roles in the response to an outbreak of a communicable disease that involves a non EU country.

The context of the case study described the occurrence of a cluster of potential human cases of avian influenza in a country with borders and intensive trade and travel relations with the European Union.

In case of an outbreak in a third country, the MS prefer to be informed through the institutional sources of information, such as the EWRS. Other stakeholders such as WHO, ECDC and laboratory networks should collaborate to ensure continuous fast and homogeneous information sharing on the risk assessment and risk management. Contact persons at national and international levels need to be identified.

Once an international outbreak investigation and response team is deployed, ECDC is expected to provide support through mediating EU expert participation, as well as through other (logistical) resources. Daily updates on the situation in the affected country and the outbreak management, from one common source, are considered very useful. If indicated, ECDC could provide standardized advice and guidelines, as well as other reference material. Finally, a role for ECDC is seen in support to help reduce pressure from media and politics, and to assist MS in preparing for particular international crisis situations.

Once the crisis is coming to an end, it will be ECDC's role to reduce the frequency of communications, and officially close the crisis. The past operations should be evaluated, and the lessons learnt should be shared. The crisis management tools that were developed should be made available to all MS, for them to adapt to their specific contexts.

In the plenary session several additional points were brought up:

- Risk communication is a separate issue from the technical communications, and both need to be coordinated. The use of secure websites can facilitate communication of confidential information.
- Through ECDC, the number of institutions for GOARN to draw on has increased. While direct communication between GOARN and its collaborating institutions is needed, ECDC should be kept informed of the outbreak response in order to play its role of common source of information for all MS. Similar regular ECDC updates directly from the field are perceived as very useful by MS who are not directly involved in the outbreak response.

ECDC standard operating procedures for the mobilization of outbreak assistance teams

The ECDC standard operating procedures (SOPs) for the mobilization of outbreak assistance teams, as introduced to the Advisory Forum members in November 2005, were briefly presented to all participants. In the discussion the following points were raised:

- Should ECDC have its own outbreak response teams?
- During an outbreak, the speed of response is essential. Therefore, active solicitation to assist in the outbreak response should be encouraged;
- The need for assessment capacity, to be available on very short notice, in order to evaluate the magnitude of the outbreak, was raised;
- In case of an outbreak of international importance, the role of ECDC depends on the capacity within and the request from the MS. In some instances it can be limited to providing specifically required expertise; in others it can go much further. If indicated, experts from outside the EU could be called upon as well;
- The suggestion was made to map the preparedness planning of each MS, in order to know the functioning of each MS during an outbreak response;
- The possibility for ECDC to provide funds to support specific outbreak response initiatives (e.g. supply of personal protection material, etc.) needs to be specified;
- For international outbreak investigations outside the EU, it is important to involve the European Commission and its institutions, since the Commission contributes in the outcome of the process, adopting some of the recommendations of the outbreak investigation.

CONCLUSIONS

Based on the group work and the plenary discussions, the role of ECDC in outbreak response may vary from coordinating the response or co-chairing it together with the most affected MS, to facilitating information sharing or even a moderating role. Different scenarios and different diseases imply different involvement of the ECDC, which would need more reflection. However, it was clear that information on European level needs to be translated into action on a European level. Participants saw an obvious role for ECDC to provide specific (technical) advice during an outbreak, as well as in the development of tools and guidelines. Human and financial resources may be mobilized, which builds European capacity. Whether through a direct link with the field through European experts, or through maintaining good relations with international partners, ECDC can centralize information on the ongoing outbreak in order to keep all MS informed on a regular basis.

One specific request from the meeting was the development of an epidemiological communication tool, as a complement to the EWRS. The purpose of this tool would be to facilitate (pre-EWRS) communication on epidemiological level between state epidemiologists, DSNs, WHO and other stakeholders, and to transmit urgent enquiries and keep track of previous investigations. Information to be shared through this channel includes information on epidemic intelligence as well as on the follow-up of an ongoing outbreak investigation.

A second main conclusion referred to the focus on the level of preparedness to outbreaks in each MS. ECDC can support the MS through the development of tools and guidelines, strengthening the national and EU laboratory capacity and through the provision of reference documentation such as lessons learnt and best practices from previous experiences, outbreak response framework models from MS, etc.

NEXT STEPS

Two main levels of action were identified to further define the ECDC support functions during outbreak investigations: the development of SOPs on the role of ECDC in multi-MS outbreaks taking into account the specificities of each disease, and the preparation of a simulation exercise to test these SOPs.

Standard operating procedures

In a first stage, generic framework SOPs on the role of ECDC in multi-MS outbreaks are to be developed. These generic SOPs will be applicable independent from the disease or the context. They will mainly refer to the communication flow during an outbreak (including all stakeholders involved), the organisation of the reporting procedures and the mobilisation of expertise. This generic framework will then be complemented in a second stage by disease-specific algorithms, adapted to the particularities of each scenario and context. In the development of the SOPs, IHR procedures need to be considered.

Simulation exercise

In order to test the SOPs, a simulation exercise based on a simple multi-MS outbreak will be prepared. This exercise should allow assessing the generic procedures and communication flows as well as the tools that were developed as part of the SOPs. The simulation exercise should take place end of this year or beginning 2007.

ANNEX 1: PARTICIPANT LIST

Name	Country
Manfred Dierich	Austria
Germaine Hanquet	Belgium
Chrystalla Hadjianastassiou	Cyprus
Jitka Castkova	Czech republic
Anne Mazick	Denmark
Kuulo Kutsar	Estonia
Frank van Loock	European Commission
Tran Minh Nhu Nguyen	Finland
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Brigitte Helynck	France
Henriette de Valk	France
Katrine Leitmeyer	Germany
Marta Melles	Hungary
Darina Oflanagan	Ireland
Fortunato Paulo d'Ancona	Italy
Vytautas Bakasenas	Latvia
Irina Lucenko	Latvia
Pierrette Huberty Krau	Luxemburg
Jim van Steenbergen	The Netherlands
Preben Aavitsland	Norway
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Margareta Slacikova	Slovakia
Eva Grilc	Slovenia
Fernando Simon	Spain
Anders Blaxhult	Sweden
Sofia Boqvist	Sweden
Karim Boubaker	Switzerland
Barry Evans	United Kingdom
Noel Gill	United Kingdom
James Stuart	United Kingdom
Roberta Andraghetti	WHO

ANNEX 2: PROGRAMME OF THE CONSULTATION

Day	Time	Activity
3 April	14:00-15:00	Opening of the meeting Background presentation on outbreak response in Europe
	15:00-15:30	Break
	15:30-17:30	Working group session on role of ECDC in outbreak response using 3 scenarios: multi-state outbreak in Europe, multi-state outbreak with existing DSN's procedures, international outbreak
	19:00	Dinner
4 April	09:00-11:00	Working group session on mechanisms and procedure for ECDC role in outbreak response
	11:00-11:30	Break
	11:30-12:30	Conclusions of the workshop

ANNEX 3: CASE STUDY ON MULTI-RESISTANT SALMONELLA TYPHIMURIUM DT 104 IN SEVERAL MS IN THE EU

Objectives of the case study

Identify all the main players as well as their respective roles in the response to an outbreak of a communicable disease covered by a Dedicated Surveillance Network (DSN) that involves more than one MS.

DISCLAIMER: This case study is an exercise and does not refer to a real outbreak. The names of countries or authorities are only used for the purpose of this exercise.

Part 1

On 28 October 2006, the Norwegian national reference laboratory identifies multi-resistant *Salmonella Typhimurium* DT 104 showing an identical resistance pattern (R-type: Amp-Chlor-Tet-Sulph-Strep-Nal) in 14 samples sent for typing by two hospital laboratories in which the cases have been admitted. This strain has never been identified in Norway.

Question 1: You are the head of the Norwegian public health laboratory. What do you do with this information?

A telephone conference with the head of the public health laboratory and the ENTERNET epidemiologist focal point is organized by the State Epidemiologist to assess the extent of the threat and decide on the actions to be taken. Such clustered cases in time and place suggest that a common source may be implicated. The fact that this particular strain has never been identified in Norway suggests that the source or the vehicle of the infection may involve another country.

Question 2: You are the ENTERNET focal point. What is your advice to the State Epidemiologist regarding the course of action to be taken?

The initial assessment resulting from the telephone conference confirms the impression that another EU member state or a third country may be involved. The group decides to inform the ENTERNET coordination for broadcasting an urgent inquiry to the network members.

Question 3: On which criteria do you decide to immediately inform ENTERNET?

Question 4: Which key elements do you include in the ENTERNET urgent inquiry request?

Question 5: Who needs to be informed? Through which channels?

Part 2

The ENTERNET focal point for Norway sends the available information about the cluster to the ENTERNET coordination centre, with copy to the State Epidemiologist and to ECDC.

Following ENTERNET procedures, an urgent enquiry is passed on to all focal points in the MS, to the European Commission DG SANCO, the ECDC, the WHO HQ and WHO EURO offices.

Fourteen cases of multi-resistant Salmonella Typhimurium DT 104 have been identified in Norwegian patients, showing an identical resistance type (Amp-Chlor-Tet-Sulph-Strep-Nal). All the cases have been admitted to two different hospitals in Norway.

The preliminary results of the epidemiological investigation show that most cases are adults. Five cases reside in Oslo and six cases in Bergen. The other three cases live in different small cities of Norway. No source of infection has been identified so far.

As this strain has never been identified in Norway, it would be interesting to know if other countries have information about cases or food products that can be associated with this outbreak. If you have any information that might be of use, please send this to XXX@YYYY, and copy to Enter-net@hpa.org.uk.

In response to the urgent inquiry launched by ENTERNET, The Netherlands reports nine isolates from Dutch patients and France, five from French patients. All of them share the same antibiotic resistance pattern. Meanwhile, a total of 47 cases with similar pattern have already been identified by the initial epidemiological investigation carried-out by Norway.

As the outbreak involves now several Member States, there is a need to involve these Member States in the epidemiological investigation.

Question 6: What can be the roles of the different players: Member States, ENTERNET, ECDC, the European Commission, WHO?

Question 7: What practical arrangements should be made for:

- *The coordination of the outbreak investigation?*
- *The conduct of the international outbreak investigation?*

Norway leads the epidemiological investigation, considering that they have had the first cases. According to the preliminary results, the source is a Norwegian meat product from a supermarket chain. All the patients have eaten this meat product bought in different supermarkets of the same chain, which buys it from one meat processing facility in Oslo.

Question 8: Who are the key players for the food investigation and the recalling of the product in each MS? Is it necessary to communicate these activities at the European level and if yes, who will you communicate this to?

On 6 November, Norway organizes the visits to inspect the chain of production. Several problems are identified in their Hazard Analysis and Critical Control Point Plan and contamination has occurred while processing one whole batch of this meat product.

Norway also organizes the recall of the entire affected batch that has been distributed in the supermarkets of the involved firm. It is suspected that this meat has been distributed to other countries.

Question 9: If the meat product has been distributed to other countries in Europe, what would be the actions regarding the possible exposed persons in these countries?

By 9 November, a total of 65 cases had been reported by five different countries: Norway, Poland, Spain, United Kingdom and The Netherlands. Norway prepared an epidemiological report.

Question 10. How to share the lessons learnt in this outbreak with the MS?

ANNEX 4: OUTBREAK OF MEASLES IN THE EUROPEAN UNION

Objective of the case study

Identify all the main players as well as their respective roles in the response to an outbreak of a vaccine preventable disease across Europe.

DISCLAIMER: This case study is an exercise and does not refer to a real outbreak. The names of countries or authorities are only used for the purpose of this exercise.

Background: current situation of measles in Europe

The observation of the last few outbreaks of measles in the EU or surrounding countries is an interesting starting point for discussion of the investigation of, and response to, an outbreak of vaccine preventable diseases.

EWRS notification in 2006

1. 27/03/2006, Tallinn, Estonia: Between 13 and 27 March 2006, 9 laboratory confirmed cases of measles. No cases of measles notified since 2001 apart from two cases in 2005 (one imported).

2. 17/03/2006, South and West Germany: since January 2006, 58 cases in Greater Stuttgart reported and 149 cases in North Rhine Westphalia; laboratory investigation in 7 outbreak cases revealed measles genotype B3. Older children and adolescents are predominantly affected: 88 cases are 10 to 19 years old, 24 cases 20 years and older. 35 cases were hospitalised.

3. 03/03/2006, Copenhagen, Denmark: since late January 2006, 7 cases of measles notified. State Serum Institute (SSI) informed by SMI (Sweden) that at least one of six measles cases in Helsingborg, south-east Sweden, may be epidemiologically linked to the Danish outbreak. Identification of B3 by sequencing, indicating that the Danish outbreak and the German B3 MVs belong to distinct chains of virus transmission.

4. 19/01/2006, La Rioja Spain: 11 to 13 of January 2006, 4 cases identified. The source of infection has been later identified to be a 32 years old medical doctor, with onset date on 25 December 2005.

5. 29/07/2005, North Portugal:

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1. Greece, Eurosurveillance, 23 February 2006: from 1 September 2005 to 12 February 2006, 171 cases reported; 53 (31%) have been laboratory confirmed, 99 (58%) are probable cases. Around 50% of the cases are among Roma communities

2. Ukraine, Eurosurveillance, 9 March 2006: 19,673 cases of measles had been reported by WHO; 17,281 (88%) occurred during January and February 2006.

3. Madrid, Spain, March 2006: Between 26 January and 16 March 2006, 59 cases of measles were notified in the Autonomous Region of Madrid, Spain.

In a Nutshell:

- Measles, like Rubella is a disease under elimination. Some EU countries have achieved the goal of interrupting endemic transmission though very high vaccine coverage. But there is still evidence of measles transmission within EU and various continents.
- Measles outbreak may not be perceived from the beginning as an international threat and notification frequently occurs when the number of cases is already substantial. EWRS, EUVAC.NET and Eurosurveillance reports are the main ways of transmitting information to the other Member States. EWRS is a tool to inform European countries on acute potential threat. EUVAC.NET collects monthly data on measles cases.
- There is a need for a common approach in timely monitoring occurrence of measles cases, coordinating epidemiological investigation, active case finding, follow-up of contacts and appropriate control measures.
- The ECDC has a mandate to improve monitoring of disease occurrence and support for the response of communicable disease representing a European threat. Therefore, the role of ECDC in supporting Member States in the most appropriate need to be better defined in the context of national and international outbreak of measles and other vaccine preventable diseases.

Part I

In the context of the epidemiological situation of measles in the EU presented above,

Question 1: What would be the criteria to define an outbreak of measles of international importance that needs to be notified at EU level (see criteria for notification to EWRS)?

Question 2: What is the role of ECDC in supporting the assessment of a specific situation in a country?

Question 3: What should be the role of ECDC to timely monitor occurrence of measles outbreaks across Europe and facilitate a timely response given the objective of measles elimination?

Part II

A cluster of measles has been identified in a country A in a primary school. The initial assessment shows that 2 cases were in a neighboring country B during their incubation period and therefore, have probably acquired the infection in this country and imported it in Country A. The country B has not notified any cluster.

Question 4: What type of information should be provided by the country with measles occurrences to timely inform the other countries? What should be the flow of information for early warning purpose?

Question 5: Who should conduct the investigation when various countries might be affected by the same outbreak?

- *Who should take the lead in case of international investigation?*
- *Who should be the partners in such investigation?*
- *What possible assistance could be provided for the investigation at country* level?

Question 6: What information related to the investigation should be made available, how and to whom?

- *Who centralizes information?*
- *How the information should be shared?*
- *Who has access to what?*

Part III

A specific subgroup of population was identified during the investigation in Country A and B as being at increased risk. They belong to Roma communities, who are known to have poor access to healthcare and therefore poor vaccine coverage. These communities are present all over Europe.

In this specific context,

Question 7: What are the criteria to implement internationally coordinated control measures and who should be involved?

Question 8: Who should coordinate control measures and how operational decision should be taken?

Question 9: What information related to the monitoring of control measures should be made available, how and to whom?

- *Who centralizes information?*
- *How the information should be shared?*
- *Who has access to what?*

ANNEX 5: OUTBREAK OF AVIAN INFLUENZA IN HUMANS OUTSIDE OF THE EUROPEAN UNION

Objectives of this case study

Identify all the main players as well as their respective roles in the response to an outbreak of a communicable disease that involves a non EU country.

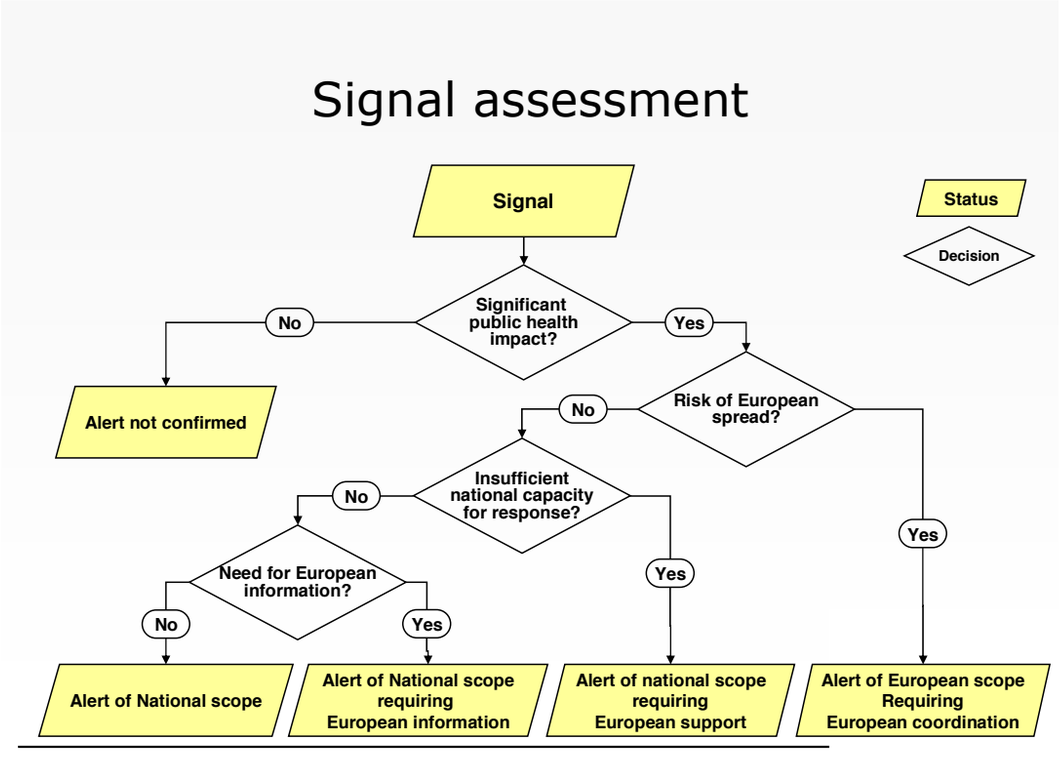
DISCLAIMER: This case study is an exercise and does not refer to a real outbreak. The names of countries or authorities are only used for the purpose of this exercise.

Part 1

On 2 April 2006, WHO EURO in Copenhagen informs ECDC, the European Commission and relevant partners (e.g. EISS) about a cluster of potential human cases of avian influenza in country with borders and intensive trade and travel relations with the European Union. The cases are 3 children from 4 families in 2 neighboring villages located 200 km from the nearest border to the EU. All cases had contact to sick poultry. A/H5N1 outbreaks in poultry have been confirmed in the region since February 2006. From the initial assessment, there is no evidence for person-to-person transmission. The National Influenza Centre has confirmed the human cases as A/H5N1 using RT-PCR. Specimens have been sent to the WHO reference laboratory in Mill Hill, UK.

Question 1: Who do you expect to get the outbreak information from (5 minutes)?

Question 2: Once you have received the information, what actions do you expect from ECDC, WHO EURO and other international organizations (25 minutes)?



Part 2

On 4th April 2006, the WHO reference laboratory in Mill Hill, UK, has confirmed the human cases as A/H5N1. Meanwhile, 7 more children and 3 adults are under investigation as potential A/H5N1 cases. The Global Outbreak and Response Network (GOARN) issues a call for experts to contribute to an international outbreak investigation team, which ECDC forwards to the MS. The Commission has asked MS through EWRS about intended measures at this point.

Question 3: What do you expect from ECDC and other international organizations in this situation (20 minutes)?

Part 3

On 6 April 2006, an interdisciplinary international WHO/ECDC/MS team including human health and veterinary experts has arrived at the site of the outbreak. The initial investigation in the country confirms that there is no evidence for person-to-person transmission.

Question 5: Who do you expect to receive information from (10 minutes)?

Question 6: What other type of support do you expect and from whom (15 minutes)?

Part 4

On 7 April 2006, 3 more cases, 2 children and 1 adult, have been confirmed with A/H5N1 in the region of the outbreak. In addition, 5 MS report returning travelers with potential avian influenza symptoms from the country affected by the outbreak. Within the next 48 hours, one of the cases is confirmed as A/H5N1, all others have seasonal influenza or other respiratory infections. The confirmed case is a close relative of one of the cases in the country outside the EU. The imported case had recently returned from a visit in that country where he was in close contact with poultry in the village with the outbreak (no indication of person-to-person transmission).

Question 7: The import of a confirmed case with H5N1 in a MS has changed the situation. What is needed now on an international level (15 minutes)?

Question 8: How would you react in your country (10 minutes)?

Part 5

On 11 April 2006, the MS with the imported A/H5N1 case informs in a EWRS message that the patient has recovered. The contact investigation shows that this was an isolated case. In addition, no further human cases are reported from the country outside the EU. The international team assists the country for a period of 2 weeks.

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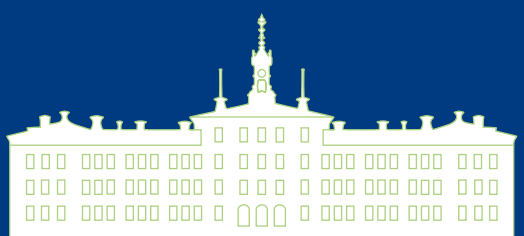

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