

Stockholm 13 October 2005

## ECDC MANAGEMENT BOARD

### 4th Meeting, Budapest, 27-28 October 2005

<b>Document:</b> Improved detection and monitoring of emerging health threats in Europe: ECDC epidemic intelligence operations	
<b>Date:</b> 13 October 2005	<b>Reference:</b> MB4/14/12
<b>To:</b> Members of the Management Board	<b>From:</b> ECDC
<p><b>Action:</b> for information</p> <p>This document was presented to Preparedness and Response working group of the ECDC Advisory Forum on September 29 and discussed with the full Advisory Forum on 30 September 2005. As a result, the following recommendations were issued by the AF:</p> <ul style="list-style-type: none"> <li>- The weekly ECDC bulletin on threat tracking should be posted on the EWRS</li> <li>- The bulletin should include a threat assessment for Europe for each threat</li> <li>- The bulletin should be distributed to MS institute in charge of epidemic intelligence, keeping EWRS messages confidential</li> <li>- The AF supported the proposal to have a European meeting on epidemic intelligence in January 2006, and recommended that Chief medical officers as well as State epidemiologists be invited</li> </ul>	
<p><b>Summary:</b> Epidemic intelligence is the process of detecting, verifying and assessing public health events that may present a threat to public health. The document presents the conceptual framework used to implement these activities in the Centres, as well as the sources of information, the tools and procedures developed, the agreements developed with Member States, the European Commission and the WHO. Future steps in the implementation of Epidemic intelligence activities are outlined.</p>	

# ECDC epidemic intelligence operations

## 1. ECDC MANDATE

The ECDC founding regulations<sup>1</sup> specifies the mandate of ECDC regarding risk identification and risk assessment. Under this regulation, the Centre shall:

- identify and assess emerging threats to human health from communicable diseases;
- establish, in cooperation with the Member States, procedures for systematically searching for, collecting, collating and analysing information and data with a view to the identification of emerging health threats which may have mental as well as physical health consequences and which could affect the Community;
- support and assist the Commission by operating the early warning and response system (EWRS);
- analyse the content of messages received by it via the EWRS;
- take action to ensure that the early warning and response system is efficiently and effectively linked with other Community alert systems (e.g. animal health, food and feed and civil protection);
- provide information, expertise, advice and risk assessment;
- inform the Commission and Member States as soon as possible about findings which require their immediate attention.

In order to fulfil this mandate, the management board prepared a work plan for the ECDC, which defines the tasks to be carried-out. In the field of epidemic intelligence, the following were identified:

- Link up to the EWRS system.
- Set up a 24h/7day permanent on-duty system.
- Agree with the Commission on a standard operating procedure (SOP) for the handling of incoming messages.
- Agreements for co-operation with the Commission, Member States and international partners (WHO) that provides for the continuous search and exchange for relevant information and best practice around the world from available sources.

This document describes the operating procedures implemented in the Centre.

## 2. EMERGING THREAT MONITORING

Epidemic intelligence can be defined as the process to detect, verify, analyze, assess and investigate public health events that may represent a threat to public health. It encompasses activities related to early warning functions but also signal assessments and outbreak investigation. Providing early warning signals is a main objective of public health surveillance systems.

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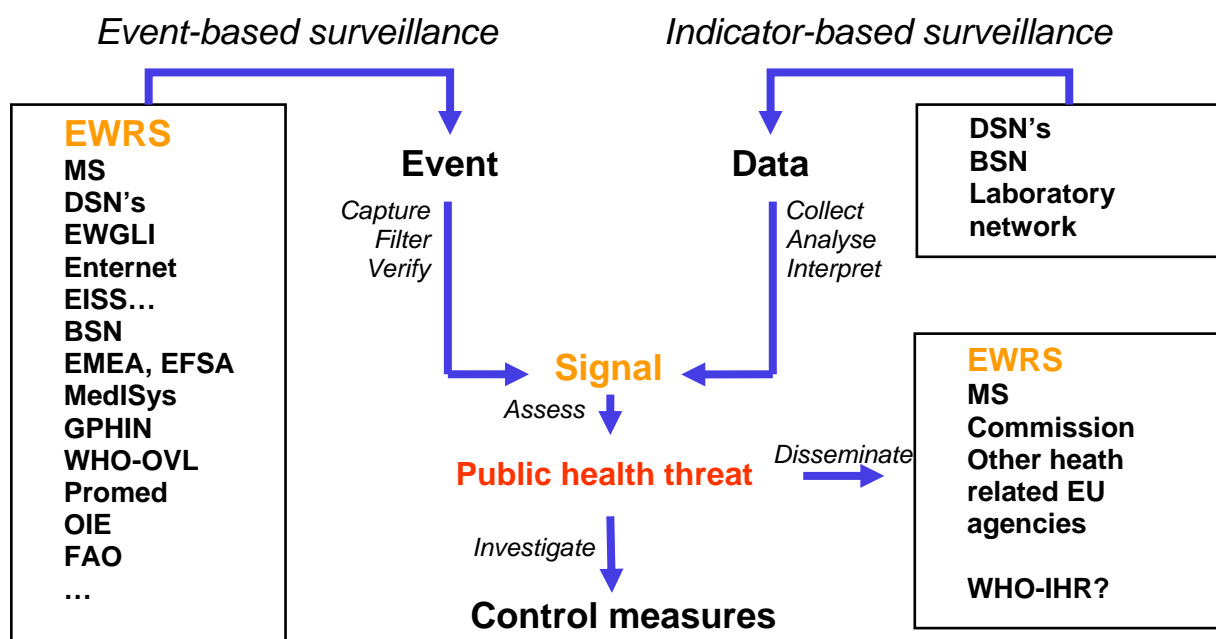
<sup>1</sup> 851/2004/EC (Article 3, paragraph 1; 5, paragraph 4; Article 8, Paragraphs 1-2, Article 10, Paragraphs 1 and 3)

## 2.1. Nature of events monitored

The nature of public health events to be monitored is dual in nature. It should include events detected through traditional surveillance systems, routinely collecting morbidity and mortality data as well as public health events captured through ad-hoc unstructured reports issued by formal or informal sources.

Traditional surveillance is referred to as **indicator-based surveillance** as it implies the computation of indicators upon which events to investigate are detected (number of cases, rates, proportion of strains...). Detection of events based on the capture of ad-hoc reports is referred to as **event-based surveillance** (see figure).

**Figure 1: Epidemic intelligence conceptual framework**



## 2.2. Source of events monitored

Given its European perspective, and under the principle of subsidiarity, ECDC is collecting information for the detection of threats from European sources:

- **Indicator-based surveillance:**  
The main source of information are the dedicated surveillance networks (DSN), particularly those with a strong early warning component: EWGLI, ENTERNET and EISS
- **Event-based surveillance:**  
Sources for event-based surveillance include
  - Calls received by ECDC duty officer (24/7) to report an event
  - The Early Warning and Response System (EWRS)
  - Additional rapid alert EU dissemination tools: RASFF (food and feed), ADSN (animal diseases), RELEX (external relation crisis management)...
  - European bulletins monitored through Eurosurveillance weekly

- Partner agency alert dissemination tools: WHO outbreak verification list, Pacific network forum, OIE...
- Epidemic intelligence distribution lists: PROMED
- Specialised Web crawlers: MediSys, Gideon, GPhin
- Human network of MS epidemic intelligence officers

### 2.3. Risk assessment for Europe

Signals detected through these sources, after verification (event-based surveillance) or analyse and interpretation (indicator-based surveillance) are assessed to determine the risk that they pose to European citizens and allow defining the resulting actions.

The following criteria are used for this assessment:

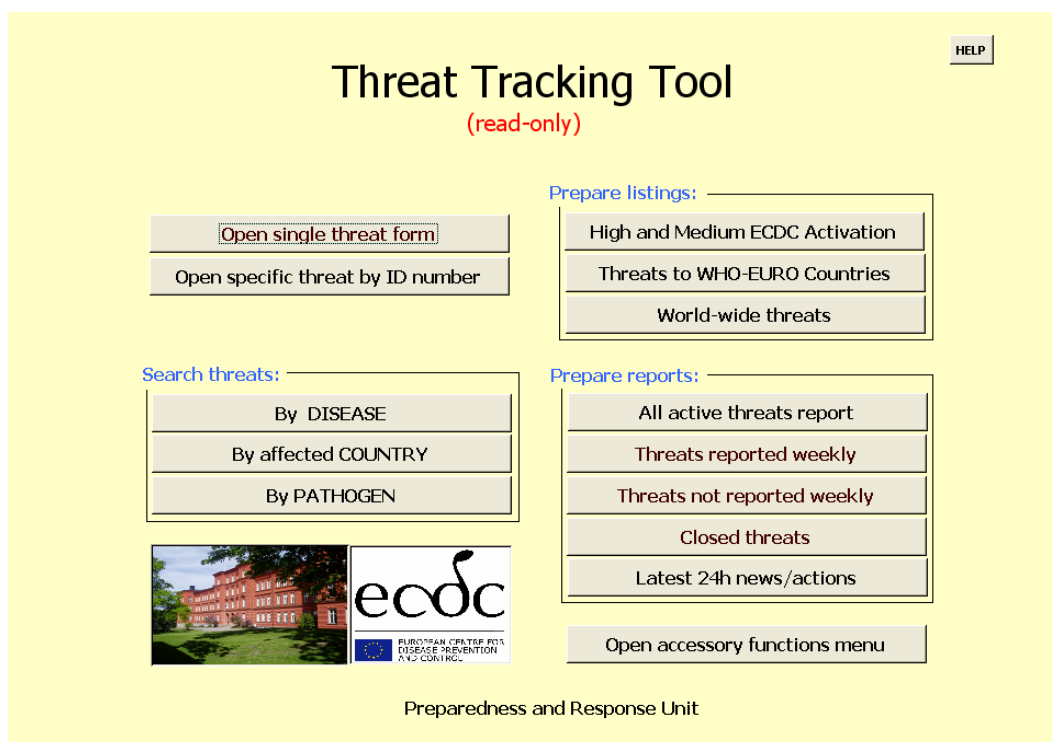
- Events affecting more than one member state
- Events known to have a potential for spreading within the community
- Events affecting non-EU countries, but presenting a potential for spread within the EU
- Events affecting one Member States and potentially requiring assistance from ECDC for verification and investigation
- Events related to a potential unusual mode of transmission (deliberate release...)

## 3. TOOLS AND OPERATING PROCEDURES

### 3.1. The threat tracking tool

A threat tracking tool was designed and developed by ECDC to facilitate the capture, verification and assessment of public health events of relevance.

**Figure 2: the ECDC Threat Tracking Tool**



The registration of a threat is done using a partially structured data entry form:

- **Structured data** includes place and date of occurrence, source of detection, nature of the event, tracking status (under verification, active, closed)
- **Unstructured data** include contacts person, initial description, follow-up information and a summary which appears in the daily and weekly bulletin.

Outputs of the application include:

- Daily summary bulletin, summarizing all active threat information and used to during the daily briefing to review threat status
- Daily update bulletin which outlines new developments in the previous 24 hours
- Weekly bulletin, for distribution internally and to the European Commission. The distribution of the bulletin will be extended to Member States after discussion with the EWRS Member States representatives. A sample weekly bulletin is presented in the document named “AF3-4-2 Sample Weekly Report.pdf”
- Ad-hoc listing of threats, by date and status
- Search engine based on time and place of occurrence or disease and pathogen

### **3.2. Operating procedures**

#### **Daily briefing**

Epidemic intelligence activities are centred on the daily EI briefing which takes place daily at 10:30. The meeting is chaired by the epidemic intelligence officer and attended by all those who want within the Centre. Decisions are taken on the basis of the advice of ECDC staff attending the meeting.

The objectives of the daily meeting are:

- To present newly detected events and decide on their inclusions for follow-up
- To review every active threat, provide update, and follow-up of actions decided during pervious meetings
- To assign specific verification or assessment tasks to relevant staff and unit in ECDC
- To identify threats that may require an activation of the ECDC public health event operation plan, and liaise with the executive management team and Director in this eventuality
- To decide to remove a threat from the active list of threats for follow-up

#### **Weekly conference call with EC**

Every Friday morning, a conference call with the Commission is held, to jointly review current threats and prepare the Epidemic Intelligence Weekly Report for the EC Commissioner.

#### 4. FEEDBACK

The dissemination of public health threats is done through various means, according to their level of confidentiality, verification, need for action and target audience.

- **EWRS**  
The EWRS is the channel for confidential information to the representative of Member States health authorities.
- **Weekly bulletin**  
The weekly bulletin is the tool for providing information to the National surveillance centres. This will be implemented after seeking advice of the advisory forum members and obtaining validation of the content and process by the EWRS representatives
- **Eurosurveillance**  
Eurosurveillance weekly edition includes an e-alert section meant to disseminate rapid information about on-going threats requiring broad information of public health officers in the MS. This is done by the Member State epidemiologist.
- **Annual report**  
ECDC will collaborate with the commission to produce the 2004 and 2005 EWRS annual report. In addition, ECDC will produce an annual report on threats.

#### 5. UPDATE ON THREATS

The alert tracking function was implemented in May 2005. Table 1 present a summary of the threats processed, as of 6 September 2005.

**Table 1: summary information on threats processed at ECDC,  
27 May – 6 September 2005**

<b>Indicator</b>	<b>Value</b>
Number of threats processed	61
Follow-up records on threats	426
Threats having required ECDC specific interventions	9

#### 6. AGREEMENT WITH EPIDEMIC INTELLIGENCE STAKEHOLDERS

##### 6.1. Member States

ECDC is planning a meeting on epidemic intelligence in January 2006, to formalise the agreement with Member States.

The meeting will involve representative of the MS in charge of epidemic intelligence activities, and European and international partner agencies. The objectives of the meeting will be:

- To strengthen the human network of epidemic intelligence officers in Europe
- To establish an informal rapid information exchange mechanism with the MS
- To determine the feedback mechanisms for regular information of the MS

- To capitalize on the experience acquired by MS on epidemic intelligence, in term of organisational models, source of information used, verification mechanisms...
- To define the added value expected by MS from ECDC
- To consider areas of harmonisation of epidemic intelligence process among the MS

## **6.2. The European Commission**

The procedures for communication on public health threats with the European Commission have been defined and are operational since June 2005.

Collaboration mechanism relies on

- a weekly teleconference with C3 unit to review current threat and jointly prepare the epidemic intelligence weekly bulletin for the Commissioner
- ad-hoc calls and teleconferences when required
- the operations of the EWRS to assist the Commission

## **6.3. WHO**

ECDC has established collaboration mechanism with the WHO regional office for Europe and the Alert and response department of the WHO headquarters in Geneva. Under this agreement, the WHO outbreak verification list is provided routinely to ECDC and access to EWRS is granted for WHO, subject to the decision of each Member states.

## **7. FUTURE DEVELOPMENTS**

Future development in epidemic intelligence includes:

- The development of a secure internet-based application for the monitoring of threats
- Consulting Member States on epidemic intelligence issues to develop a joint European plan of action (January 2006)
- Strengthening the connexion to outbreak investigation by developing the mechanisms for mobilizing outbreak assistance teams at EU and international level
- Integrating the epidemic intelligence operations in the ECDC crisis operation room (2006)