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**REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN
PARLIAMENT**

**On the operation of the Early Warning and Response Systems (EWRS) of the
Community Network for the epidemiological surveillance and control of communicable
diseases during years 2004 and 2005 (Decision 2000/57/EC)**

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(Text with EEA relevance)

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1. INTRODUCTION

Decision 2119/98/EC¹ has established the Early Warning and Response System (EWRS) as a function of the Community Network for the epidemiological surveillance and control of communicable diseases. Decision 2000/57/EC² states that the EWRS is reserved to events endowed with Community relevance, as specified in its Annex I, and establish the EWRS operational procedures. Each Member States designate the formal contact point of the structure and/or the authorities referred to the early warning and response function and they notify the Commission and the other Member States (Art 9, 2119/98/EC). Following the notification the contact points receive from the Commission a login and a password to access the system with a full authorization to write and read the messages³ in the system.

Article 3.1 of Decision 2000/57/EC states that the competent Authorities in Member States shall submit yearly, not later than 31 March, an analytical report of the events notified within the early warning and response system. It states also that the Commission shall, on the basis of the reports, examine in an annual report the operations of the EWRS and if necessary propose changes thereto (Article 3.2).

This report examines on the operation of EWRS during 2004 and 2005. It draws conclusions from the reports submitted by the Member States and from experiences with the operation of EWRS during the mentioned period.

2. EWRS OPERATIONS

2.1. Events notified in 2004

During 2004 a total of 105 events were notified through the EWRS. Test messages circulated to check the functioning of the system and service communications have been excluded by the analysis.

Out of 105 messages, 30 were information messages, 32 activation level 1⁴ messages, 18 activation level 2 messages and 3 activation level 3 messages; 22 messages were related to measures undertaken to respond to specific situations (intended measures, adopted measures and coordination of measures). The geographical origin of the events which triggered the notification mechanism was as follows: 12 in France, 11 in Viet Nam, 7 in Netherlands, 6 in China, 5 in Italy and Germany, 4 in United Kingdom and Spain, 3 in Austria, Belgium and Egypt, 2 in Finland, Norway, Thailand and United States, and 1 in Greece, Ireland, Lithuania, Sweden, Portugal, Poland, Latvia, Hungary, Iceland, Turkey, Brazil, Morocco, Senegal, Saudi Arabia, Japan, Israel, Dominican Republic, Canada and Indonesia. Two messages were related with events occurring in more than one country in Asia. Four were in the 'unlisted' category of messages, 3 were in the 'non applicable' and 2 in the 'unknown' one.

¹ OJ L268, 03.10.1998, p.1

² OJ L21, 26.01.2000, p.32

³ Bulgaria and Romania and European Economic Area countries (Iceland, Lichtenstein and Norway) are part of the EWRS network.

⁴ Activation levels are defined in Annex II of Decision 2000/57/EC

Concerning the repartition of the events per disease or syndrome 21 were related to influenza, 8 to legionellosis, 6 to vCJD and salmonellosis, 5 to acute diarrhoea, 4 (4%) to tuberculosis and meningitis, 3 to cholera, and hepatitis, 2 to anthrax, encephalitis, malaria, rabies, haemorrhagic fever, dengue fever, measles and fever, 1 to diphtheria, shigellosis and mumps. Twenty four were the messages in the 'unlisted' category of diseases and 2 in the 'not applicable' one. The repartition of the messages per pathogen reflects the distribution per disease or syndrome. A total number of 157 comments have been posted to follow up the events notified.

2.2. Response and follow up of the events notified in 2004

Only few events notified in 2004 prompted specific measures at Community level. Most of them were controlled by applying public health measures at national level. Nine events required a more complex response, involving coordination of measures and contacts between health authorities in Member States. These events have been followed up adequately and the large majority of the comments received through the EWRS were related to them (126 out of 157 comments, 82,2%). The notified events have been rarely 'closed' by an official message.

The following paragraphs report a brief summary of these 9 events.

- 2.2.1. Two outbreaks of legionellosis were communicated by Italy and Germany. Both outbreaks were associated to cruise ships requiring urgent contacts among health authorities to trace back all the persons who have been exposed to the source of infection and to alert the health authority in the Member States in order to plan timely measures in the ports of destination.
- 2.2.2. Six messages and 55 comments (35% of the total number of comments) were circulated following the notification of the first human cases of the highly pathogenic avian influenza virus type A/H5N1 in Vietnam. This event announced the rapidly expanding epidemic of avian flu in Asia. The regular circulation of messages through the EWRS and the organisation of frequent teleconferences in close collaboration with WHO allowed Member States and the Commission to be regularly updated about the evolution of the situation and on the measures undertaken at National level and strengthened a coordinated response at Community level.
- 2.2.3. Two events associated with West Nile virus infection were notified by Ireland and France respectively. The first one was related to an Irish citizen who was infected in the Algarve region (Portugal) and it was followed up closely by Ireland and Portugal with the coordination of the Commission. The second one reported a number of West Nile cases in sentinel animals in Sainte Marie de la Mer (South of France). Both the events were promptly communicated through the system and the concerned Member States undertook measures to strengthen surveillance and to activate contingency plans at national level to minimize the risk of West Nile virus infections in humans including its transmission by blood transfusions.
- 2.2.4. In August France notified an event associated with a rabid dog illegally introduced in the EU. The dog bit or had close contacts with several persons, including children, in different tourist areas of France. In that occasion the information received by France through the EWRS was of pivotal importance to inform in detail the health authorities in Member States in order to undertake all the measures to trace the persons who had contacts with the dog and vaccinate them.

- 2.2.5. An outbreak of hepatitis A that clustered in an Egyptian resort was notified by Germany in August. The outbreak involved 274 confirmed cases from 7 Member States plus Switzerland. This event raised the issues of the potential risks for EU citizen when travelling abroad, especially in tropical and subtropical areas and the use of potential information which could be disseminated through the travel agencies in the EU.
- 2.2.6. In October 2004 two birds of pray coming from Thailand and infected with the highly pathogenic avian influenza virus type A/H5N1 were intercepted at the Zaventem airport in Bruxelles, hidden in the hand luggage of a passenger. Following the confirmation of the infection the Belgian health authorities posted an alert message through the EWRS to allow Member States implementing activities to trace the passenger who were on the same flight and who had been potentially exposed to the virus. Twenty two comments from 11 Member States have been received to follow up the event. Several passengers were traced back but no influenza A/H5N1 cases have been identified.
- 2.2.7. On 5 July 2003 the World Health Organisation reported that the last human chain of Severe Acute Respiratory Syndrome (SARS) transmission had been broken. However since July 2003 SARS reappeared in four occasions. Three incidents have been attributed to breaches in laboratory bio safety (Singapore, Taipei and Beijing) and one (Guangzhou, China) was associated to exposure to animal and environmental sources. Commission services notified the SARS related events in 2004 through the EWRS and measures to prepare and respond to a potential return of SARS have been strengthened at Community level, including issues related to laboratory bio safety.

2.3. Events notified in 2005

A total of 103 events were notified through the EWRS during 2005. Out of the 103 messages, 36 were information messages, 49 activation level 1 messages and 7 activation level 2 messages. No activation level 3 messages have been notified in 2005. Eleven messages were concerned with measures undertaken to respond to specific situations (intended or adopted measures and coordination of measures). The geographical origin of the events which triggered the notifications was as follows: 12 in France, 5 in Spain, United Kingdom and Sweden, 4 in Germany and Denmark, 3 in Lithuania, Netherlands and Portugal, 2 in Estonia, Greece, Poland, Finland, Norway, Turkey, Angola and Russian Federation, 1 in Ireland, Italy, Latvia, Czech Republic, Romania, Croatia, Nigeria, Comoros Islands, India, Botswana, Canada, the Democratic Republic of the Congo, Viet Nam, United States, Ukraine, Egypt and Cuba. Six messages were related with more than one country in Europe (including Member States) and 20 were in the 'non applicable' category.

Concerning the repartition of the events per disease or syndrome 15 were related to salmonellosis, 13 to influenza, 10 to acute diarrhoea, 5 to legionellosis and measles, 4 to vCJD, 3 to cholera, meningitis and fever, 2 to haemorrhagic fever, haemolytic uremic syndrome, malaria, shigellosis and rabies and 1 to anthrax, hepatitis, food intoxication, melioidosis, sexually transmitted infection, rubella, plague, encephalitis, diphtheria, and botulism. Seventeen were the messages in the 'not applicable category and 5 in the 'unlisted' one. As in 2004 the repartition of the messages per pathogen substantially reflects the distribution per disease or syndrome. A total number of 131 comments have been posted to

follow up the events notified. As in 2004 the events have been rarely 'closed' by formal messages.

2.4. Response and follow up of the events notified in 2005

Measures undertaken by Member States at national level were sufficient to control the spread of the large majority of events. However six events required a coordinated response involving contacts between health authorities in Member States. Four of them were related to the propagation of the avian influenza threat to the European region (Romania, Russia, Ukraine and Turkey).

- 2.4.1. The highly pathogenic avian influenza virus type A/H5N1 entered Russia during the month of August 2005. The events, as well as the three additional outbreaks of avian influenza in Romania, Turkey and Ukraine, were promptly notified by the Commission to the Member States. Sharing of information through messages and phone conferences encouraged a tangible effort to coordinate and undertake measures to strengthening preparedness to respond to the potential progression of the pandemic alert phases. The Member States were regularly informed through the EWRS about the measures undertaken at National level and a consistent response was reached at Community level (Mainly monitoring the situation, implementing active surveillance, advising EU citizens travelling to and from affected areas, strengthening synergies with veterinary services, finalising pandemic plans).
- 2.4.2. In March 2005 a large outbreak of Marburg hemorrhagic fever required the technical assistance of the staff of a number of European Non Governmental Organisations in Angola. As a result of the outbreak a EU citizen died in Luanda; other NGOs staff members who had contacts with sick or infected patients were quarantined or evacuated to the respective countries of origin (mainly Italy and Portugal). Information provided through the EWRS allowed the coordination of a rapid response to undertake measures at national level to prepare the special isolation units in hospitals (Bio security level 4), to quarantine the contacts and to ship or transport across the EU the samples for laboratory diagnosis.
- 2.4.3. On 13 April 2005 the Commission circulated an EWRS message concerning an event related to a mistakenly distributed samples of live influenza virus A/H2N2 to carry out quality control tests (proficiency testing). The concerned A/H2N2 virus was similar to the A/H2N2 strain that circulated in humans in 1957-58 at the beginning of the so-called Asian influenza pandemic. Vials containing the live virus had been sent by the College of American Pathologists to more than 3.700 laboratories in 18 countries from October 2004 until early April 2005. In the EU the strain has been distributed to Belgium, France, Germany, Italy and United Kingdom. The EWRS contact points in the concerned Member States have been informed by the Commission about the incident and operational procedures for the destruction of the virus have been rapidly undertaken at national level. All the samples received have been destroyed and no cases of influenza - like syndrome was identified among the persons involved in handling and processing of the samples.

3. NEW MEMBER STATES

Since the date of accession in May 2004 the 10 new Member States had full access to the EWRS and they used actively the system both to notify new events and to follow up with comments to events which have been reported by other Member States or by the Commission. Six new Member States in 2004 (Estonia, Hungary, Latvia, Lithuania, Poland and Slovenia) and 6 in 2005 (Czech Republic, Estonia, Latvia, Lithuania, Poland and Slovenia) posted a total of 7 and 10 messages in 2004 and 2005 respectively. Out of the 7 messages posted in 2004, 3 were activation level 1 messages, 2 activation level 2 messages and 2 were messages related to measures undertaken to respond to specific epidemiological situations (intended measures). Concerning the nature of the events which, in 2004, triggered the notification 3 events were associated with outbreaks of acute diarrhoea, and single messages were notifications related to dengue virus, legionellosis, shigellosis and West Nile virus. Out of the 10 messages circulated during 2005, 8 were activation level 1 messages and 2 were messages notifying measures planned to respond to specific events. Events related to outbreaks of avian flu, acute diarrhoea and salmonellosis were notified two times and single notifications were associated with tick borne encephalitis, malaria, food intoxication and cholera.

A recent analysis prepared by the European Centre for Disease Prevention and Control (ECDC)⁵, covering the period from June until December 2005 demonstrates that the amount of threats notified through EWRS is comparable between new and old Member States (after adjustment on the population), showing a good integration of new Member States in the EU alert system for communicable diseases.

4. IMPROVEMENT OF THE INFORMATICS TOOL

The older HSSCD application developed in 1991 no longer met the requirements both in user needs and in security. In addition, as it has been also remarked by Member States the overloading of messages during particularly important events, like SARS, created some difficulties and obstacles to use it. For these reasons it was decided to do a complete technological and ergonomic overhaul of the application to meet the user needs. The new application has been launched the 17th May 2004 and it was very much appreciated by Member States in several occasions. However, also after the lessons learnt from the recent 'Common Ground' exercise, some improvements, such as a function helping in extracting information in a timely and effective manner, are deemed necessary and they are under active consideration.

In the current application the possibility to expand the size of attachments to the messages has been improved as well as the possibility to write and read all the comments directly under the message text. A few 'simple search' features were also added to the threat listing page to select important flags (Message content, syndrome/disease, pathogen, reporting reason, and country of occurrence). After rebuilding the core of the application, it was added a calendar function to create a meeting agenda and to facilitate the sharing of working documents among the users without overloading the core messages. To prevent this risk, especially during relevant events, a 'follow up' section was added, allowing players to add additional information on an event without sending e-mails to the users. A new messaging system was also introduced in May 2005 (Selective messaging) that would allow players to send a

⁵ OJ L142, 30.04.2004, p.1

message to selected recipients. On these selective messages, the European Commission is always notified.

The search function was improved and was given the same layout as the main threat listing page. A few ergonomic and practical changes were implemented, allowing Member States to edit part of their own details. A printer-friendly detailed listing of users was added to allow for easier administrative maintenance. A special session for reference documents (Legal texts, technical guidance documents, operation procedures) has been created.

An SMS messaging function has been activated in order to transmit to the European Commission users' real time notification by SMS that an urgent message (level 2 and 3) has been posted on the system.

The user levels were expanded to give access both to the ECDC and the WHO, giving the later, with the agreement of Member States, a read-only access on selected threat messages. Lastly, other enhancements to security were added.

5. 'COMMON GROUND' SIMULATION EXERCISE

Exercise 'Common Ground' was conducted by the UK's Health Protection Agency (HPA) as a command post exercise over a two-day period on 23 to 24 November 2005. This exercise was the second of two European Union exercises commissioned by the European Commission to evaluate the ability and capabilities of Member States to respond to a health-related crisis, in this case an influenza pandemic. EWRS was available for the exercise to all 25 Member States plus Norway, Iceland and Switzerland.

EWRS was extensively used during the exercise (437 messages and 3672 responses) to enable communication between all the players. No breakdown of the system has been registered. Nevertheless, giving the nature of the simulation, there was considerable overloading and heavy traffic. In the early stages EWRS performed effectively; however, as the exercise progressed the users rapidly became overwhelmed with a huge number of messages. Member States noted that excessive time and resource was spent tracking relevant information and, for some, this became impossible giving the limited resources available. Participants commented on the difficulties of extracting information in a timely and effective manner. As the EWRS was the only system for simultaneous European communication available, players used the system for all sorts of information exchange when it was developed only for official notification of measures and coordination of the latter as lay down in community Legislation.

6. THE EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

The European Centre for Disease Prevention and Control (ECDC) was officially established in May 2005 but started activities from March 2005. As the transfer of EWRS operation to the ECDC is stated in the ECDC founding regulation, ECDC was rapidly integrated in all activities related to EWRS

The ECDC has been connected to the EWRS since April 2005. ECDC participated in EWRS meeting held after its establishment and contributed in close collaboration with the Commission to the discussions.

ECDC has implemented its threat monitoring mandate using the EWRS messages as a source of information on threats in Europe, complemented by an active search of additional formal and informal sources. Information on threats are compiled into a weekly report communicated to the Commission and the Member States.

7. CONCLUSIONS

Analysis of the EWRS operations demonstrates that the system is used more and more frequently by Member States and it is currently considered an appropriate tool to communicate rapidly information to coordinate measures and risk management at Community level. The total number of notifications circulated through the EWRS has doubled in 2004 and 2005 compared with the previous report. New Member States used the EWRS efficiently demonstrating an activity comparable to the old Member States.

All the events which required a more complex response and coordination of measures which have been reported in detail under paragraph 2.2 for 2004 (two legionellosis events in cruise ships; A/H5N1 in Vietnam; two West Nile virus events; incident of the rabid dog illegally introduced in France; outbreak of hepatitis A in an Egyptian resort; A/H5N1 incident in birds of prey; and the four SARS related events) and under paragraph 2.4 for 2005 (A/H5N1 events in the European region; outbreak of Marburg hemorrhagic fever in Angola; and the A/H2N2 incident) were notified without delay, demonstrating a clear improvement after 2003. These relevant events (as it was for SARS during 2003) represented a significant test for the usefulness of the EWRS. The system fulfilled its institutional role by timely circulating messages among the EWRS contact points in Member States, by providing shared positions among the national public health authorities, and by facilitating the exchange of information, as well as scientific advice, on specific issues.

However, in particular the analysis of the ‘information’ and ‘level 1’ messages showed that a number of them were focused on risk assessment issues and that a large part of them were requests to know if events similar to those which have been notified were identified in other Member States. Concerning this point the future involvement of the ECDC in assisting the Commission in operating the EWRS (Art.8 of the Regulation 851/2004)⁶ should improve the situation, focusing on use of the EWRS as laid down in Decisions 2119/98/EC and 2000/57/EC.

Application of the new functions in the threat listing page made possible a better specification of criteria considered relevant by Member States when reporting as well as a better definition of syndrome and diseases, pathogens and the geographical origin of the events. However the still high number of messages in the ‘non-applicable’, ‘unknown’ and ‘unlisted’ categories suggests updating and better defining those lists.

The new application developed for the EWRS has been appreciated by Member States and it resulted in a real improvement of the performance of the utilisation of the system. In addition the timely notification of the relevant events improved in comparison with the previous report.

⁶ OJ L142, 30.04.2004, p.1

A number of Member States did not provide the annual analytical reports on the operation of the EWRS (Art.3 of Decision 2000/57/EC). Member States suggest to focus the yearly analysis of the EWRS operation on the events (such as those reported under paragraphs 2.2 and 2.4 for 2004 and 2005) which triggered a significant response in term of public health measures undertaken or planned and which have prompted coordination of measures at EU level.