

Acute public health events assessed by WHO IHR Regional Contact Points for the Americas and Europe 2015 Report

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Executive summary

As part of its constitutional mandate to ensure the attainment by all peoples of the highest possible level of health, the World Health Organization (WHO) conducts the detection, verification, and assessment of acute public health events¹ that have the potential to spread internationally and pose a threat to international health security. As part of a collaborative work between WHO and States Parties to the International Health Regulations (IHR), and, under the provisions of the IHR, information about public health events with potential international impact is shared through a variety of channels, including the secure WHO Event Information Site (EIS) for the National IHR Focal Points (NFPs)², the WHO Disease Outbreak News (DON)³, the Pan American Health Organization/WHO Regional Office for the Americas (PAHO/WHO) Epidemiological Alerts and Updates⁴, the WHO Drug Alerts⁵, the International Network of Food Safety Authorities (INFOSAN) community site⁶, and the WHO Weekly Epidemiological Record (WER)⁷. Although WHO has been carrying out outbreak detection, verification, risk assessment and response since 1997, these activities have been intensified following the entering into force of the revised IHR in June 2007.

Aiming to demonstrate transparency, this report provides a description of information related to public health risks reported under the IHR (2005) to WHO. Information is jointly assessed with the concerned State Party to ascertain the nature and extent of the risk, the potential for international disease spread and interference with travel and trade, and appropriate response and containment strategies.

This report summarizes acute public health events¹ recorded in the WHO Event Management System (EMS) between 2001 and 2015, with a particular focus on the events that were reported in the Region of the Americas and the European Region during 2015. These events may have constituted a public health risk to States Parties through the international spread of disease and, in some instances, have required a coordinated international response. This is the fourth annual joint report developed by the Pan American Health Organization/WHO Regional Office for the Americas (PAHO/WHO) and the WHO Regional Office for Europe, with previous reports being produced in 2012, 2013, and 2014. This is the second year that the report is disseminated to National IHR Focal Points.

¹ As per the Guideline on Early Detection, assessment and response to acute public health events, an acute public health event is defined as any event that represents immediate threat to human health and requires prompt action, i.e. implementation of control and/or mitigation measures to protect the health of the public. This term includes events that have not yet led to disease in humans but have the potential to cause disease through exposure of humans to infected or contaminated food, water, animals, manufactured products, environments, or as a result of direct or indirect consequences of natural events, conflicts or other disruptions of critical infrastructure. Available at: http://www.who.int/ihr/publications/WHO_HSE_GCR_LYO_2014.4/en/

² The WHO Event Information Site for National IHR Focal Points (NFPs) is a secure platform developed by WHO to facilitate communications with the NFPs, as part of the implementation of the IHR.

³ WHO Disease Outbreak News (DON): <http://www.who.int/csr/don/en/>

⁴ PAHO/WHO Epidemiological Alerts: <http://www.paho.org/epialerts>

⁵ WHO Drug Alerts: <http://www.who.int/medicines/publications/drugalerts/en/>

⁶ International Network of Food Safety Authorities (INFOSAN) community site: <https://extranet.who.int/infosan/>

⁷ WHO Weekly Epidemiological Record (WER): <http://www.who.int/wer/en/>

Introduction

The Constitution of the World Health Organization (WHO) states that the Organization's mission is to ensure "the attainment by all people of the highest possible level of health".

In order to "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade⁸," WHO must rapidly and consistently identify and assess events of potential international public health concern. This process consists of detecting events that may threaten international health security, assessing the public health risk, sharing information with States Parties and assisting with public health response.

Within WHO, information on an event is recorded and maintained in the Event Management System (EMS),⁹ accessible only to technical officers in the WHO Country, Regional, and Headquarters Offices. The EMS does not function as a repository of information on all the public health events occurring worldwide, rather, its objective is to support WHO in the identification, documentation, and management of acute public health events that may constitute a potential public health emergency of international concern through the international spread of disease or that may require a coordinated international response.

Events are created and updated in the EMS mainly by WHO Regional Offices and, depending on the Region, by WHO Country Offices. Therefore, the use of the EMS varies considerably between WHO Regions. Differences are due to multiple factors, including regional policies and availability of human resources. The number of events entered in the EMS is an underestimate of the number of events effectively followed up by WHO. Due to variability, comparison of data from all six WHO regions should be avoided or interpreted with great caution.

This report summarizes acute public health events assessed by the WHO Regional Office for the Americas and WHO Regional Office for Europe between 2001 and 2015, with a particular focus on the events that were reported during 2015.

Information about an event is entered in the EMS when States Parties notify an event, when a request for verification is sent to a State Party, and when WHO assistance in relation to an event is requested.¹⁰ Events are entered into the EMS by the WHO Headquarters, Regional Offices, and Country Offices staff. The results presented in this report are based on information obtained from the EMS as of 7 February 2017; therefore, previous and future reports may present different numbers due to updating of information. Between 1 January 2015 and 31 December 2015, a total of 136 events were created in EMS by the WHO Regional Office for Europe (36 events) and the WHO Regional Office for the Americas (100 events).

⁸ International Health Regulation (2005) - Article 2 - Purpose and scope. The purpose and scope of these Regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. Available at <http://apps.who.int/iris/bitstream/10665/246107/1/9789241580496-eng.pdf?ua=1>

⁹ The EMS is the central electronic repository for event-related information. All International Health Regulation (IHR) National Focal Point (NFP) and relevant Ministry of Health communications, event details, WHO assessments and decisions are documented and recorded in the EMS.

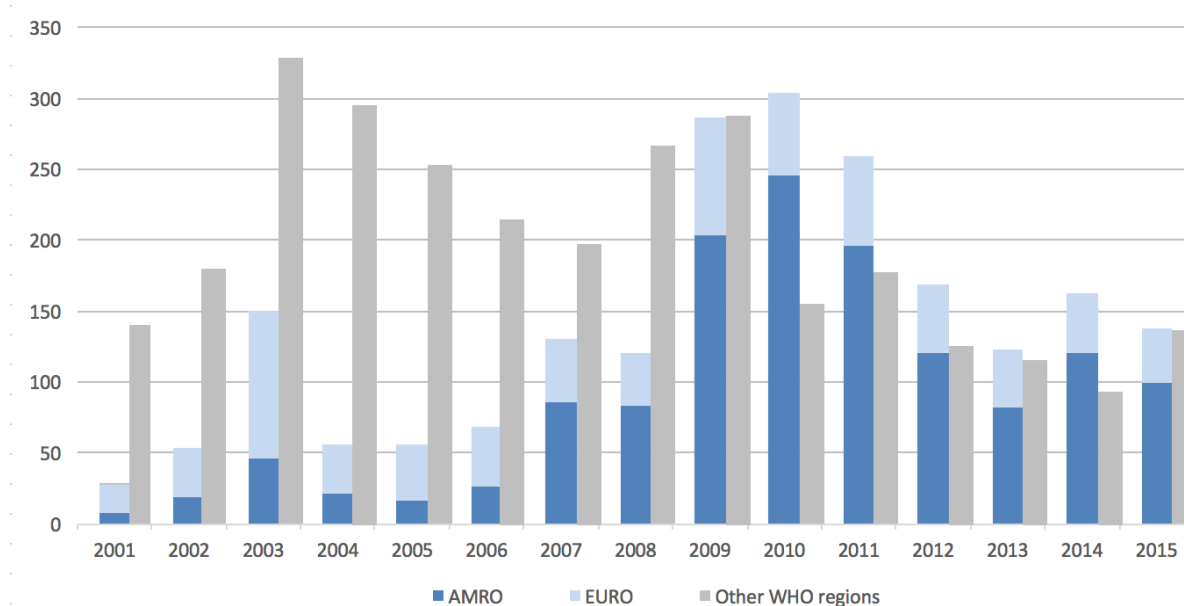
¹⁰ WHO event management for international public health security. Operational procedures. Working document. June 2008. Available at: http://www.who.int/csr/HSE_EPR_ARO_2008_1.pdf

Event detection

Since 2001, the WHO Regional Office for the Americas and the WHO Regional Office for Europe have detected over 39,000 signals¹¹ of potential public health risk, which represent on average approximately 2,600 reports per year. Of these reports, the WHO Regional Office for the Americas has followed up nearly 92 public health events per year that have or could have had international implications for the Americas. The WHO Regional Office for Europe has followed up on average 49 public health events per year.

In 2015, a total of 271 public health events were detected and followed up by WHO globally, of which 100 (37%) were registered in 23 Member States and 4 territories in the Region of the Americas, and 36 events (13%) were registered in 19 Member States in the European Region (Figure 1). Since 2001, events registered in the EMS in both regions have collectively comprised between 17% and 67% of the total number of events registered on an annual basis, with the highest proportion being reported in 2003 (Severe Acute Respiratory Syndrome - multi-country outbreak), in 2009 and 2010 [Influenza A(H1N1)pdm09 and cholera outbreak in Haiti in the Americas] and in 2011 (the multi-country E. coli O104:H4 outbreak in the European Region).

Figure 1. Number of events (N=5,037) recorded in the EMS by WHO Regional Offices, by year, 2001 – 2015.



¹¹ As per the Guideline on Early Detection, assessment and response to acute public health events, a **signal** is defined as data and/or information considered by the Early Warning and Response system as representing a potential acute risk to human health. Signals may consist of reports of cases or deaths (individual or aggregated), potential exposure of human beings to biological, chemical or radiological and nuclear hazards, or occurrence of natural or man-made disasters. Signals can be detected through any potential source (health or non-health, informal or official) including the media. Raw data and information (i.e., untreated and unverified) are first detected and triaged in order to retain only the one pertinent to early detection purposes i.e. the signals. Once identified, signals must be verified. When it is verified, a signal becomes an "event". Available at: http://www.who.int/ihr/publications/WHO_HSE_GCR_LYO_2014.4/en/

Initial source of event information

Out of the 100 events registered in 2015 in the **Region of the Americas**, 61 (61%) were notified by the International Health Regulation (IHR) National Focal Points (NFPs)¹² and national governments. The remaining 39 events (39%) were detected through routine epidemic intelligence (including indicator-based surveillance and event-based surveillance) conducted at the Americas Regional and Country Office levels (Figure 2). After gathering information, 26 of the 39 unofficial reports were considered to be of potential international importance and, consequently, NFPs were contacted by WHO IHR Regional Contact Point in the Americas to verify information and obtain further details. As required under Article 10 of IHR (2005) Responses to requests for verification were received within 24 hours in only 14 requests sent to NFPs.

Between 2011 and 2014, more than half of the initial reports were provided by NFPs. However, in 2015, there was a decrease in the participation of NFPs and national governments as the first source of information in comparison with previous years (Figure 2).

Similarly, in the **European Region**, during 2015, the primary sources of initial information for the majority of registered events (n=19, 53%) were the NFPs. Seventeen (47%) other reports were obtained through routine epidemic intelligence (including indicator-based surveillance and event-based surveillance) conducted at the European Regional and Country Office levels (Figure 3). NFPs in the European Region were contacted by the WHO IHR Regional Contact Point to verify and provide further information on 17 unofficial reports, and responses to requests for verification were received within 24 hours in 8 requests sent to NFPs.

Figure 2. Number of events (N=1,375) entered in the EMS, in the Region of the Americas, by source of initial information, 2001-2015 - NFPs and National Governments compared to initial information detected by WHO through other sources.

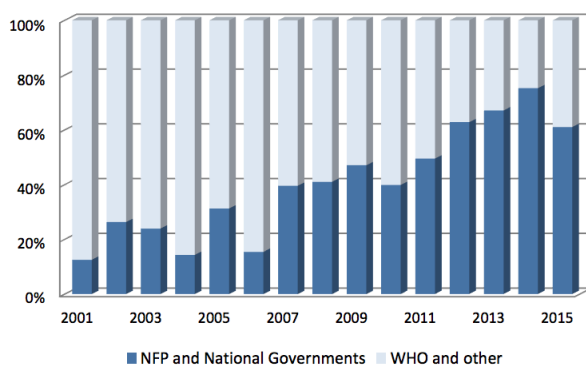
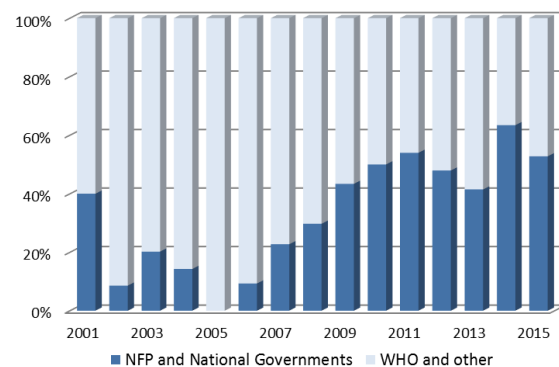


Figure 3. Number of events (N=728) entered in the EMS, in the European Region, by source of initial information, 2001-2015 - NFPs and National Governments compared to initial information detected by WHO through other sources.



Between 2007 and 2014, sources of initial information changed, with NFP reports assuming an increasingly greater role in both the Americas and European Region; a trend that can be observed when appraising all the events entered in the EMS (Figures 2 and 3) and those that

¹² The IHR NFP is designated by each State Party and accessible at all times for communications and liaison with WHO IHR Contact Point under the IHR.

were classified as substantiated (Figures 4 and 5). In 2015, the Regions experienced a decrease of similar magnitude in the participation of NFPs as initial sources of information.

Figure 4. Number of substantiated events (N= 728) entered in the EMS, in the Region of the Americas, by source of initial information, 2001-2015 - NFPs and National Governments compared to initial information detected by WHO through other sources.

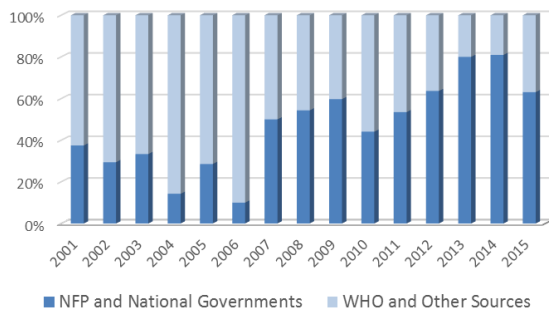
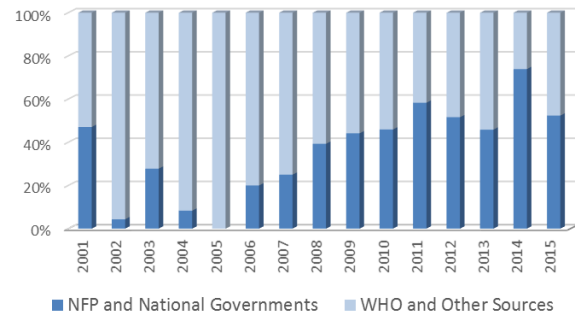


Figure 5. Number of substantiated events (N=471) entered in the EMS, in the European Region, by source of initial information, 2001-2015 - NFPs and National Governments compared to initial information detected by WHO through other sources.



Event designation

Following event detection or notification by the NFP, in close collaboration with technical experts across the three levels of the Organization (Country Office, Regional Office, and Headquarters), the WHO Regional IHR Contact Point will conduct an initial risk assessment. The latter is a dynamic, repetitive process that begins when an event is first detected by WHO and terminates when the event is “closed.” The risk assessment is shared with NFPs, and when necessary, with the international community through several mechanisms.

As more information becomes available, the event will be designated¹ as one of the following:

- Substantiated, when the presence of the hazard is confirmed or the number of human cases exceeds normal thresholds;
- Discarded, when there is no international risk and no international risk is expected – the event is closed accordingly;
- No outbreak, when the number of human cases or hazard reported is within normal limits of occurrence;
- Unverifiable, when no information is forthcoming from the NFP/responsible national authority to substantiate its occurrence, despite the best efforts to obtain such information.

Between 2001 and 2015, of the 5,033 events assessed globally, 1,375 (27%) were reported in the **Region of the Americas**. Of those 1,375 events, 728 (53%) were designated as substantiated, 437 (32%) as no-outbreak, 179 (13%) as discarded, and 31 (2%) as unverifiable (Figure 6).

Between 2001 and 2015, 728 (14%) of the 5,033 events assessed globally were in the **European Region**. Of those, 470 (65%) were designated as substantiated, 153 (21%) as no outbreak, 52 (7%) as discarded, and 53 (7%) as unverifiable (Figure 7).

Figure 6. Distribution of events (N= 1,375) in the Region of the Americas by final designation, 2001 – 2015.

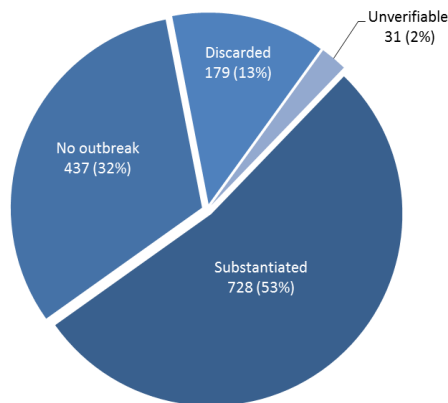
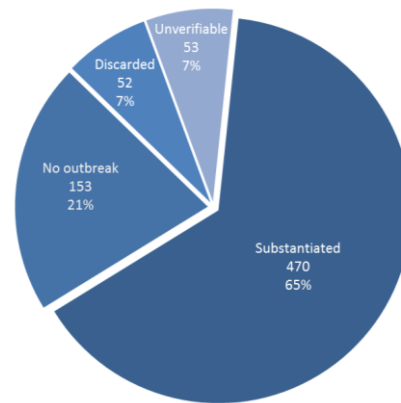


Figure 7. Distribution of events (N= 728) in the European Region by final designation, 2001 – 2015.



The 728 substantiated events reported between 2001 and 2015 in the **Region of the Americas** were classified as follows: due to infectious diseases (n=528, 74%), related to food safety (n=77; 11%), zoonotic/animal (n=60, 8%), product related (n=26, 4%), undetermined (n=17, 2%), radionuclear (n=6; 1%), chemical (n=8; 1%), and disaster related (n=6; 1%) (Figure 8).

The 471 substantiated events reported in the **European Region** during the same period were designated as follows: due to infectious diseases (n=343, 73%), related to food safety (n=70; 15%), zoonotic/animal (n=23, 5%), product related (n=13, 3%), chemical (n=8; 2%), undetermined (n=5, 1%), radionuclear (n=2; 0.5%), and disaster related (n=7; 1.5%) (Figure 9).

Figure 8. Distribution of substantiated events (N=728) in the Region of the Americas by hazard, 2001 – 2015.

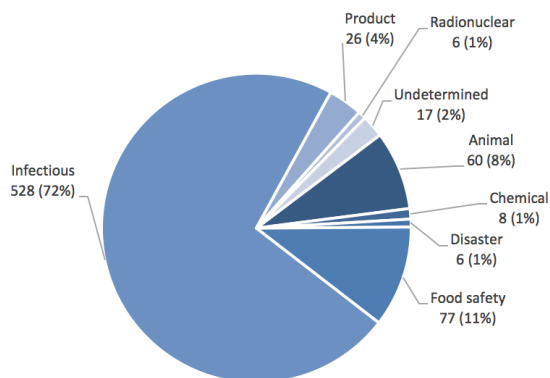
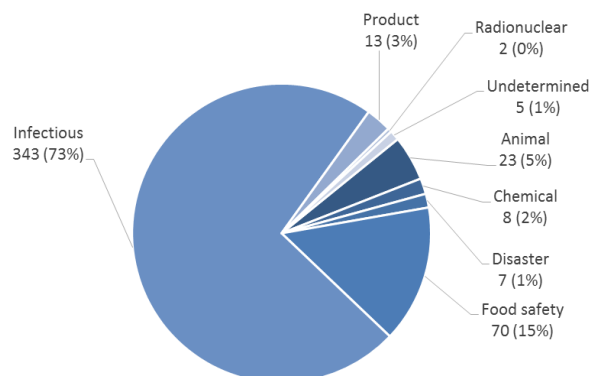


Figure 9. Distribution of substantiated events (N=470) in the European Region by hazard, 2001 – 2015.



With regards to 2015 data, 100 (37%) of the 271 global events were reported in the **Region of the Americas**. Of those, 46 (46%) were designated as substantiated, 35 (35%) as no-outbreak, and 19 (19%) as discarded (Figure 10). During the same year, 36 (13%) of the 271 global events were reported in the **European Region**. Of those, 21 (58%) were designated as substantiated, 7 (19%) as no-outbreak, and 8 (22 %) as discarded (Figure 11).

Figure 10. Distribution of events (N= 100) in the Region of Americas by final designation, 1 January – 31 December 2015.

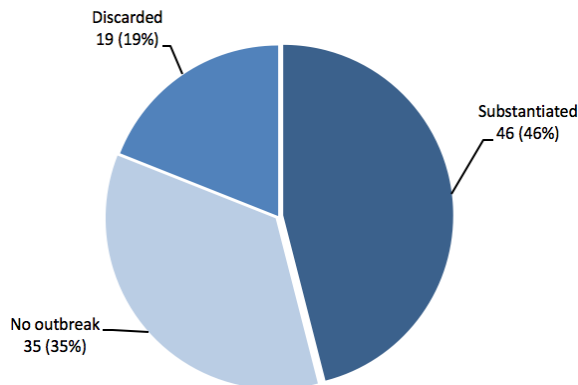
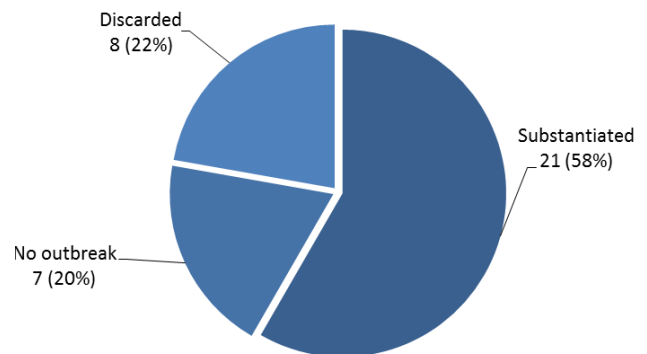


Figure 11. Distribution of events (N=36) in the European Region by final designation, 1 January – 31 December 2015.



In the **Region of the Americas**, in 2015, 46 substantiated events were reported in 19 States Parties and 3 territories; 32 (70%) were due to infectious diseases, 5 (11%) due to zoonotic/animal, 2 (4%) due to food safety, 2 (4%) due to contaminated products, 1 (2%) radionuclear, 1 (2%) chemical, and 3 (7%) were undetermined (Figure 12).

In the **European Region** a total of 21 events were classified as substantiated and were reported in 13 States Parties; 15 (68%) were due to infectious diseases, followed by 3 (14%) food safety, 2 (10%) chemical, and 1 (5%) disaster. (Figure 12).

Figure 12. Distribution of substantiated events (N=46) in the Region of Americas by hazard, 1 January – 31 December 2015.

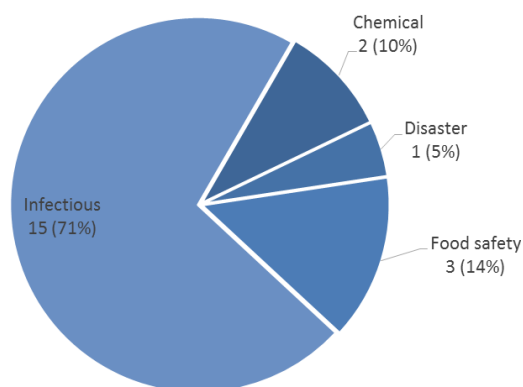
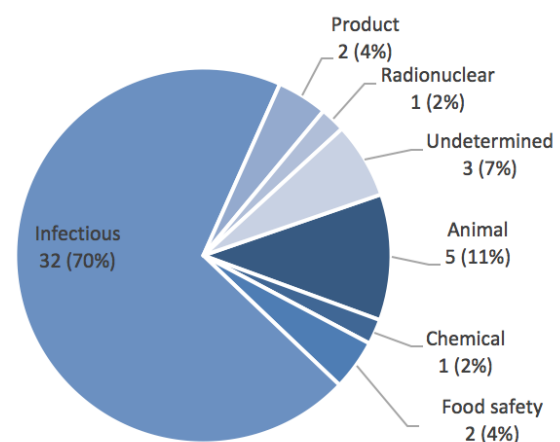


Figure 13. Distribution of substantiated events (N=21) in the European Region by hazard, 1 January – 31 December 2015.



Provision of information by WHO

Postings on the WHO Event Information Site (EIS) for the NFPs, Disease Outbreak News (DON), and WHO Regional Offices webpages were utilized to inform and alert the international community about new and ongoing public health events. In 2015, there were 29 EIS bulletin postings on new or updated events and 56 EIS announcements. The announcements are usually used to inform States Parties about multi-country events. Out of the 29 bulletins posted, 11 (38%) were related to Ebola virus disease. During the same period, 154 DONs were posted on the WHO website in relation with events reported at the global level.

Region of the Americas

Examples of events registered in the **Region of the Americas** during 2015 include, in no particular order, Zika virus disease and its complications, measles across the Americas, rabies in Brazil, the Dominican Republic and Peru, and a Lassa fever case and listeriosis in the United States.

In 2015, PAHO shared information concerning new, ongoing, and updated acute public health events with States Parties of the Americas Region through the publication of 20 Epidemiological Alerts and Updates-, 13 EIS bulletin postings on events occurring in 13 States Parties, 4 EIS announcements, and 17 DON postings concerning events that were reported or were related directly to events in the Americas. In addition, 93 reports on public health events in the Americas were shared with NFPs by email.

In 2015, the NFPs of the Region of the Americas utilized 303 times the IHR channels of communication to exchange public health information consistent with Article 30 and 44 of the IHR, of which 248 (82%) were related to travelers coming from Ebola affected countries that needed to be monitored up to 21 days. The remaining instances were events requiring international contact tracing, events that triggered a request for further information by another State Party or territory than the one directly concerned-, and requests for assistance.

Of the 303 public health information exchanges between NFPs, 176 (58%) were communications with NFP in the Americas Region. The remaining 127 information exchanges were communications directed to NFPs in the European Region (n=69, 23%), African Region (n=32, 11%), Western Pacific Region (n=14, 5%), Eastern Mediterranean Region (n=6, 2%), and South-East Asia Region (n=6, 2%).

European Region

Examples of events registered in the **European Region** during 2015 include, in no particular order, circulating vaccine-derived poliovirus type 1 in Ukraine¹³, the first case of chikungunya virus in Spain¹⁴, and the first case of West Nile virus in Portugal¹⁵.

All signals and events in the **European Region** were followed up by the Alert and Response Operations Programme in the Regional Office in close collaboration with national authorities and the WHO Country Offices. Technical advice was provided by technical units and the Alert

¹³ <http://who.int/csr/don/01-september-2015-polio/en/>

¹⁴ <http://who.int/csr/don/10-august-2015-chikungunya/en/>

¹⁵ <http://www.who.int/csr/don/17-september-2015-wnv/en/>

and Response Operation Teams in the WHO Regional Office for Europe and the WHO Headquarters.

In 2015, eight (8) events were reported in six (6) States Parties of the WHO European Region and three announcements were posted in the EIS. Additionally, in 2015, there were seven (7) DON publications about events reported in or related to the European Region.

Zika virus detection in the Region of the Americas

In May 2015, the first autochthonous cases of Zika virus disease in Brazil were confirmed. In October 2015, the Brazil NFP reported the detection of an unusual increase in microcephaly cases in public and private healthcare facilities in Pernambuco state, Northeast Brazil. By the end of 2015, 12 Member States and territories in the Americas had confirmed autochthonous circulation of Zika virus.

The WHO Regional Office for the Americas utilized various mechanisms and channels for communication in response to the epidemic. In 2015, 6 events related to Zika virus disease or its complications (microcephaly and Guillain-Barré syndrome) were posted in the EIS. In addition, 4 Epidemiological Alerts and Updates were disseminated through the WHO Regional Office for the Americas website. Updated figures on microcephaly based on reports received from the Brazil NFP were shared on a weekly basis by the WHO Regional Office for the Americas¹⁶.

In 2015, to assist national health authorities in the detection of cases of Zika virus disease, neurological syndromes and congenital malformations, the WHO Regional Office for the Americas issued case definitions and diagnostic algorithms adapted to the Americas context. In addition, recommendations for the management of cases of Zika virus-associated complications were disseminated to Member States. Multi-country workshops were organized to train government officials on epidemiological surveillance and laboratory diagnosis of Zika virus disease and its complications. Together with partner agencies, stocks of medical supplies, reagents, and diagnostic tools were purchased and distributed to counties and territories in the Region. Field missions attended by technical experts, including neonatologists, obstetricians, epidemiologists, virologists, and vector control experts, were organized to support Ministry of Health officials.

Ebola virus disease

In Europe, one confirmed case of Ebola virus disease (EVD) was detected in 2015 in Italy in a health care worker who had returned from volunteering at a treatment center in one of the Ebola affected countries. No additional cases were reported.

Events entered in the EMS relating to EVD in both regions included also suspected cases and low risk exposure.

¹⁶ www.paho.org/zikavirus

Measles transmission in the Region of the Americas and European Region

During 2015, measles cases were reported in the northern states of Pernambuco and Ceará, Brazil relating to an outbreak that started in 2013. In addition, NFPs of Canada, Mexico and the United States notified PAHO/WHO of measles cases, most of which were related to a large multi-state outbreak in the United States.

The WHO Regional Office for Europe continued to receive measles report from States Parties during 2015. The most affected country was Kyrgyzstan with over 7,000 cases reported in just the first seven weeks of 2015. Significant numbers of measles cases were also reported in Bosnia and Herzegovina, Croatia, Georgia, Germany, Italy, Kazakhstan, Russian Federation and Serbia. Measles virus D8 was the most commonly identified circulating genotype.

Discussion and conclusion

During the period of study (2001 to 2015), between 17% and 67% of the global annual number of events registered in the EMS were reported in the WHO Americas and European Regions. The highest numbers of events were reported in 2009, 2010 and 2011 in both regions.

In 2015, the two regions cumulatively registered 29% of the global total number of events in the EMS. In both the Americas and European Regions, participation of the NFPs as the first source of information of public health events with potential international impact increased between 2007 and 2014. However, a decrease was observed in both regions during 2015. There is no specific explanation for this observed decrease.

In 2015, 46% and 58% of assessed events were classified as substantiated in the Americas and European Region, respectively – most of these events were due to infectious diseases. These figures are consistent with the previous five years. The event verification process was conducted for 26 events in the Americas Region and 17 events in the European Region. However, compliance with Article 10 of the IHR, which concerns timeliness in responding to requests for verification, was low both in the Americas (54%) and the European Region (47%). Compared with compliance in the previous year in the Americas Region (22%) and the European Region (78%), there was an improvement in the timeliness of response in the Americas Region.

Information on new and updated events was communicated to the international community, and advice to States Parties was provided through a large number of public health event reports shared with NFPs in 2015; most related to Ebola virus disease, Middle East respiratory syndrome coronavirus (MERS-CoV) and Zika virus disease. In total, the Region of the Americas and the European Region contributed to the publication of information on 20 events in the EIS, 24 DON publications, and 93 reports. During the past five years, an increasing number of reports were shared with States Parties through IHR mechanisms.

The existing collaboration between WHO Regional Offices for the Americas and Europe, other Regional Offices, WHO Headquarters, and all States Parties is instrumental in enhancing early warning and response mechanisms (including event detection, verification and response), strengthening effective communications among States Parties, and finally, ensuring adequate and timely responses to public health emergencies.

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