

# Acute public health events assessed by WHO Regional Offices for Africa, the Americas and Europe under the International Health Regulations (2005)

## 2016 Report

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November 2017

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## Executive summary

The World Health Organization (WHO) and its Member States have committed, within the framework of the International Health Regulations (2005) (IHR), to detect, verify, assess and report events that may pose a risk to international public health. This report summarizes public health events detected, verified, assessed and reported in three WHO Regions, namely Africa, the Americas and Europe, from 2001 to 2016, with a focus on 2016,

Epidemic intelligence activities i.e. to detect, verify, risk assess and communicate about events of potential international public health concern are carried out by WHO and its Member States. The data collected on public health events that occurred in Member States from 2001 to 2016 were recorded by WHO in the Event Management System (EMS), a password-protected web-based tool accessible to technical officers at WHO Country, Regional and Headquarter Office levels.

From 2001 to 2016, some 5472 events were recorded in the WHO Event Management System (EMS), 373 of which were recorded in 2016. Of these, 238 events were in the WHO Region of the Americas, 92 in the WHO African Region, and 43 in the WHO European Region. Most of these events were of infectious origin, including large yellow fever outbreaks; continuation of the Ebola and Zika virus disease outbreaks including imported Zika congenital syndrome cases; sequelae of civil conflicts and natural disasters; imported cases of Lassa fever and Coronavirus;. The initial source of information for the majority of 2016 events documented in the Americas and Europe was the National IHR Focal Points (NFPs) of Member States. In the African Region, however, detection was done through routine epidemic intelligence activities coordinated by the Regional Office. Overall timeliness in responding to verification requests was below 50% according to WHO performance standards. Of all events recorded in 2016, 68% were substantiated, ranging from 63% in the Americas to 94% in the African Region. More than 700 reports regarding events reported in 2016 were disseminated to the international public health community through various channels.

The complexity and severity of events occurring in the three Regions place a heavy burden on national health systems, coupled with the burden on the ability and capacity of Member States and international organizations to manage the impact.

Timely information-sharing between Member States and WHO as mandated by the IHR continues to be a challenge. The improvement of timely information-sharing should be an essential component of IHR capacity-building and is integral to IHR core capacities. Dissemination of information regarding acute public health events is crucial to guiding decision-making. In 2016, the increased number of reports shared and the improved timeliness in sharing information, compared with previous years, played a key contribution to preparedness, response, and recovery during outbreaks and other humanitarian emergencies.

This report illustrates the relevance and critical importance of conducting and sustaining epidemic intelligence activities in accordance with WHO's commitment to alleviate the burden and impact of epidemics and emergencies, and thus avoid interference with travel and trade. Achieving this early detection goal—to rapidly and effectively respond to emergencies—requires dedicated human resources, close collaboration with Member States, humanitarian partners and other stakeholders, transparent information-sharing among Member States, and sustained funding.

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## Introduction

Member States of the World Health Organization (WHO) are States Parties to the International Health Regulations (2005) (IHR), an international legal instrument designed to help the international community to prevent and respond to acute public health risks that have a cross borders potential and threaten people worldwide.

The IHR, developed through an extraordinary global consensus, are intended to strengthen the global protection against the multiple and varied public health risks that threaten today's globalized world and which could rapidly spread through expanding travel and trade. Furthermore, the IHR support the global detection, verification and risk assessment process that requires countries to improve surveillance and reporting mechanisms for public health events and to strengthen their surveillance and response capacities.

The IHR require WHO and its 196 Member States to assess public health events of potential international concern and share information with the international community in order to prevent and prepare to respond to public health threats.

Since 2012, the WHO Regional Office for the Americas and the WHO European Regional Office have prepared joint reports to share with Member States, including figures on event detection, verification and risk assessment for accountability purposes. These joint reports were disseminated through the Event Information Site<sup>1</sup> for National IHR Focal Points (NFPs)<sup>2</sup> and the WHO Americas Regional website<sup>3</sup> since 2014. This year, and for the first time, the WHO Africa Regional Office has joined the Region of the Americas and the European Region to prepare and disseminate this report. The complete list of Member States in each of these three WHO Regions is available in Annex 1.

This report summarizes acute public health events recorded between 2001 and 2016, with a particular focus on the events that occurred in the WHO Regions of Africa, the Americas and Europe during 2016.

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<sup>1</sup> The Event Information Site for the National IHR Focal Points (EIS) is a website developed by WHO to facilitate secure communications with NFPs as part of IHR implementation

<sup>2</sup> The IHR NFP is "the national centre, designated by each State Party which shall be accessible at all times for communications with WHO IHR Contact Points under these Regulations". Information available at: <http://www.who.int/ihr/publications/nfp/en/>

<sup>3</sup> [www.paho.org](http://www.paho.org)

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## Methodology

Epidemic intelligence is conducted by a team of WHO technical officers to detect and risk assess events of potential international public health concern. Information for each event, information required for the verification risk assessment and characterisation including operational decisions, is recorded in the WHO Event Management System (EMS).<sup>4,5</sup> The EMS, is a password-protected web-based tool accessible to technical officers at the Country Office, Regional Office and Headquarter levels of WHO. The criteria for processing information into the EMS include: an event notified by a Member State;<sup>6</sup> an event for which a request for verification is sent to a Member State;<sup>7</sup> and events for which WHO assistance is requested.

After an event is detected directly by WHO or notified by an NFP, the WHO IHR Regional Contact Points, in close collaboration with technical experts across the three levels of the Organization (Country Office, Regional Office, and Headquarters), conduct risk assessments continuously until the event is closed. The risk assessment is shared with NFPs and, when necessary, with the international community through several mechanisms.

Assessed events are communicated to Member States and the international community through different channels, namely: the EIS, the WHO Disease Outbreak News (DONs), websites of WHO Regional Offices, and disease-specific networks.

The information in this report is presented as follows: event detection, initial source of event information, event designation, type of hazard and information dissemination. Data and information was extracted from the EMS on 6 September 2017 and a descriptive analysis was conducted. Consequently, previous and future reports may show statistical differences as the information in EMS is continuously updated as new information becomes available.

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<sup>4</sup> The EMS is the central electronic repository for event-related information. National IHR Focal Points (NFPs) and relevant government communications, event details, WHO assessments and decisions are documented and recorded in the EMS. The EMS does not function as a repository of information on all the outbreaks occurring worldwide. Rather, its objective is to support event management accountability.

<sup>5</sup> 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](http://www.who.int/csr/HSE_EPR_ARO_2008_1.pdf)

<sup>6</sup> Pursuant to the IHR (2005), Article 6, Notification: "Each State Party shall assess events occurring within its territory by using the decision instrument in Annex 2. Each State Party shall notify WHO, by the most efficient means of communication available, by way of the National IHR Focal Point [IHR NFP], and within 24 hours of assessment of public health information, of all events which may constitute a public health emergency of international concern within its territory in accordance with the decision instrument, as well as any health measure implemented in response to those events."

<sup>7</sup> Pursuant to the IHR (2005) Article 10, Verification: "1. WHO shall request, in accordance with Article 9, verification from a State Party of reports from sources other than notification or consultations of events which may constitute a public health emergency of international concern allegedly occurring in the State's territory. In such cases, WHO shall inform the State Party concerned regarding the reports it is seeking to verify."

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## Definitions

During the risk assessment process, each event is designated as:

- *substantiated*, when the presence of a hazard is confirmed or the number of human cases exceeds normal thresholds;
- *discarded*, the existence of a public health event has been ruled out, or when no international risk is expected,
- *no outbreak*, when the number of human cases or hazard reported is within the normal limits of occurrence;
- *unverifiable*, when no information is forthcoming from the NFP or responsible national authority to substantiate or discard its occurrence, despite the best efforts to obtain such information.

Hazards are categorized as:

- *animal*, if there is potential harm to human health from zoonoses;
- *chemical*, if there is potential harm to public health from the toxic effects of chemical substances, which are chiefly non-medical, as to source;
- *food safety*, if there is potential harm to public health from the toxic effects of food (poisoning or injury);
- *infectious*, if there is the potential harm to public health from an infectious disease;
- *natural disaster*, if there is the potential harm to public health from a natural disaster;
- *nutritional deficiency*, if there is the potential harm to public health from nutritional deficiencies;
- *product*, if there is the potential harm to public health from contaminated or faulty therapeutic goods including medicines, blood products, tissues and organs, medical devices, diagnostic tests and devices, etc., including poisonings due to mislabelling of therapeutic goods;
- *radio-nuclear*, if there is the potential harm to public health from the toxic effects of ionizing radiation; and
- *undetermined*, if there is the potential harm to public health from an undetermined hazard.

## Results

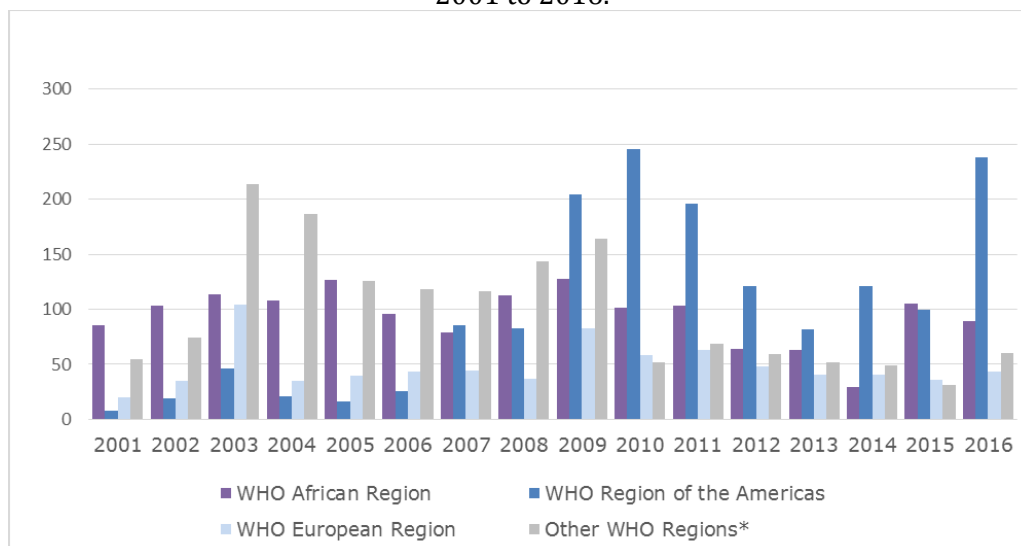
### Event detection

From 2001 to 2016, a total of 5 462 public health events were recorded globally in the EMS, of which 3 892 (71%) occurred in the Regions of Africa, the Americas and Europe (Figure 1).

Globally, in 2016 a the 430 public health events , recorded in the EMS were monitored by WHO, of which 89 (21%) occurred in 34 Member States in the WHO African Region, 238 (55%) in 35 Member States and 11 territories in the WHO Region of the Americas, and 43 events (10%) in 23 Member States in the WHO European Region (**Figure 1**). Since 2001, the events recorded in the EMS for these three WHO Regions have collectively represented between 47% and 89% of the total number of events recorded annually, with the highest proportions being reported in 2010 (89%), 2015 (89%), and 2016 (86%).

From 2010 to 2014, there was a decrease in recorded events at the global level, including those that occurred in the WHO Regions of Africa, the Americas and Europe. In 2015, there was a slight increase of recorded events followed by a significant increase in 2016, mainly due to Zika virus-related events.

**Figure 1.** Number of events (N=5462) recorded in EMS by WHO Regional Offices, by year, from 2001 to 2016.



\*Other WHO Regions represents the sum of events recorded by the WHO South-East Asia Region,<sup>8</sup> the WHO Eastern Mediterranean Region,<sup>9</sup> and the WHO Western Pacific Region.<sup>10</sup>

The distribution of events recorded in EMS for the Americas, by subregion, is presented in Annex 2.

<sup>8</sup> <http://www.searo.who.int/en/>

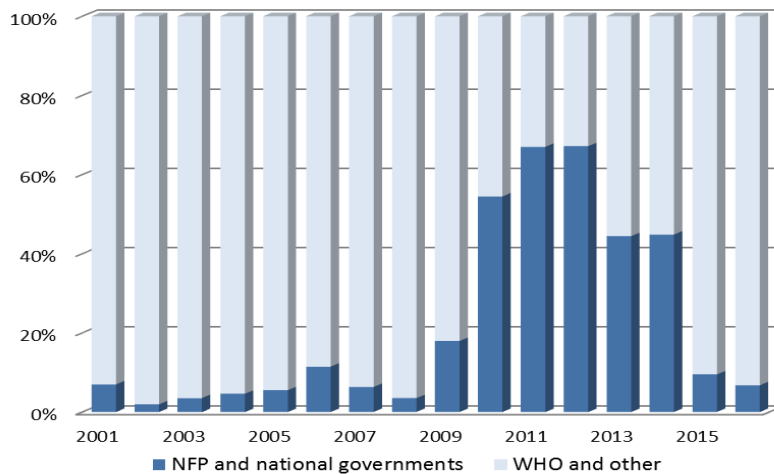
<sup>9</sup> <http://www.emro.who.int/index.html>

<sup>10</sup> <http://www.wpro.who.int/en/>

## Initial source of event information

In the WHO **African Region**, 1 508 events were recorded in the EMS from 2001 to 2016. Of the 89 events recorded in 2016, 83 (93%) were detected through routine epidemic intelligence coordinated by WHO (including indicator- and event-based surveillance), as part of the Integrated Disease Surveillance and Response (IDSR) strategy implemented at the WHO Africa Regional Office and country offices (Figure 2). The remaining six events (7%) were notified by NFPs<sup>11</sup> and national governments.

**Figure 2.** Number of events (N=1,508) recorded in EMS, in the WHO African Region, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by WHO through other sources



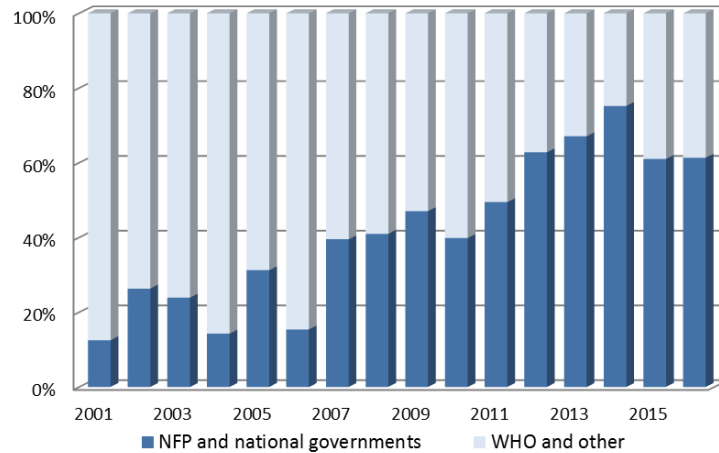
In the WHO **Region of the Americas**, some 1 613 events were recorded in EMS from 2001 to 2016. Of the 238 events recorded in 2016, 146 (61%) were notified by NFPs and national governments. The remaining 92 events (39%) were detected through routine epidemic intelligence (including indicator and event-based surveillance) conducted at the Americas Regional and Country Office levels (Figure 3). Of these 92 events, 34 were unofficial reports, of which 30 were considered to be of potential international importance based on the additional gathering of information. Consequently, NFPs were contacted to verify information and obtain further details. Responses to those requests for verification were received within 24 hours for only 10 (33%) of the requests.

In the Region of the Americas, since at least 2015, additional means of communication (i.e., text messages and instant messaging services via mobile devices) have consistently and increasingly been used for event notification by some IHR NFPs.

<sup>11</sup>The IHR NFP is “the national centre, designated by each State Party which shall be accessible at all times for communications with WHO IHR Contact Points under these Regulations. Information available at: <http://www.who.int/ihr/publications/nfp/en/>

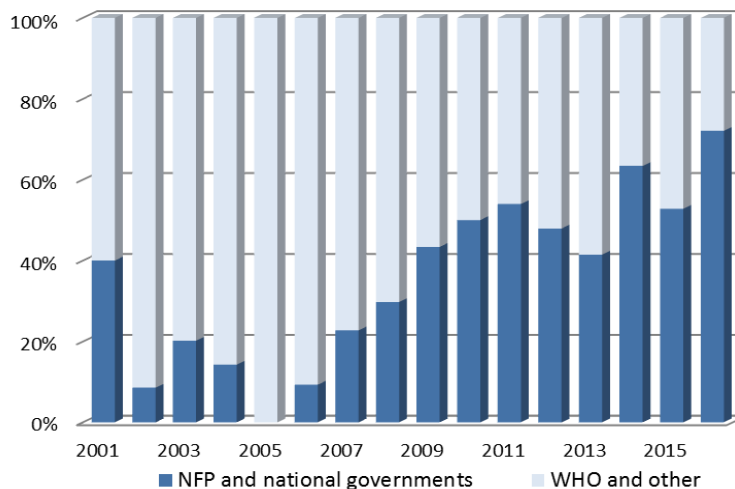


**Figure 3.** Number of events (N=1613) recorded in EMS, in the WHO Region of the Americas, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by WHO through other sources.



In the WHO **European Region**, 771 events were recorded in EMS (Figure 4) from 2001 to 2016. During 2016, 43 events were recorded in the EMS. For 72%, (n=31) the primary source of initial information for the majority of registered events was NFPs. The remaining 28% (n=12) events were detected through routine epidemic intelligence (including indicator and event-based surveillance), conducted at the European Regional Office and country office levels. NFPs in the European Region were contacted for the verification of 36 events, and responses to requests for verification were received within 24 hours for 32 events (89%).

**Figure 4.** Number of events (N=771) recorded in the EMS, in the WHO European Region, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by WHO through other sources.



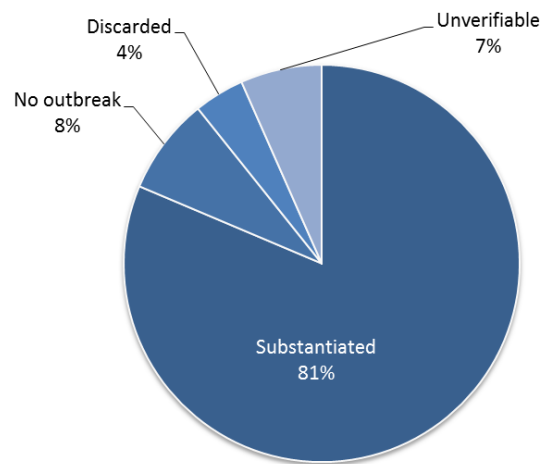
Overall, the cumulative proportion of initial event information received directly through NFP reports increased in all three Regions from 2007 to 2014. However, this was followed by a decrease in the participation of NFPs as the initial source of information in 2015. In 2016, the proportion of NFPs serving as the initial source of information varied among these three Regions. An increase was observed in the European Region (Figure 4), while the African Region experienced a steady decrease in NFP-reported events compared to previous years (Figure 2). NFP participation in the Region of the Americas was similar to the situation observed in 2015 (Figure 3).

The distribution of events by source of initial information and by subregion in the Americas is presented in Annex 3.

### Event designation

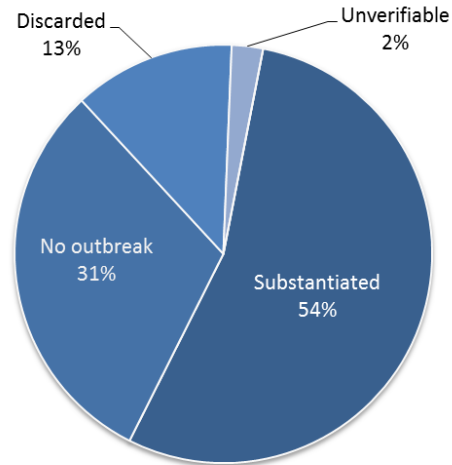
Between 2001 and 2016, some 1 508 (28%) of the 5 462 events assessed globally occurred in the WHO **African Region**. Of these 1 508 events, some 1 227 (81%) were substantiated, 119 (8%) were designated as no-outbreak, 100 (7%) as unverifiable and 62 (4%) as discarded, (Figure 5).

**Figure 5.** Distribution of events (N= 1508) in the WHO African Region by final designation, 2001 – 2016.



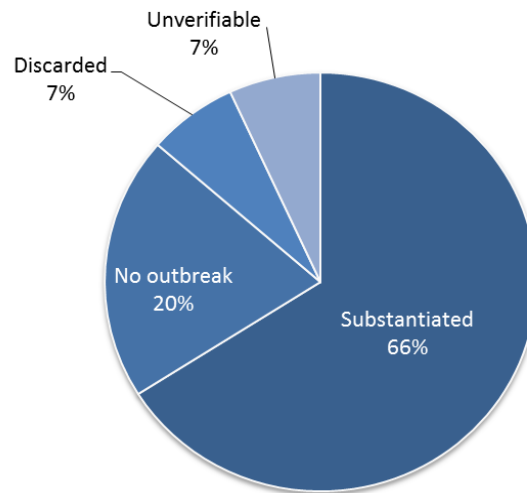
Between 2001 and 2016, some 1 613 (30%) of the 5 462 events assessed globally occurred in the WHO **Region of the Americas**. Of these 1 613 events, 877 (54%) were substantiated, 494 (31%) were designated as no-outbreak, 200 (13%) as discarded, and 46 (2%) as unverifiable (Figure 6).

**Figure 6.** Distribution of events (N= 1613) in the WHO Region of the Americas by final designation, 2001 – 2016.



Between 2001 and 2016, some 771 (14%) of the 5 462 events assessed globally in the EMS were in the **European Region**. Of these 771 events, 509 (66%) were substantiated, 157 (20%) were designated as no outbreak, 52 (7%) as discarded, and 53 (7%) as unverifiable (Figure 7).

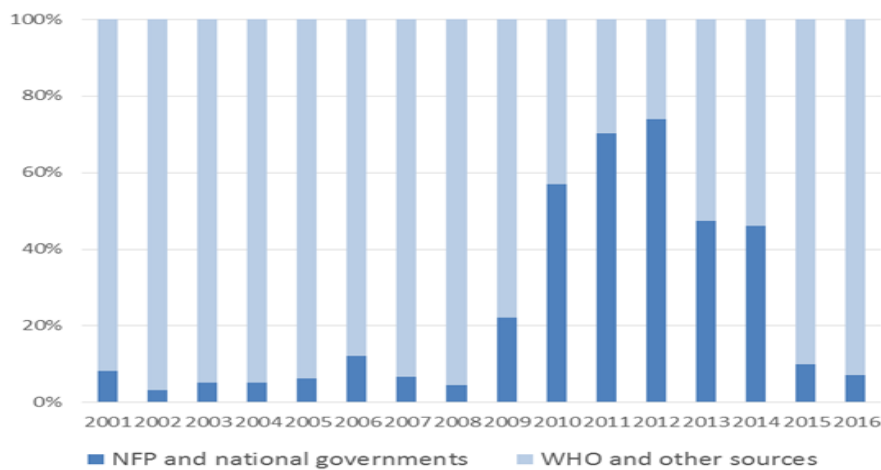
**Figure 7.** Distribution of events (N= 771) in the WHO European Region by final designation, 2001 – 2016.



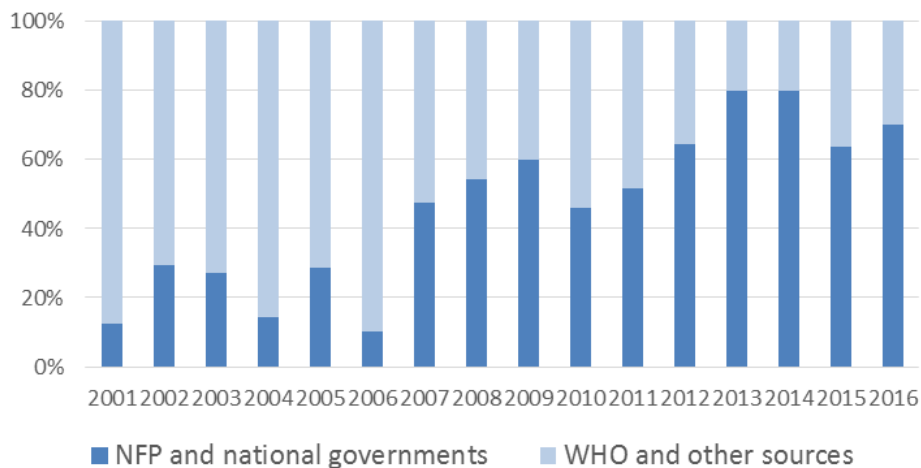
Of the three WHO Regions under review, the **African Region** accounts for the majority of substantiated events recorded in EMS (1 227/3 555), followed by the **European Region** (509/3 555) and the **Region of the Americas** (877/3 555).

With respect to the events subsequently designated as substantiated in the WHO Regions of Africa, the Americas and Europe, a similar trend is noted with an increase in the proportion of information received directly through NFP reports until 2014 and a decrease in 2015 (Figure 8, 9 and 10). Meanwhile, in the WHO African Region, the decrease in information received from NFPs started in 2014 and continued through 2016.

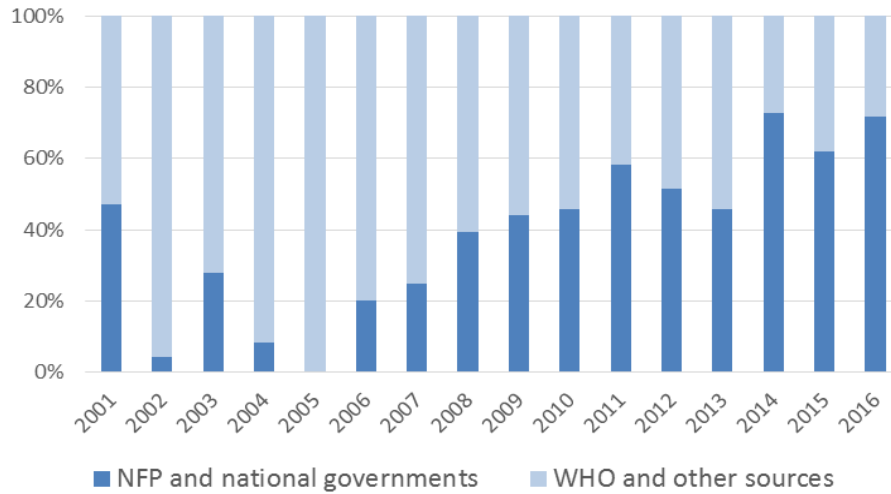
**Figure 8.** Number of substantiated events (N= 1 227) recorded in EMS, in the WHO African Region, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by WHO through other sources.



**Figure 9.** Number of substantiated events (N= 877) recorded in EMS in the WHO Region of the Americas, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by WHO through other sources.



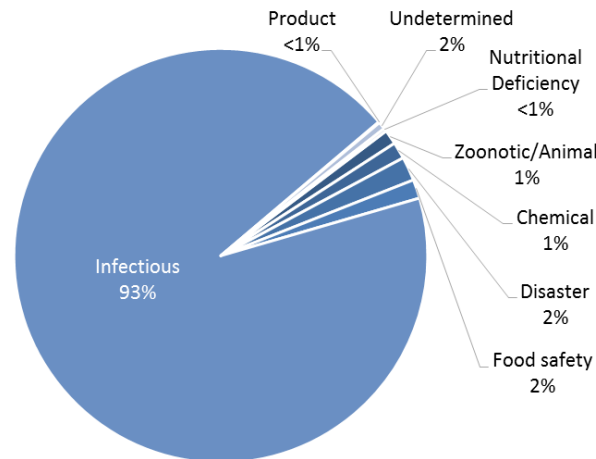
**Figure 10.** Number of substantiated events (N=509) recorded in EMS in the WHO European Region, by source of initial information, 2001-2016 - NFPs and national governments compared to initial information detected by the WHO through other sources.



**Hazard type**

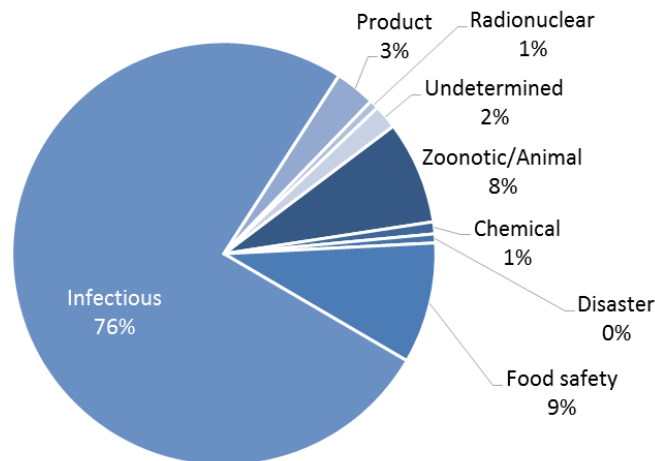
The 1 227 substantiated events reported between 2001 and 2016 in the **African Region** were classified as follows: due to infectious diseases (n=1 145, 93%), disaster-related (n=23; 2%), related to food safety (n=18; 1%), chemical (n=16; 1%), zoonotic/animal (n=14, 1%), undetermined (n=7, 1%), product-related (n=1, <1%), and nutritional deficiency (n=3; <1%)(Figure 11).

**Figure 11.** Distribution of substantiated events (N=1227) by hazard type in the WHO African Region, 2001 - 2016.



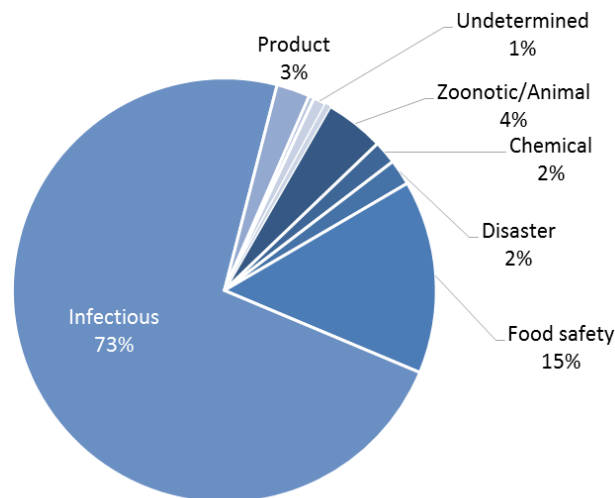
The 877 substantiated events reported between 2001 and 2016 in the **Region of the Americas** were classified as follows: due to infectious diseases (n=664, 76%), related to food safety (n=81; 9%), zoonotic/animal (n=69, 8%), product-related (n=27, 3%), undetermined (n=16, 2%), chemical (n=8; 1%), radio-nuclear (n=6; 1%), and disaster-related (n=6; 1%) (Figure 12).

**Figure 12.** Distribution of substantiated events (N=877) by hazard type in the WHO Region of the Americas, 2001 – 2016.



The 509 substantiated events reported in the **European Region** during the same period were designated as follows: infectious diseases (n=370, 73%), food safety (n=75; 15%), zoonotic/animal (n=25, 4%), product-related (n=13, 3%), chemical (n=9; 2%), disaster-related (n=10; 2%), undetermined (n=5, 1%) and radio-nuclear (n=2; <1%).(Figure 13).

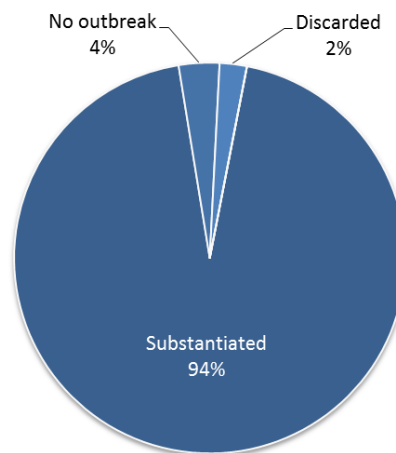
**Figure 13.** Distribution of substantiated events (N=509) by hazard type in the WHO European Region, 2001 – 2016.



The distribution of events by final designation in the sub-regions of the Americas is presented in Annex 4.

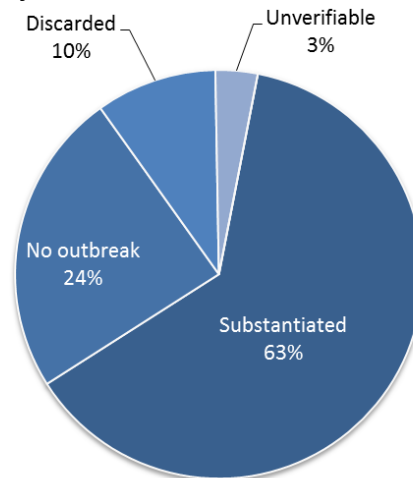
With regard to 2016 data, 89 (21%) of all 430 events recorded globally occurred in the **African Region**. Of that number, 84 (94%) were designated as substantiated, 3 (4%) as no-outbreak, 2 (2%) as discarded, and none were considered as unverifiable (Figure 14).

**Figure 14.** Distribution of events (N= 89) in the WHO African Region by final designation, 1 January – 31 December 2016



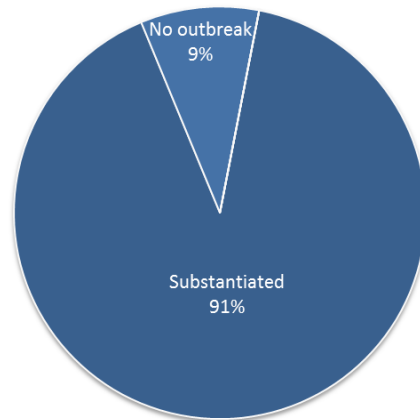
During the same year, 238 (55%) of the 430 events recorded globally occurred in the **Region of the Americas**. Of that number, 149 (63%) were designated as substantiated, 58 (24%) as no-outbreak, 23 (10%) as discarded, and 8 (3%) were considered as unverifiable (Figure 15).

**Figure 15.** Distribution of events (N= 238) in the WHO Region of the Americas by final designation, 1 January – 31 December 2016.



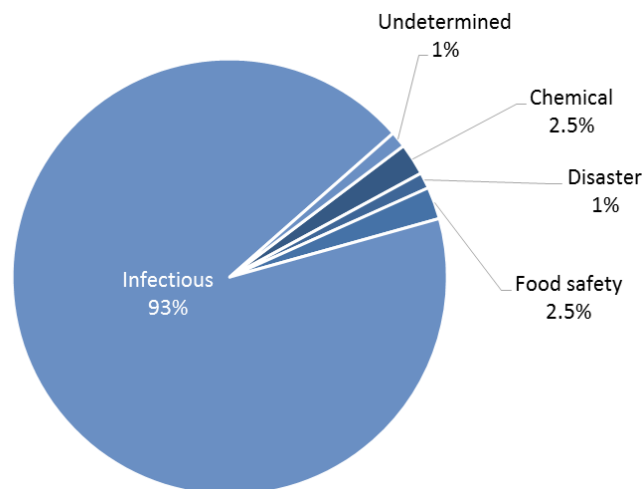
In the same period, 43 (10%) of the 430 events recorded globally occurred in the **European Region**. Of that number, 39 (91%) were designated as substantiated and 4 (9%) as no-outbreak, (Figure 16).

**Figure 16.** Distribution of events (N=43) in the WHO European Region by final designation, 1 January – 31 December 2016.



In the WHO **African Region**, 84 substantiated events occurred in 34 State Parties in 2016. Of that number; 78 (93%) were due to infectious diseases, 2 (2.5%) were due to food safety, 2 (2.5%) were chemical, 1 (1%) was due to disaster, and 1 (1%) was undetermined (Figure 17).

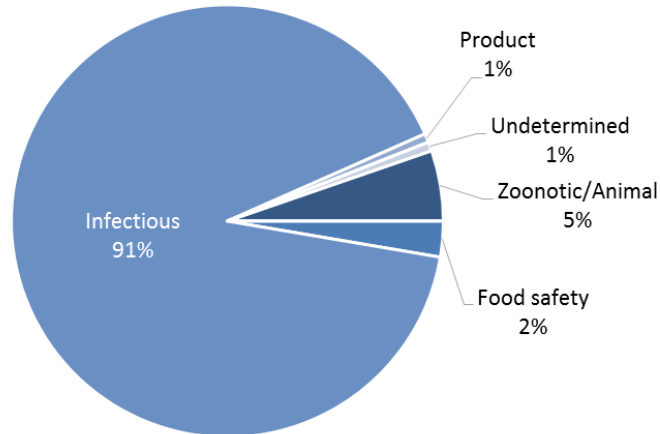
**Figure 17.** Distribution of substantiated events (N=84) by hazard in the WHO African Region, 1 January – 31 December 2016.



In the WHO **Region of the Americas**, 151 substantiated events occurred in 35 State Parties and 11 territories in 2016. Of that number, 137 (91%) were due to infectious diseases, 8 (5%) due to zoonotic/animal diseases, 4 (2%) due to food safety, one (1%) was product-related, and another one (1%) was undetermined (Figure 18).

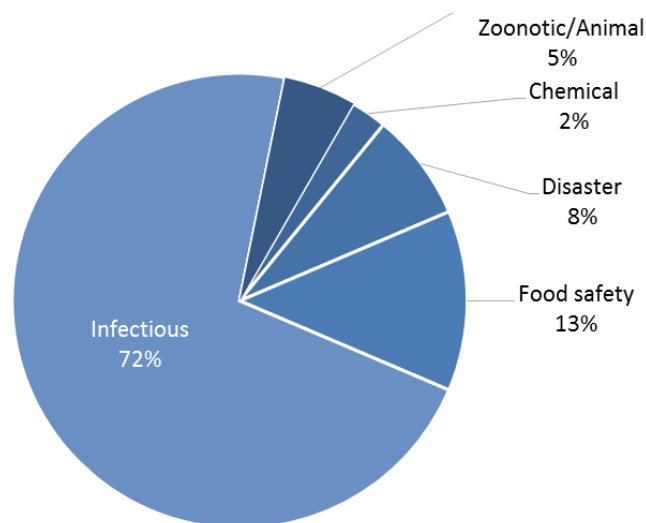


**Figure 18.** Distribution of substantiated events (N=151) by hazard in the WHO Region of Americas, 1 January – 31 December 2016.



In the WHO **European Region**, a total of 39 events were classified as substantiated and occurred in 22 Member States; 28 (72%) were due to infectious diseases, 5 (13%) related to food safety, 3 (8%) were disaster-related, two related to zoonotic/animal diseases (5%), and one (2%) was chemical (Figure 19).

**Figure 19.** Distribution of substantiated events (N=39) by hazard type in the WHO European Region, 1 January – 31 December 2016.



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## Information Dissemination

Under the provisions of Article 11 of the IHR, WHO shall communicate information to other States Parties that might help in preparing for and preventing the occurrence of similar incidents. It also ensures that WHO is an authoritative resource for disseminating reliable, up-to-date and readily accessible international public health information.

Examples of events registered in the WHO **African Region** during 2016 include, in no particular order: large urban yellow fever outbreaks in Angola and the Democratic Republic of the Congo; flare-ups of Ebola virus disease in Guinea, Liberia and Sierra Leone; Rift Valley fever outbreaks in Niger and Mali; outbreaks of cholera in many Member States of the region; and the sequelae of civil conflicts.

EIS postings, DON publications, situation reports and other information posted on respective WHO Regional Office webpages was used to alert and inform the international community regarding new, ongoing, and updated public health events. In 2016, 19 (16%) of the 117 EIS postings of new events (Figure 20), were linked to events occurring in the African Region, the majority of which related to yellow fever outbreaks in Angola and the Democratic Republic of Congo; Lassa fever events in Liberia and Togo; and Rift Valley fever in Niger. Furthermore, there were 23 DON publications in 2016 on events that occurred in or were related to the African Region.

More than 100 situation reports on key public health events were disseminated to the international community in 2016 including: 14 situation reports on Ebola virus disease outbreaks in Liberia, Guinea and Sierra Leone;<sup>12</sup> 64 situation reports on yellow fever outbreaks in the Democratic Republic of Congo and Angola;<sup>13</sup> 16 situation reports and health cluster bulletins on the cholera outbreak in South Sudan;<sup>14</sup> eight situation reports on Rift Valley fever in Niger<sup>15</sup>; four situation reports on the cholera outbreak in the Democratic Republic of Congo<sup>16</sup>; and one on the cholera outbreak in the Central African Republic.<sup>17</sup>

During the first semester of 2016, most of the events recorded in the WHO **Region of the Americas** related to the Zika virus disease and its complications; yellow fever in Peru and Brazil; increase of malaria in many countries; cases of enterobacteria infection with transferable resistance to colistin; infection by strains of *Candida auris* in health care services; and a diphtheria outbreak in Venezuela.

In 2016, the WHO Region of the Americas shared information concerning new, ongoing and updated acute public health events through several mechanisms. A total of 117 events were posted in the EIS, of which 62 (53%) occurred or were related to the Americas. Some 38 DON postings were on events occurring or related directly to events in the Americas, and 36 reports of events in the Americas were shared directly with NFPs by email.

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<sup>12</sup> <http://www.who.int/csr/disease/ebola/situation-reports/archive/en/>

<sup>13</sup> <http://www.who.int/emergencies/yellow-fever/situation-reports/archive/en/>

<sup>14</sup> <http://www.who.int/hac/crises/ssd/sitreps/en/>

<sup>15</sup> <http://www.who.int/hac/crises/ner/sitreps/en/>

<sup>16</sup> <http://www.who.int/hac/crises/cod/sitreps/en/>

<sup>17</sup> <http://www.who.int/hac/crises/caf/sitreps/en/>

Furthermore, 51 Epidemiological Alerts and Updates were disseminated via the regional website, of which 35 were related to Zika virus.<sup>18</sup> Between 17 February and 14 July, updates on Zika were issued weekly (21 updates). Since then and up to 29 December, 12 biweekly updates were published.<sup>19</sup> In addition, epidemiological information for countries and territories reporting autochthonous vectorial Zika transmission in the Americas were disseminated on a monthly basis from June to December 2016 with more than 300 Zika country and territory epidemiological reports released.<sup>20</sup>

During 2016, Epidemiological Alerts and Updates related to the Region of the Americas were cited in peer review publications a total of 218 times, representing a significant increase from 34 citations in 2015.<sup>21</sup> This increase is attributed to the Zika emergency in 2016 and demonstrates the contribution of epidemiological reports from States Parties to the literature on Zika virus.

In 2016, the NFPs in the Region of the Americas utilised IHR channels of communication to exchange information on 176 events of potential public health importance consistent with Articles 30 and 44 of the IHR. Of the 176 public health information exchanges between NFPs, 73% (131) were communications with NFPs in the Americas Region, 27% (48) were communications directed to NFPs in other Regions, with the majority 44% (21) being directed to NFPs in the WHO European Region.

Ensuring that Member States have fully functional means of communication, pursuant to Article 4 of the IHR, is integral to the exchange of event information with NFPs. Accordingly, in 2016 the WHO IHR Contact Point for the Region of the Americas carried out two communication tests with the 35 NFPs of the region, testing the official contact information provided for 24/7 communication with WHO and other NFPs. Further information and results are provided in Annex 5.

Examples of events recorded in the WHO **European Region** during 2016 include, in no particular order: an imported case of Lassa fever; an imported Coronavirus case; and an imported Zika congenital syndrome case.

In 2016, 10 of the 117 events (9%) posted in the EIS occurred in the European Region. In the same year, six DON were posted on events which occurred in or were related to the European Region.

A comparative review of the number of events published in the WHO Event Information Site for National IHR Focal Points by year and by WHO Region is presented in Figure 20.

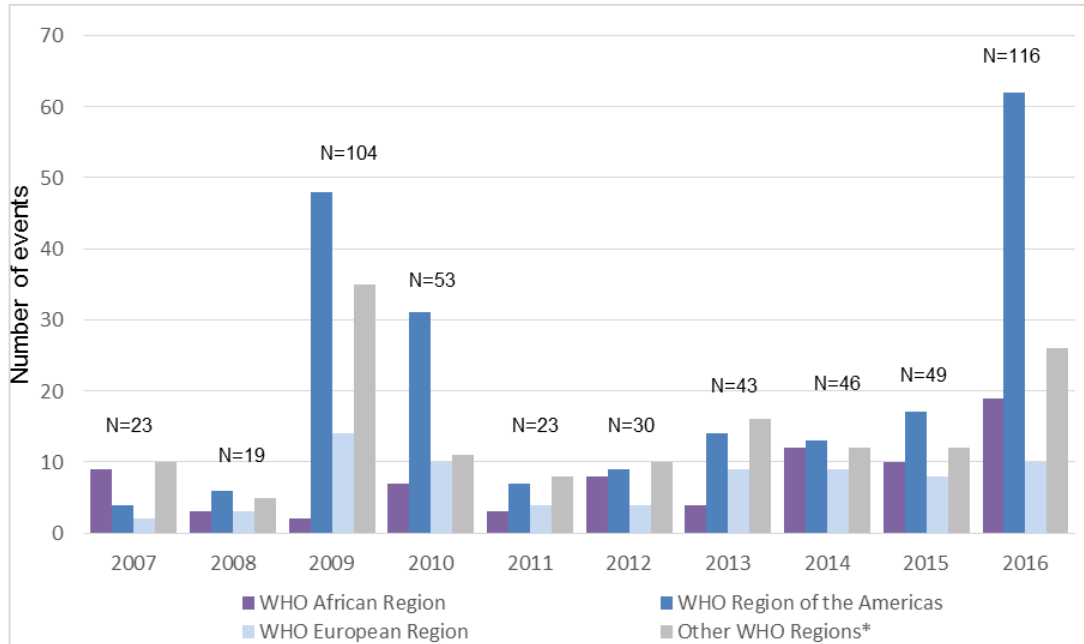
<sup>18</sup> PAHO/WHO Epidemiological Alerts and Updates available at: [www.paho.org/epialerts](http://www.paho.org/epialerts)

<sup>19</sup> PAHO/WHO Epidemiological Alerts and Updates on Zika, available at: [http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=11599&Itemid=41691&lang=en](http://www.paho.org/hq/index.php?option=com_content&view=article&id=11599&Itemid=41691&lang=en)

<sup>20</sup> PAHO/WHO Zika country and territory epidemiological reports, available at: [http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=11603&Itemid=41696&lang=en](http://www.paho.org/hq/index.php?option=com_content&view=article&id=11603&Itemid=41696&lang=en)

<sup>21</sup> The number was obtained through a systematic key word search carried out using: EBSCO, Google Scholar, Scopus, and Web of Science

**Figure 20.** Number of events published in the Event Information Site for National IHR Focal Points, by year and WHO Region, 2007 – 2016, N=506



## Discussion and conclusion

This report summarizes events recorded in EMS from 2001 to 2016 for three WHO Regions (Africa, the Americas and Europe) with a focus on 2016 data.

During the entire period (2001 to 2016), between 47% and 89% of the total annual events recorded globally in the EMS occurred in these three Regions. The largest number of events from the three Regions during that period occurred in 2009, 2010, and 2016 with 415, 405 and 370 recorded events respectively.

In 2016, these three WHO Regions accounted for 86% of all annual events recorded globally in the EMS. It should be noted that these events reflect those that are recorded in EMS and may not capture all events assessed by WHO. Furthermore, not all WHO Regions systematically record events in the EMS. Consistent and timely use of the EMS as a global platform for management of public health events of potential international concern, generates a record of the chronology of events, and provides an information audit trail that links the actions and decisions taken with the information available at the time. This guarantees the accountability and transparency of the Organization to monitor, document the response to and manage any event that may threaten public health security.

From 2007 to 2014, the proportion of public health events in which the initial source of information was NFPs and national governments increased in the Americas and the European WHO Regions.

During 2015 and 2016, the significant decrease in the proportion of NFPs as the initial source of information on public health events with potential international impact in the Region of the Americas is mainly related to the Zika events for which the initial source of information was the WHO epidemic intelligence activity. In the WHO African Region, the proportion of NFPs as the initial source of information for public health events that have potential international impact increased from 2009 to 2012, after which NFP participation decreased. NFP participation should be strengthened through successful implementation of the regional integrated disease surveillance and response strategy under which IHR is implemented. Further analysis of the reasons for decreased NFP participation needs to be conducted in both the African and Americas Regions.

During 2016, 94%, 65% and 91% of assessed events were classified as substantiated in the Africa, Americas and European WHO Regions respectively. Most of the events were due to infectious diseases. Compliance with Article 10 of the IHR, concerning timeliness in responding to requests for verification (provision of information allowing an informed risk assessment) was low in the Americas (33%) and European Regions (47%) and not systematic in the African Region.<sup>22</sup> For most events, NFPs take longer than the IHR-mandated 24 hours to respond to event verification requests. Modern communication methods should be used to improve adherence to this target. However, internal WHO processes should also facilitate the timely sharing of information and should be revised if they undermine fulfilment of the IHR mandate.

Information on new and ongoing events was communicated to the international community. Additional advice was provided to Member States through a large number of public health event reports shared with NFPs; in 2016 they were mostly related to infectious diseases. In total, the African, the Americas, and the European Regions contributed to the publication of information on 91 out of 117 (78%) EIS postings, 67 out of 137 (49%) DON publications-, and a significant number of other reports including situational reports, bulletins and publications on regional websites. As indicated in the “Report of the Review Committee on the Functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009” presented at the 64<sup>th</sup> session of the World Health Assembly in 2011: the EMS lists many more events than those communicated through the EIS, DON and other reports located on WHO webpages, since only some EMS events are required to be communicated under Article 11 of the IHR. The number of reports shared with Member States in the last five years was appreciable. However, the need for further feedback from Member States remains regarding the use of the information received from the Organization for evidence-driven public health decision-making at country level.

In 2016, significant public health emergencies, including those of international concern, affected all three Regions, such as large yellow fever outbreaks, continuation of the Ebola and Zika virus disease outbreaks, sequelae of civil conflict and natural disasters. Besides, the imported public health events which affected the European Region highlight the need to further implement a globalised approach to public health security. The existing collaboration between the WHO Regional Offices (for Africa, the Americas, Europe and other Regions), WHO Headquarters, and all Member States is instrumental in enhancing early warning and response mechanisms (including

<sup>22</sup> Pursuant to IHR (2005) Article 10, Verification: “2. Pursuant to the foregoing paragraph [Article 10.1] and to Article 9, each State Party, when requested by WHO, shall verify and provide: (a) within 24 hours, an initial reply to, or acknowledgement of, the request from WHO; (b) within 24 hours, available public health information on the status of events referred to in WHO’s request; and (c) information to WHO in the context of an assessment under Article 6, including relevant information as described in that Article.”

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event detection, verification, risk assessment and response); strengthening effective communications among Member States; and ensuring an adequate and timely response to public health emergencies.

Sustainable epidemic intelligence activities are critical to early event detection to ensure a rapid and effective response while avoiding interference with travel and trade. Achieving this goal requires dedicated human resources, close collaboration with Member States, public health and humanitarian partners and other stakeholders, transparency in information-sharing among Member States and sustained funding.

In an inter-connected world, timely sharing of reliable information guarantees better decision-making in health. However, without the full commitment and contribution of Member States to all aspects of the IHR, particularly those related to detection, verification, assessment and reporting of events, public health security may be threatened.

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## Annexes

### *Annex 1. List of Member States of the WHO African Region, WHO Region of the Americas and WHO European Region*

The **WHO African Region** consists of the following 47 Member States:

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

The **WHO Region of the Americas** consists of the following 35 Member States:

Antigua and Barbuda, Argentina, the Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

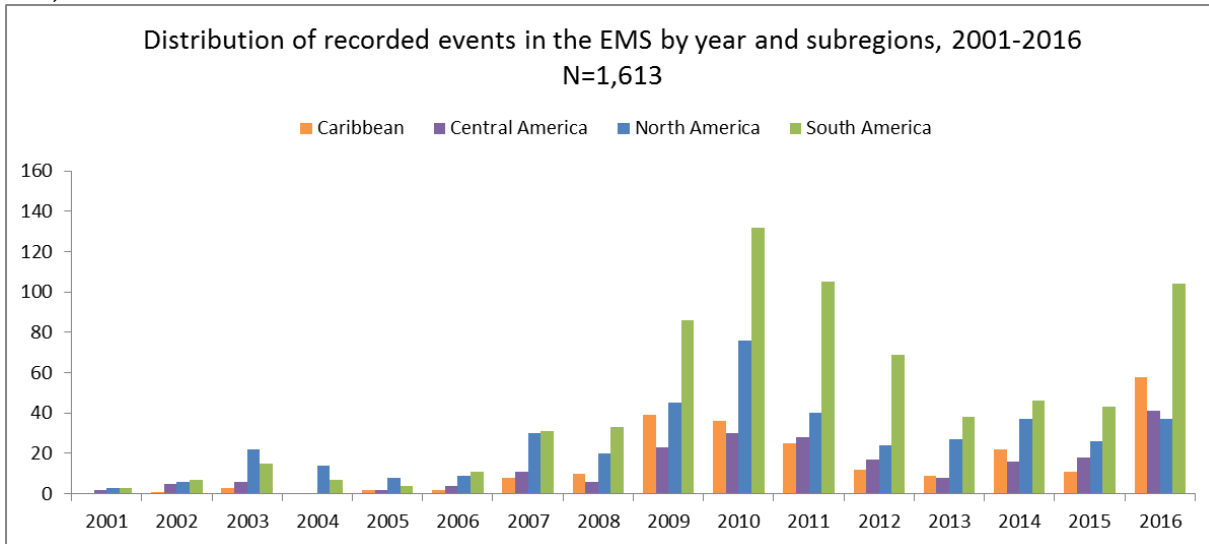
The **WHO European Region** consists of the following 53 Member States:

Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan



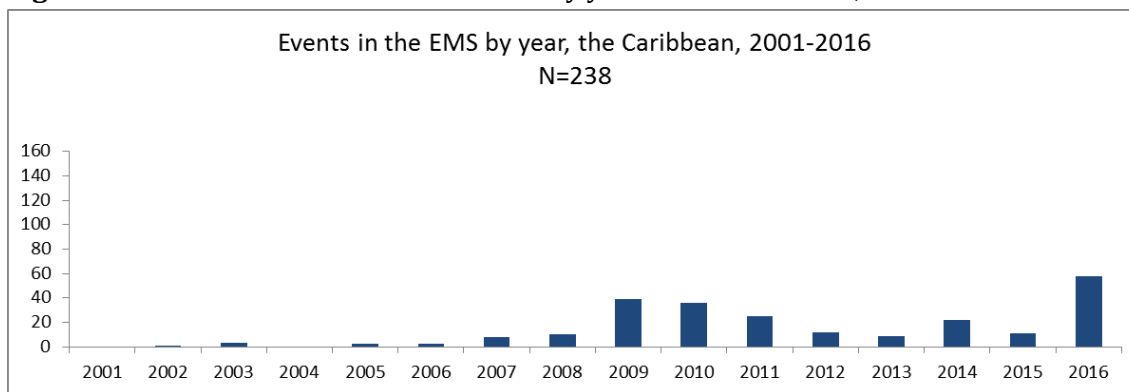
*Annex 2. Total events in the EMS in the Americas shown by sub-regions and year*

**Figure 1.** Comparative view of all events in the EMS in the Americas by subregion and year, 2001-2016, N=1613



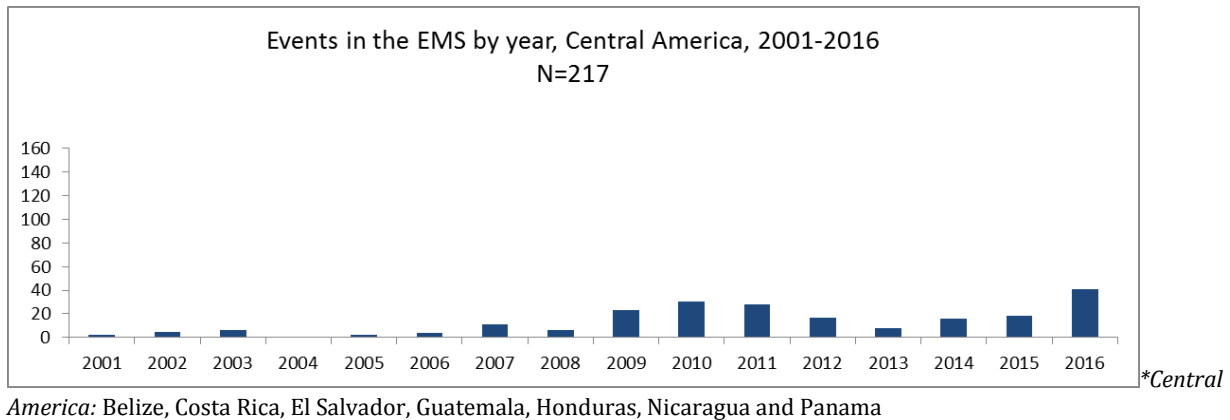
Distribution of events in the EMS in the Americas per subregion and year:

**Figure 2.** Distribution of events in the EMS by year in the Caribbean, 2001-2016

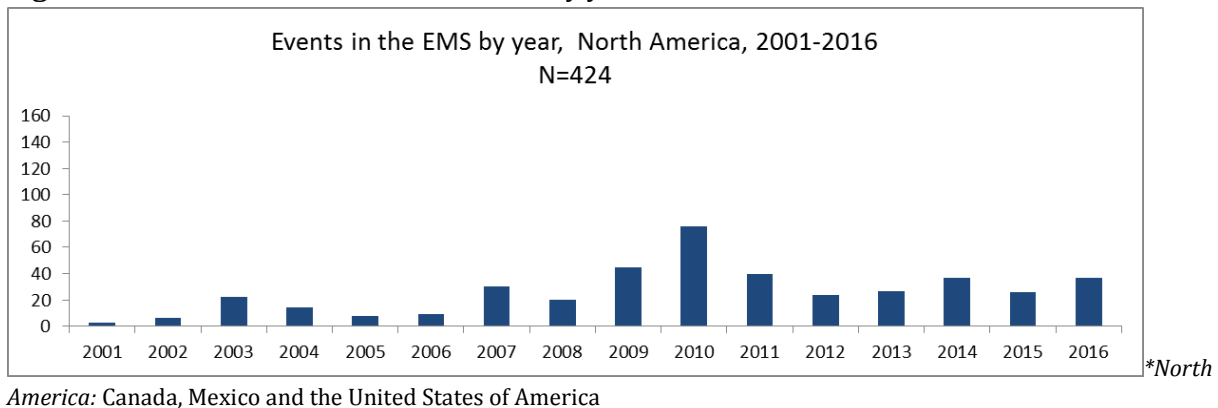


\*Caribbean: Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, Bonaire, Saint Eustatius and Saba, the British Virgin Islands, Curacao, the Cayman Islands, Cuba, Dominica, the Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Monsterrat, Puerto Rico, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Sint Maarten, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos and the U.S. Virgin Islands

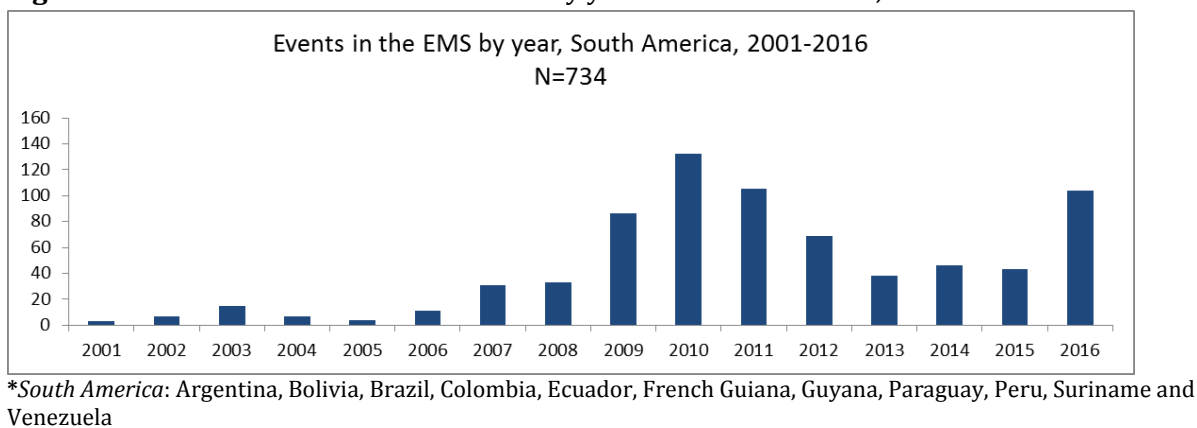
**Figure 3.** Distribution of events in the EMS by year in Central America\*, 2001-2016



**Figure 4.** Distribution of events in the EMS by year in North America\*, 2001-2016

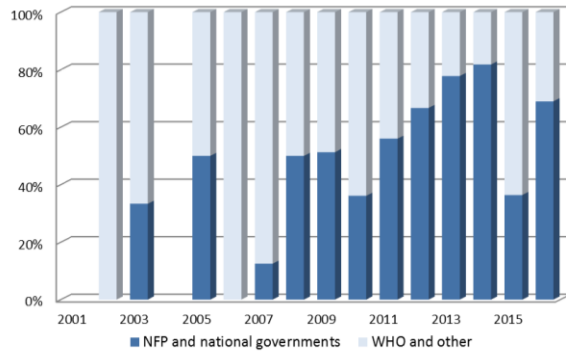


**Figure 5.** Distribution of events in the EMS by year in South America\*, 2001-2016

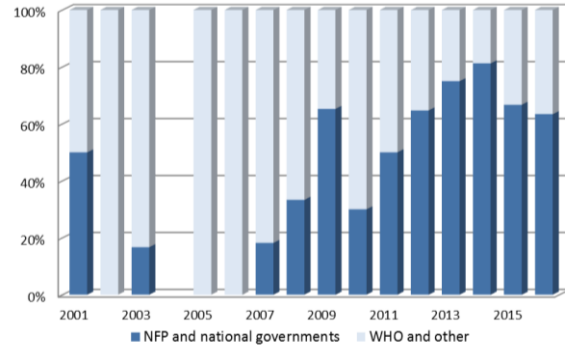


**Annex 3. Distribution of events in the EMS by year and source of information, per subregion of the Americas<sup>23</sup>**

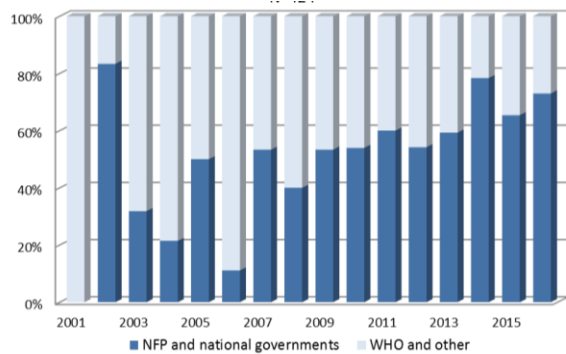
**Figure 1.** Distribution of events in the EMS by source of information and year in the Caribbean, 2001-2016, N=238



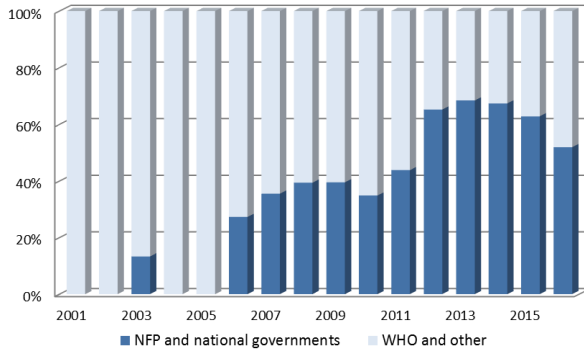
**Figure 2.** Distribution of events in the EMS by source of information and year in Central America, 2001-2016, N= 217



**Figure 3.** Distribution of events in the EMS by source of information and year in North America, 2001-2016, N = 424



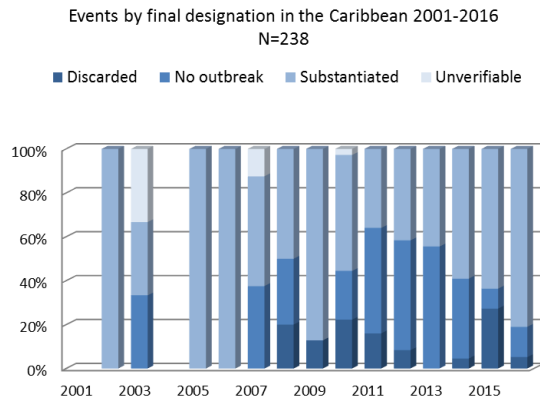
**Figure 4.** Distribution of events in the EMS by source of information and year in South America, 2001-2016, N= 714



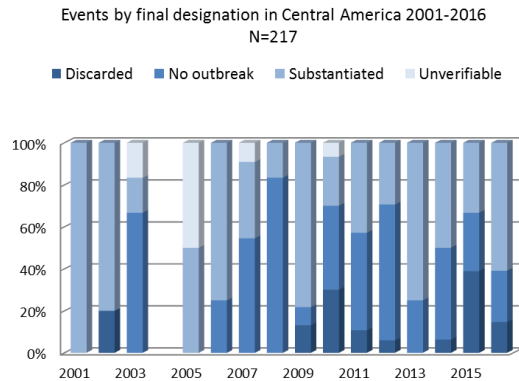
<sup>23</sup> Annex 2 provides a list of the countries and territories included in the data of each sub-region

**Annex 4. Distribution of events in the EMS by year and final designation, per subregion of the Americas<sup>24</sup>**

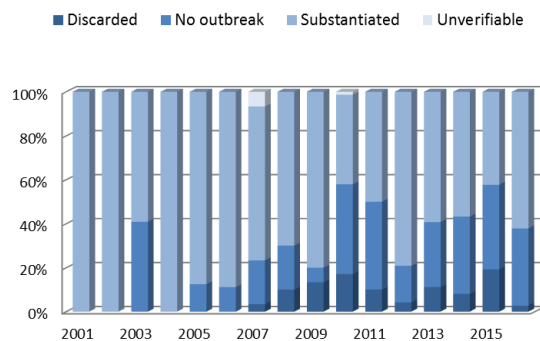
**Figure 1.** Distribution of events in the EMS by final designation and year in the Caribbean, 2001-2016, N=238



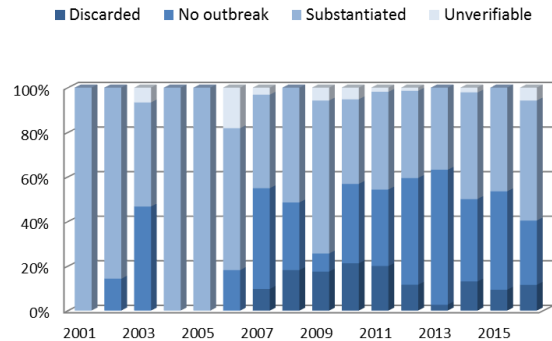
**Figure 2.** Distribution of events in the EMS by final designation and year in Central America, 2001-2016, N=217



**Figure 3.** Distribution of events in the EMS by final designation and year in North America, 2001-2016, N=424



**Figure 4.** Distribution of events in the EMS by final designation and year in South America, 2001-2016, N=734



<sup>24</sup> Annex 2 provides a list of the countries and territories included in the data of each sub-region

### Annex 5. Communication tests under IHR (2005) in the Region of the Americas

Ensuring that Member States have fully functional means of communication, pursuant to Article 4 of the IHR, is integral to the exchange of event information with NFPs. Accordingly, in 2016 the WHO IHR Contact Point for the Region of the Americas carried out two communication tests with the 35 NFPs of the Americas, testing the official contact information provided for 24/7 communication with WHO and other NFPs. The results are presented in Annex 5.

The communication tests have been carried out with NFPs in the WHO Region of the Americas since 2007. After each test, the outcome is shared with NFPs to address any unsuccessful results. Results of the phone communication test are categorized as successful if it is possible to reach the NFP at any of the official phone numbers listed in the WHO directory for NFPs. Phone communication tests are categorized as unsuccessful if it is not possible to reach an NFP or someone from the NFP team through each of the phone numbers listed and after calling on at least two different dates. Email communication tests are categorized as successful if an acknowledgement is received for the email communication test message. Email communication tests are categorized as unsuccessful if no acknowledgement is received for the email communication test message. The figure below shows a comparison of the phone and email communication test results in the Americas for 2007 to 2016 (biannual tests have been conducted since 2012).

Comparison of email and phone communication test results in the Region of the Americas, 2007-2016

