

# Acute Public Health Events Assessed by WHO Regional Offices for Africa, the Americas, and Europe under the International Health Regulations (2005)

## 2017 Report

November 2018

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# EXECUTIVE SUMMARY

Since 1997, the World Health Organization (WHO) has established a mechanism for outbreak detection, verification, and information sharing as part of global disease surveillance. With the entry into force of the International Health Regulations (2005) (IHR) in June 2007, WHO and State Parties committed to detect, verify, assess and report events that may pose a risk to international public health. Through the IHR channels, WHO and State Parties maintain surveillance, reporting, and response capacities at country, regional, and global levels not only for infectious diseases but also for other categories of potential threats (all-hazards approach). Timely communication of potential public health threats aim to enable rapid response measures for those at risk.

This report describes public health events detected, assessed and reported from 2001 to 2017, with a primary focus on the year 2017, in three WHO Regions: Africa, the Americas, and Europe. The data on public health events that occurred in State Parties from 2001 to 2017 were recorded by WHO in its Event Management System (EMS), a password-protected web-based tool accessible to professional personnel at WHO Country, Regional, and Headquarter Office levels.

From 2001 to 2017, 5,884 events were recorded in the WHO EMS, 411 of which were recorded in 2017 alone. Of these events in 2017, 142 events were in the WHO African Region, 119 events in the WHO Region of the Americas, and 49 in the WHO European Region. While most of these events were of infectious origin (e.g., cholera, Crimean-Congo haemorrhagic fever, measles, Yellow fever, Zika virus), other events such as food safety-related, radiologic or nuclear, or sequels of civil conflicts and natural disaster have contributed to the burden of international public health events.

Effective surveillance systems and timely communication and information sharing through the global network of National IHR Focal Points (NFPs) of State Parties is critical to manage the impact posed by complex and severe events that occur. Overall, the initial source of information for around 50% of the 2007-2017 events in the WHO Regions of the Americas and Europe was the NFP. In the WHO Region for Africa however, detection was done through routine epidemic intelligence activities coordinated by the Regional Office. Of all events recorded in 2017 globally, 61% were substantiated. During 2017, timeliness in responding to verification requests, as required by the IHR (24 hours), was 38% for the Region of the Americas and 75% for the European Region. Nevertheless, reports on these events in 2017 were disseminated to the international public health community through various channels.

This report highlights the relevance and critical importance of conducting and sustaining epidemic intelligence activities, at national and international levels, as well as to provide timely and accurate information on public health events to decision makers. To achieve early detection to respond rapidly and effectively to these emergencies requires dedicated human resources, close collaboration with State Parties, humanitarian partners, and other stakeholders, transparent information-sharing among Member States, and sustained funding.

# INTRODUCTION

The International Health Regulations (2005) (IHR) is an international legal framework that facilitates international efforts for detection, verification, risk assessment, and dissemination of information on acute public health events that may threaten public health security.

Under the IHR, 196 State Parties around the world have committed to strengthen their national surveillance and response capacities for the purpose of improving international surveillance and reporting mechanisms of public health events. As part of the accountability and transparency of the Organization, actions undertaken under the IHR are documented using internal recording procedures and tools.

Since 2012, the WHO Regional Office for the Americas and the WHO Regional Office for Europe have prepared joint reports to share with State Parties, which include figures on event detection, designation, and type of hazard. These joint reports have been disseminated through the Event Information Site (EIS)<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 second time, the WHO Regional Office for Africa together with the Region of the Americas and the WHO Regional Office for Europe 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 2017, with a particular focus on the events that occurred in the WHO Regions of Africa, the Americas, and Europe during 2017.

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1 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

2 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/>

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

# METHODOLOGY

Events of potential international public health concern are detected through epidemic intelligence activities conducted by dedicated teams of WHO public health professionals and reported by State Parties. Information for each detected, verified, and assessed event, including operational decisions, presented in this report was documented and recorded in the WHO Event Management System (EMS).<sup>4,5</sup> The EMS is a password-protected web-based tool accessible to professional personnel at the three levels of the WHO: Country Office, Regional Office and Headquarters. The criteria for entering information into the EMS include: an event notified by a State Party;<sup>6</sup> an unofficial report for which a request for verification is sent to a State Party;<sup>7</sup> and events for which WHO assistance is requested.

After an event is detected or notified to WHO, in close collaboration with subject matter specialists across the three levels of the Organization, the risk assessment is conducted continuously until the event is closed in the EMS. The risk assessment is shared with NFPs and, when necessary, with the international community through various mechanisms.

Assessed events that may pose a risk to international public health are communicated to State Parties and the international community through different channels, namely: the EIS, the WHO Disease Outbreak News (DONs), websites and bulletins of WHO Headquarters and 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 July 2018. Events are based on date of first information received from 1 January 2017 to 31 December 2017. Consequently, previous and future reports may show statistical differences because the information is updated.

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4 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.

5 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)

6 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."

7 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."

# 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*, 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 its occurrence, despite the best efforts to obtain such information.

Hazards are categorized as:

- *animal*, if there is potential harm to public health from zoonosis;
- *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 potential harm to public health from an infectious disease;
- *natural disaster*, if there is potential harm to public health from a natural disaster;
- *nutritional deficiency*, if there is potential harm to public health from nutritional deficiencies;
- *product*, if there is 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 potential harm to public health from the toxic effects of ionizing radiation; and
- *undetermined*, if there is potential harm to public health from an undetermined hazard.

# RESULTS

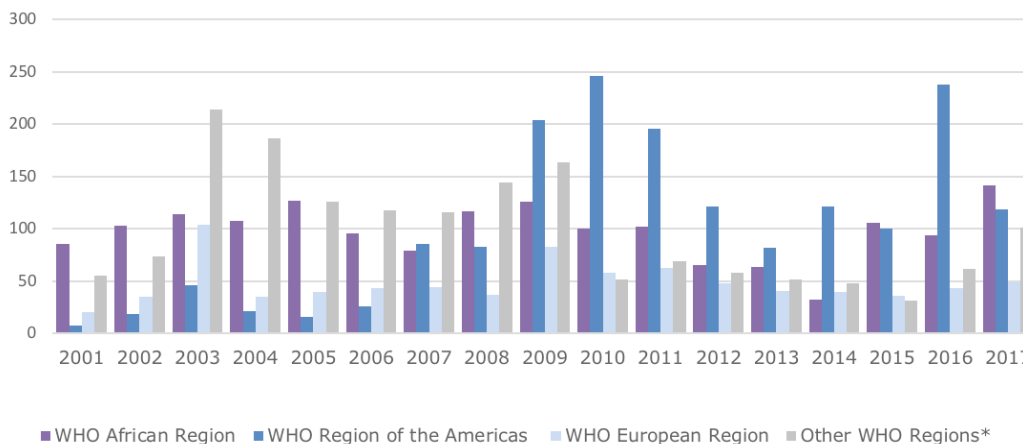
## Event Detection

From 2001 to 2017, a total of 5,884 public health events were recorded globally in the EMS, of which 4,212 (72%) occurred in the Regions of Africa, the Americas, and Europe (**Figure 1**), similar to the proportion observed in 2016.

Globally, in 2017, a total of 411 public health events were detected, recorded in the EMS, and monitored by WHO, of which 142 (35%) occurred in 34 Member States in the WHO African Region, 119 (29%) in 35 Member States and 11 territories in the WHO Region of the Americas, and 49 events (12%) in 23 Member States in the WHO European Region (**Figure 1**). Annex 1 provides a list of the Member States in each WHO Region. 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 2015 (89%), 2010 (88%), and 2016 (86%).

From 2010 to 2015, 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 2017, there was a significant increase in recorded events in the African Region and a significant decrease by 50% in events recorded in the Region of the Americas. On a sub-regional level in the Region of the Americas, the most significant decrease in number of events was seen in the Caribbean. *The distribution of events recorded in the EMS for the Americas, by sub-region, is presented in Annex 2.*

**Figure 1. Number of events (N=5,884) recorded in the EMS by WHO Regional Offices, by year, from 2001 to 2017.**



\*Other WHO Regions represent 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>

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

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

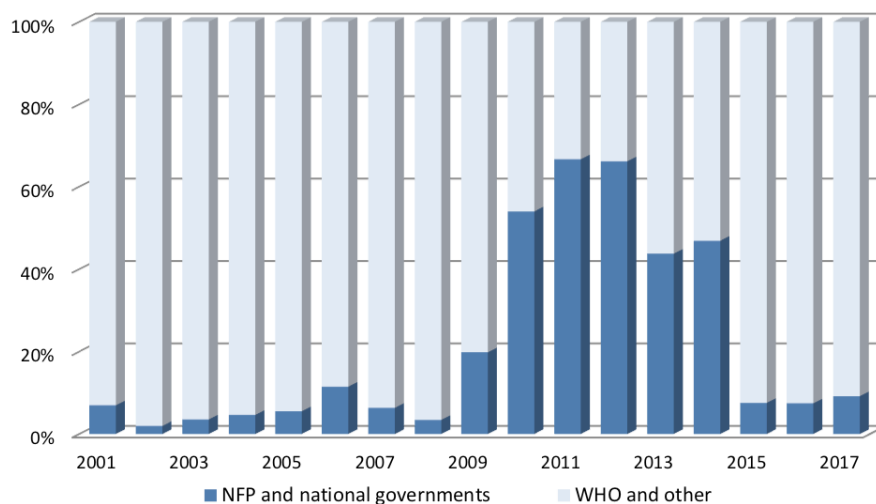
10 <http://www.wpro.who.int/en/>

## Initial Source of Event Information

There exist variations in procedures between each of the WHO Regions that impact the data collected on initial source of event information; these variations should be considered when interpreting the following data.

In the WHO **African Region**, 1,661 events were recorded in the EMS from 2001 to 2017. Of the 142 events recorded in 2017, 129 (90%) 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 Regional Office for Africa and WHO Country Offices (**Figure 2**). The remaining 13 events (10%) were notified by NFPs and national governments.

**Figure 2. Number of events (N=1,661) recorded in the EMS, in the WHO African Region, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by WHO through other sources.**

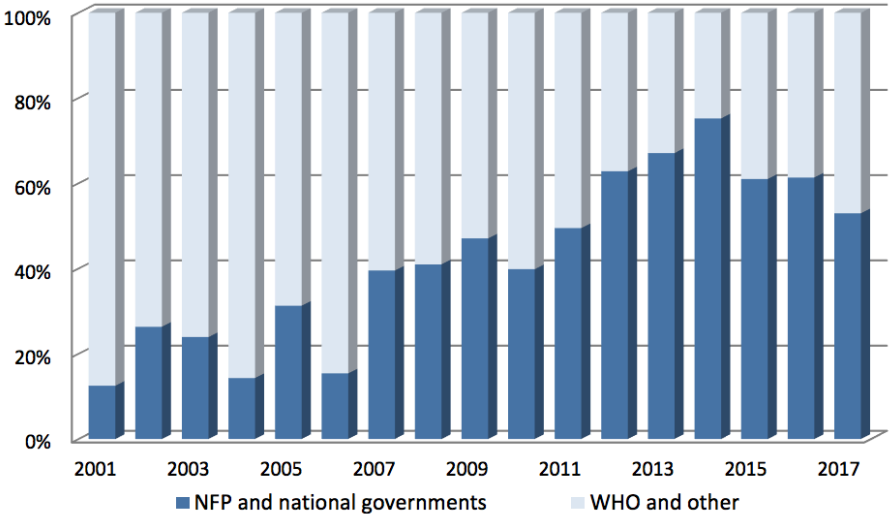


In the WHO **Region of the Americas**, 1,732 events were recorded in EMS from 2001 to 2017. Of the 119 events recorded in 2017, 63 (53%) were notified by NFPs and national governments. The remaining 56 events (47%) were detected through routine epidemic intelligence (including indicator and event-based surveillance) conducted at the Americas Regional and Country Office levels (**Figure 3**). Participation of NFPs and national governments as the first source of information continued to decrease during 2017. Of the 119 signal/events detected by PAHO/WHO epidemic intelligence activity, 56 were unofficial reports and after gathering information, 37 of the 56 were considered to be of potential international importance. Consequently, NFPs were contacted to verify information and obtain further details. Responses to requests for verification were received within 24 hours for only 14 (38%) requests sent to NFPs.

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 NFPs.

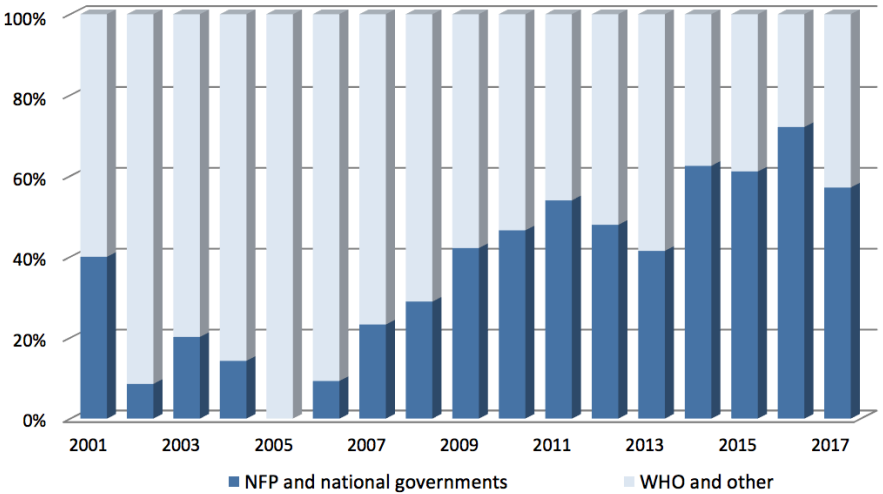


**Figure 3. Number of events (N=1,732) recorded in the EMS, in the WHO Region of the Americas, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by WHO through other sources.**



In the WHO **European Region**, 819 events were recorded in the EMS (**Figure 4**) from 2001 to 2017. During 2017, 49 events were recorded in the EMS. NFPs were the source of initial information for 28 (57%) of registered events, including through the European Commission Early Warning and Response System (EWRS). The other 21 events (43%) were detected through routine epidemic intelligence (including indicator and event-based surveillance), conducted at the WHO Regional Office for Europe and Country Office levels. In 2017, NFPs in the European Region were contacted for verification for 20 events, and responses to requests for verification were received within 24 hours for 15 events (75%) and within 48 hours for four (20%) additional events.

**Figure 4. Number of events (N=819) recorded in the EMS, in the WHO European Region, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by WHO through other sources.**



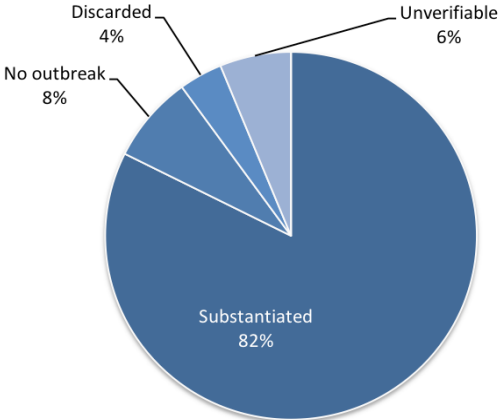
Overall, during 2017, a decrease in the proportion of initial event information received directly through NFP reports was observed in these three Regions, a similar trend reported since 2014. In the sub-regions of the Americas, Central America was the only sub-region where source of information by NFP or national governments increased in 2017. The response rate for requests for verification slightly increased in the Region of the Americas compared with 2016 (36% compared to 33%), but was less than in 2015 (54%). Similarly, the response rate for requests for verification decreased in the European Region from 89% (32/36) in 2016 to 75% (15/20) in 2017.

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

### Event Designation

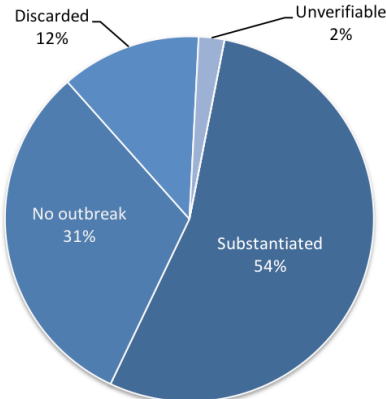
Between 2001 and 2017, of the 5,884 events assessed globally 1,661 (28%) occurred in the WHO **African Region**. Of these 1,661 events, 1,368 (82%) were designated as substantiated, 127 (8%) as no outbreak, 103 (6%) as unverifiable, and 63 (4%) as discarded (**Figure 5**). Note, in this Region, not all requests for verification are entered in the EMS; those that are not true events are less likely to be recorded, leading to a higher proportion of those entered being substantiated and an underrepresentation of the events detected in this Region.

**Figure 5. Distribution of events (N=1,661) in the WHO African Region by final designation, 2001–2017.**



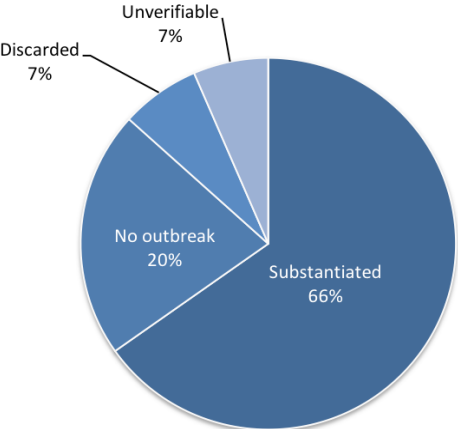
Between 2001 and 2017, of the 5,884 events assessed globally 1,732 (29%) occurred in the WHO **Region of the Americas**. Of the 1,732 events, 935 (54%) were designated as substantiated, 545 (31%) as no outbreak, 213 (12%) as discarded, and 39 (2%) as unverifiable (**Figure 6**).

**Figure 6. Distribution of events (N=1,732) in the WHO Region of the Americas by final designation, 2001–2017.**



Between 2001 and 2017, of the 5,884 events assessed globally in the EMS, 819 (14%) were in the **European Region**. Of these 819 events, 534 (65%) were designated as substantiated, 176 (21%) as no outbreak, 56 (7%) as discarded, and 53 (6%) as unverifiable (**Figure 7**).

**Figure 7. Distribution of events (N=819) in the WHO European Region by final designation, 2001–2017.**



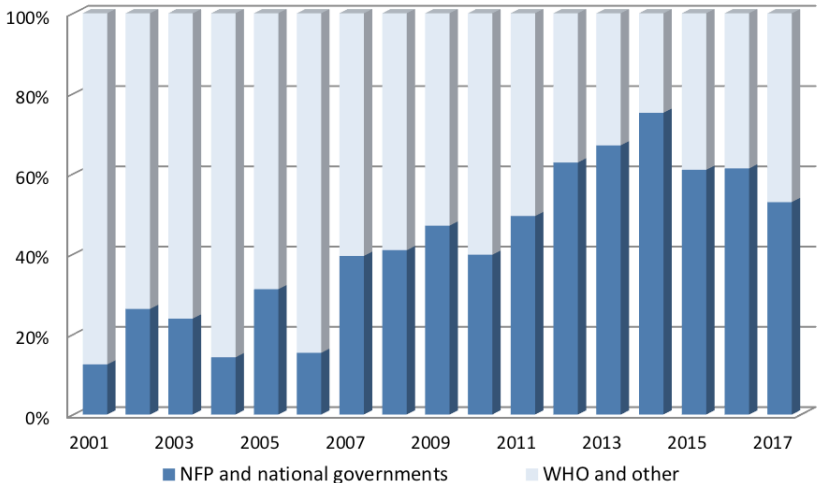
Of the three WHO Regions under review, the **African Region** accounts for the majority of substantiated events recorded in the EMS (1,363/3,826; 35.6%), followed by the **Region of the Americas** (935/3,826; 24.4%), and the **European Region** (534/3,826; 13.9%).

With respect to the events subsequently designated as substantiated in the WHO Regions of Africa, the Americas, and Europe, in the last five years (2013 to 2017) the proportion of substantiated events among all recorded events ranged from 91% to 96% (median 91%) for the **African Region**; 46% to 63% (median 49%) for the **Region of the Americas**, and 51% to 91% (median 58%) for the **European Region**.

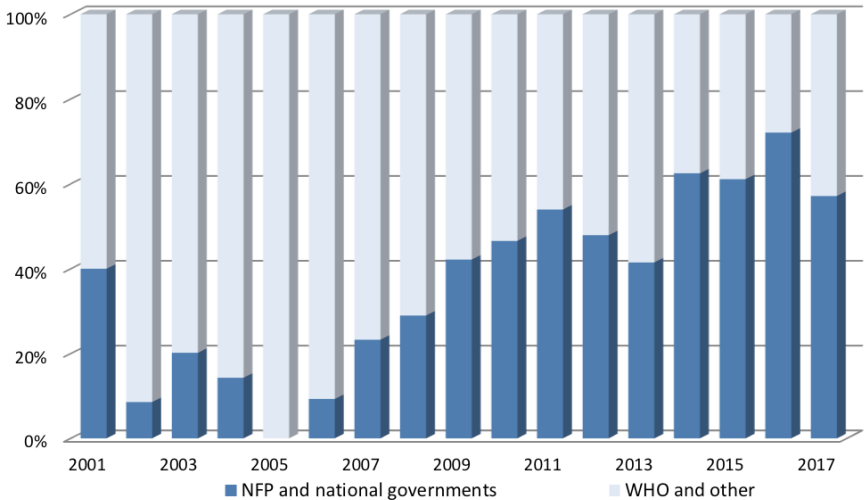
In 2017 alone, the number of substantiated events decreased in each sub-region of the Americas. The distribution of events by final designation in the sub-regions of the Americas is presented in Annex 4.

Among substantiated events, a similar trend is noted with a decrease in the proportion of information received directly through NFP reports in both Region of the Americas and European Region (Figures 8 and 9). Meanwhile, in the WHO African Region, following a significant decrease in 2015, the proportion of information received from NFPs has been steady among total events, as well as substantiated events (Figure 10).

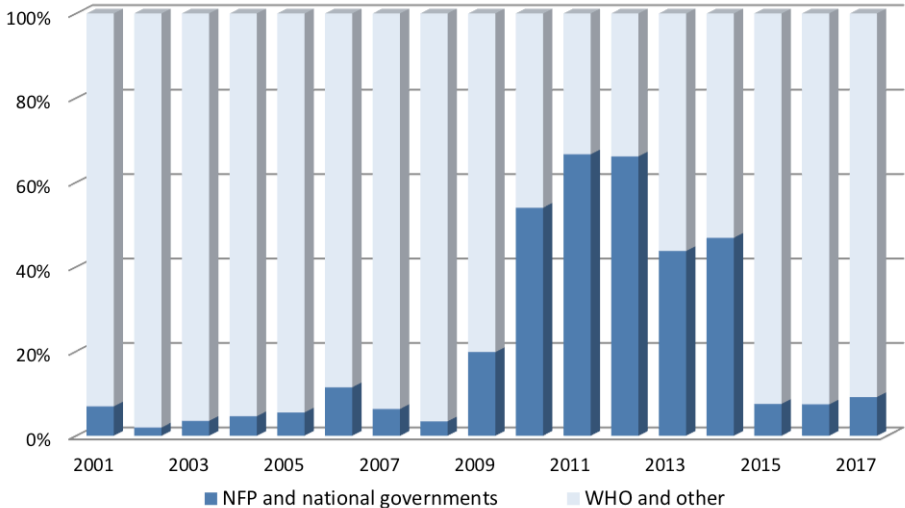
**Figure 8. Number of substantiated events (N=935) recorded in the EMS in the WHO Region of the Americas, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by WHO through other sources.**



**Figure 9. Number of substantiated events (N=534) recorded in the EMS in the WHO European Region, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by the WHO through other sources.**



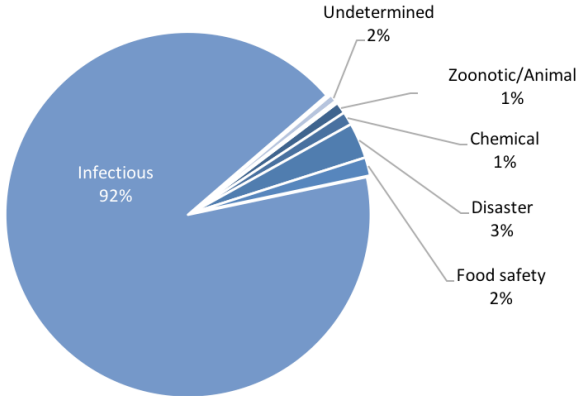
**Figure 10. Number of substantiated events (N=1,363) recorded in the EMS in the WHO African Region, by source of initial information, 2001–2017 – NFPs and national governments compared to initial information detected by the WHO through other sources.**



**Hazard Type**

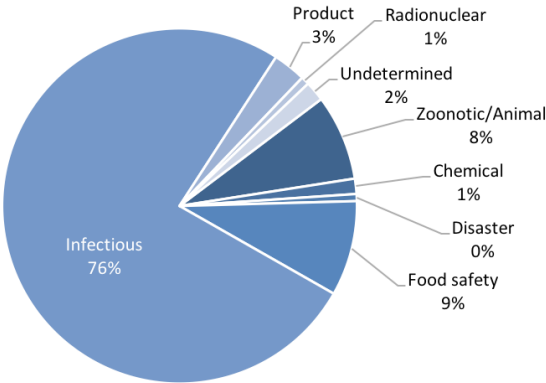
The 1,363 substantiated events reported between 2001 and 2017 in the **African Region** were classified as follows: due to infectious diseases (N=1,253; 92%), disaster-related (N=43; 3%), related to food safety (N=22; 2%), chemical (N=16; 1%), zoonotic/animal (N=14; 1%), undetermined (N=9; 1%), product-related (N=2; <1%), and nutritional deficiency (N=3; <1%) (**Figure 11**).

**Figure 11. Distribution of substantiated events (N=1,363) by hazard type in the WHO African Region, 2001–2017.**



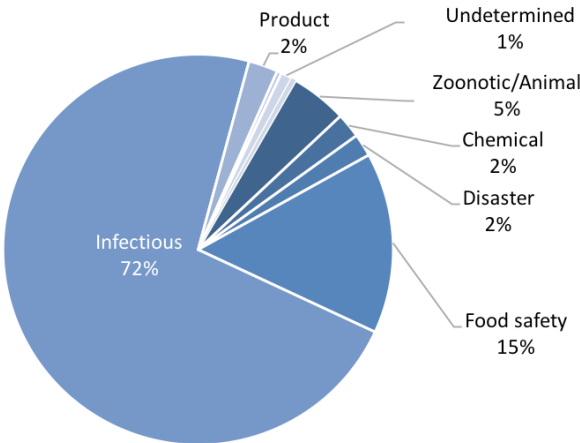
The 935 substantiated events reported between 2001 and 2017 in the **Region of the Americas** were classified as follows: infectious diseases (N=710; 76%), food safety (N=81; 9%), zoonotic/animal (N=73; 8%), product-related (N=28, 3%), undetermined (n=17; 2%), chemical (N=13; 1%), radionuclear (N=7; 1%), and disaster-related (N=6; 1%) (**Figure 12**).

**Figure 12. Distribution of substantiated events (N=935) by hazard type in the WHO Region of the Americas, 2001–2017.**



The 534 substantiated events reported in the *European Region* between 2001 and 2017 were classified as follows: infectious diseases (N=386; 72%), food safety (N=80; 15%), zoonotic/animal (N=25; 5%), product-related (N=13; 2%), chemical (N=11; 2%), disaster-related (N=10; 2%), undetermined (N=5; 1%) and radionuclear (N=2; <1%) (**Figure 13**).

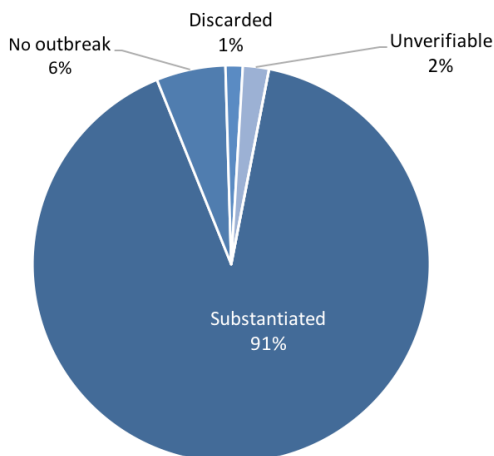
**Figure 13. Distribution of substantiated events (N=534) by hazard type in the WHO European Region, 2001–2017.**



## Results for 2017 Data

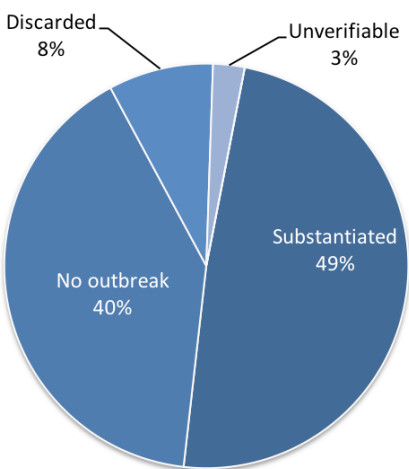
With regard to 2017 data, 142 (35%) of all 411 events recorded globally occurred in the **African Region**. Of that number, 129 (91%) were designated as substantiated, 8 (6%) as no outbreak, 2 (1%) as discarded, and 3 (2%) were considered as unverifiable (**Figure 14**).

**Figure 14. Distribution of events (N=142) in the WHO African Region by final designation, 1 January – 31 December 2017.**



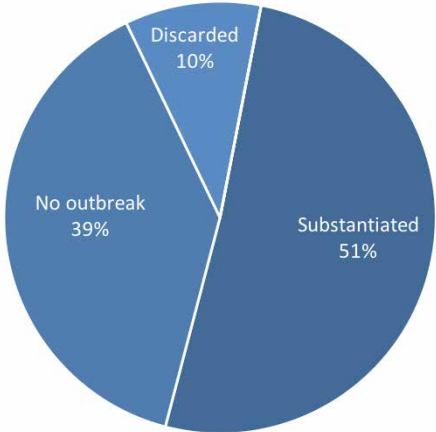
During the same year, 119 (29%) of the 411 events recorded globally occurred in the **Region of the Americas**. Of that number, 58 (49%) were designated as substantiated, 48 (40%) as no outbreak, 10 (8%) as discarded, and 3 (3%) were considered as unverifiable (**Figure 15**). In 2017, the proportion of substantiated events decreased compared with 2016, while the proportion of no-outbreak events increased.

**Figure 15. Distribution of events (N=119) in the WHO Region of the Americas by final designation, 1 January – 31 December 2017.**



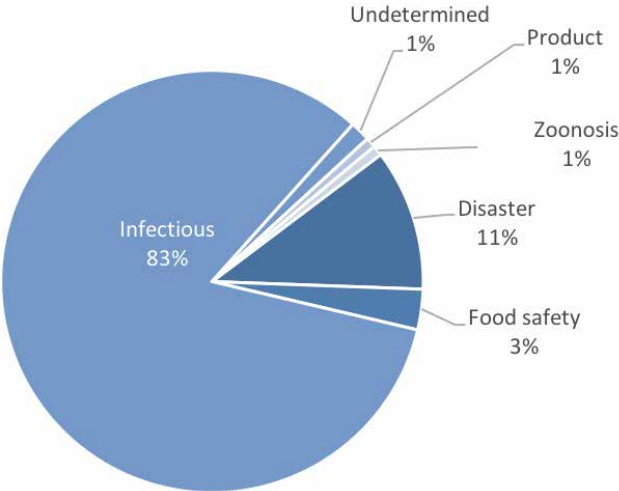
In the same period, 49 (12%) of the 411 events recorded globally occurred in the **European Region**. Of that number, 25 (51%) were designated as substantiated, 19 (39%) as no outbreak, and 5 (10%) as discarded (**Figure 16**). In 2017, the proportion of substantiated events decreased compared with 2016, while the proportion of no-outbreak events increased.

**Figure 16. Distribution of events (N=49) in the WHO European Region by final designation, 1 January – 31 December 2017.**



In the WHO **African Region**, 129 substantiated events were registered in 34 State Parties in 2017. Of that number, 107 (83%) were due to infectious diseases, 14 (11%) were disaster-related, 4 (3%) were food safety-related, 2 (2%) were undetermined, 1 (1%) was product related, and 1 (1%) was zoonosis-related (**Figure 17**).

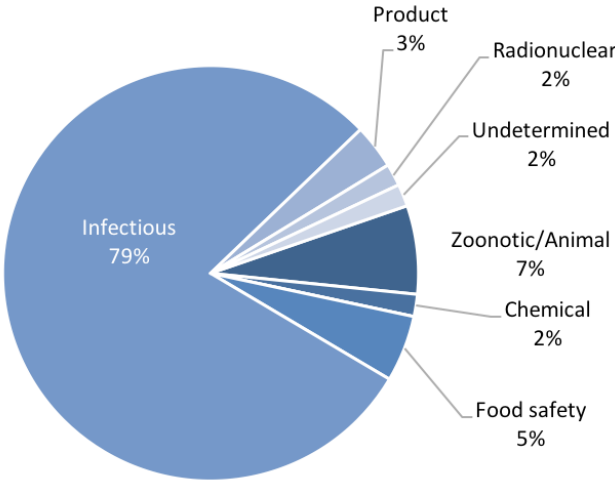
**Figure 17. Distribution of substantiated events (N=129) by hazard in the WHO African Region, 1 January – 31 December 2017.**





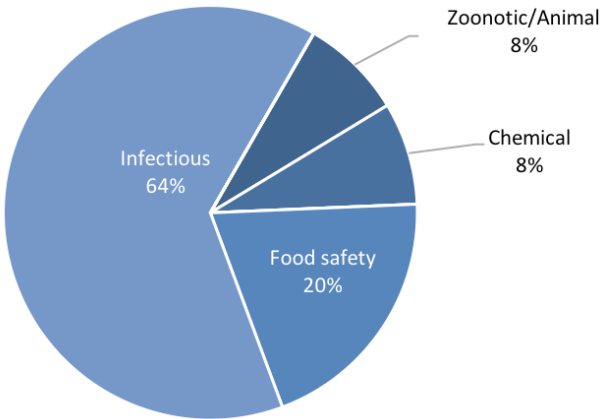
In the WHO **Region of the Americas**, 58 substantiated events were registered in 22 State Parties and 2 territories in 2017. Of that number, 46 (79%) were due to infectious diseases, 4 (7%) were zoonotic/animal disease-related, 3 (5%) were food safety-related, 2 (3%) were product-related, 1 (2%) was chemical-related, 1 (2%) was radionuclear, and 1 (2%) was undetermined (**Figure 18**).

**Figure 18. Distribution of substantiated events (N=58) by hazard in the WHO Region of Americas, 1 January – 31 December 2017.**



In the WHO **European Region**, a total of 25 events were classified as substantiated and occurred in 14 Member States; 16 (64%) were due to infectious diseases, 5 (20%) were related to food safety, 2 (8%) were chemical-related, and 2 (8%) were related to zoonotic/animal diseases (**Figure 19**).

**Figure 19. Distribution of substantiated events (N=25) by hazard type in the WHO European Region, 1 January – 31 December 2017.**



In the three WHO Regions, the proportion of infectious diseases as the hazard for substantiated events decreased compared to 2016 as additional chemical, product-related, and zoonotic/animal disease hazards were detected and monitored.

# INFORMATION DISSEMINATION

Information on public health events of international concern has been disseminated to State Parties under the provisions of Article 11 of the IHR, in order to prepare for and prevent the occurrence of similar events.

Examples of events registered in the WHO **African Region** during 2017 include, in no particular order: anthrax, cholera outbreaks in 10 Member States in the region; Crimean-Congo haemorrhagic fever in Mauritania, Namibia, Senegal, and Uganda; Ebola virus disease outbreak in the Democratic Republic of the Congo; a plague outbreak in Madagascar; a number of disaster incidents including flooding and the effects of hunger; Marburg virus disease in Kenya and Uganda; and Rift Valley fever outbreaks in Mali and Uganda.

EIS postings, DON publications, situation reports, and respective WHO Regional Office webpages were utilized to alert and inform the international community about new, ongoing, and updated public health events. In 2017, there were a total of 98 DONs published and 63 EIS postings of new events (**Figure 20**). Of the 63 EIS postings, 31 (49%) were related to events in the African Region. Furthermore, there were 30 DON publications in 2017 on events which 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 2017, including: 28 Ebola virus disease reports in the Democratic Republic of the Congo;<sup>11</sup> 14 situation reports on the plague outbreak in Madagascar;<sup>12</sup> 46 situation reports and health cluster bulletins on the cholera outbreak in South Sudan;<sup>13</sup> and five situation reports on the health situation including cholera in the Democratic Republic of Congo. Additionally, a weekly bulletin on outbreaks and other emergencies was launched in March 2017, providing updates on new and ongoing events in the region. In 2017, 43 editions of the bulletin were published containing 245 articles.<sup>14</sup>

During 2017, in the WHO Region of the Americas, some of the events recorded include, in no particular order: Zika virus disease and its complications in 7 new countries/territories; yellow fever in Brazil, French Guiana, Peru and Suriname; cholera in the island of Hispaniola; increase of malaria in five countries; and the measles outbreak in Venezuela.

In 2017, the WHO **Region of the Americas** shared information concerning new, ongoing and updated acute public health events through several mechanisms. Out of the 63 new events posted in the EIS, 9 (14%) occurred or were related to the Americas, which is a significant decrease from the previous year 2016, when 53% (62/117) new events were from the Region of the Americas mainly due to the emergence of Zika. Eleven DON postings were on events occurring in or related directly to the Americas, and 20 reports of events in the Americas were shared directly with NFPs by email. Furthermore, 43 Epidemiological Alerts and Updates were disseminated via the regional website, of which 8 were related to Zika virus and 21 were updates on yellow fever.<sup>15</sup>

During 2017, Epidemiological Alerts and Updates related to the Region of the Americas were cited in peer review publications a total of 132 times, representing a ratio of 3.4 Alerts or Updates per peer review publication; an increase from 1.7 in 2015 but a decrease compared to 2016 when the ratio was 4.2.<sup>16</sup> During 2017 reports received from State Parties continued to contribute to the literature on international public health.

11 <https://www.afro.who.int/health-topics/ebola-virus-disease>

12 <https://afro.who.int/health-topics/plague/plague-outbreak-situation-reports>

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

14 <https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates>

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

16 The number was obtained through a systematic key word search carried out using: EBSCO, Google Scholar, Scopus, and Web of Science

In 2017, the NFPs in the Region of the Americas utilized IHR channels of communication to exchange information on 141 events of potential public health importance consistent with Articles 30 and 44 of the IHR. Of the 141 public health information exchanges between NFPs, 51% (73) were communications with NFPs in the Americas Region, 49% (68) were communications directed to NFPs in other Regions, with the majority 47% (32) being directed to NFPs in the WHO European Region.

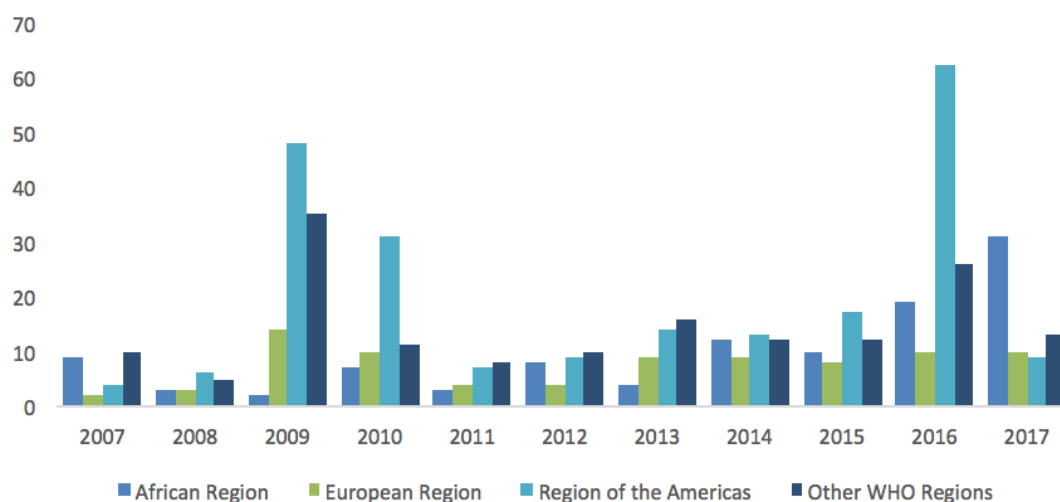
Ensuring that State Parties have fully functional means of communication, pursuant to Article 4 of the IHR, is integral to the exchange of event information with NFPs. Accordingly, in 2017, the WHO IHR Contact Point for the Region of the Americas carried out two communication tests with the 35 NFPs of the Americas, testing the official contact information provided for 24/7 communication with WHO and other NFPs. Further information and results are provided in Annex 5.

Examples of events recorded in the WHO **European Region** during 2017 include, in no particular order: Chikungunya outbreak in Italy and France; botulism cases and clusters in Ukraine; imported malaria in four State Parties; imported Middle East respiratory syndrome coronavirus (MERS-CoV) in Spain; legionellosis in three State Parties (excluding travel-associated cases of legionellosis, up through the European Legionnaires' Disease Surveillance Network (ELDSNet); imported cholera in three State Parties, including multiple cases in Kazakhstan; human anthrax in two State Parties; drug-resistant tuberculosis in Portugal; variant avian influenza infections in two State Parties; industrial exposure to wild poliovirus in the Netherlands; cluster of typhoid fever in multiple countries linked to a mass gathering in Italy; radionuclear events in Russia and Belgium; and chemical poisonings in two State Parties. Events occurring/affecting multiple countries such as measles, West Nile fever, or Shiga toxin-producing *Escherichia coli* (STEC), were also recorded in 2017.

In 2017, 10 of the 63 (16%) new events posted in the EIS occurred in the European Region. In the same year, there were five DON publications on events which occurred in or were related to the European Region.

While there were 63 new events for which information was posted in the EIS in 2017 for all three WHO Regions included in this report, there were an additional 81 updated event postings in 2017 in the EIS (67 for the Americas, 8 for Europe, 1 for Africa). A comparative review of the number of new events published in the WHO Event Information Site for National IHR Focal Points by year and by WHO Region since 2007 is presented in **Figure 20**.

**Figure 20. Number of events published in the Event Information Site for National IHR Focal Points, by year and WHO Region, 2007–2017, N=569**



# DISCUSSION AND CONCLUSION

This report summarizes events recorded in the EMS from 2001 to 2017 for three WHO Regions (Africa, the Americas, and Europe) with a focus on 2017 data. During the entire period (2001 to 2017), between 47% and 89% of the total annual events recorded globally in the EMS occurred in these three Regions. In 2016, events in these three regions made up 86% (375 of 427) of the total number of events globally, while in 2017 this percentage dropped to 75% (310 of 411), which might be explained by Zika emergence in the Region of the Americas during 2016.

As the EMS entry procedures vary according to WHO Regions, these figures are not exhaustive across all Regions and tend to underestimate the overall number of signal and events detected, verified, and assessed by WHO.

Following the implementation of IHR from 2007 to 2014, the proportion of public health events in which the initial source of information were NFPs and national governments increased in the WHO Regions for the Americas and Europe. However, since 2015 and 2016, a substantial decrease has been observed in the proportion of NFPs as the initial source of information for public health events with potential international impact in the Region of the Americas. Similar downwards trends are observed for the Regions of Africa and Europe from 2014 to 2017. 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.

The reasons contributing to decreasing NFP participation as the initial source of information for substantiated events needs to be investigated in both the African and Americas Regions. For example, improved timeliness of WHO event-based surveillance systems could have led to earlier identification of a signal of an event prior to reporting of the event by an NFP. Potential hypotheses such as these will need to be further explored in order to strengthen NFP participation, as this is essential for timely event detection and assessment, and can be strengthened through successful implementation of the regional integrated disease surveillance and response strategy under which IHR is implemented. As a consequence, the first information on substantiated events in the three Regions during this timeframe has been detected mainly through epidemic intelligence activities through event-based surveillance (EBS) or indicator-based surveillance (IBS) carried out by WHO, underlying the importance of this key function.

During 2017, 91% and 49% of assessed events were classified as substantiated in the African and Americas Regions, respectively. In the European WHO Region, 51% of assessed events were classified as substantiated in 2017, which represents a large decrease from 91% of events assessed as substantiated in 2016. 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)<sup>17</sup>, was low in the Americas (38%) and not systematically recorded in the African Region, while in the European Region the response rate was 75%. For most events, NFPs take longer than the IHR-mandated 24 hours to respond to event verification requests. Delays in response is not related to a particular type of hazard and is not consistently observed in a particular State Party. Timely information-sharing is crucial for the international community to prepare for, respond to, and prevent further spread of public health threats.

Information on new, ongoing, and updated events was communicated to the international community, and additional advice was provided to State Parties through a large number of public health event reports shared with NFPs in 2017, mostly related to infectious diseases. In 2017, events in the African Region, the Region of the Americas, and the European Region informed 50 out of 63 (79%) EIS postings of new events, 46 of 98 (47%) DON publications, and

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<sup>17</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."

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 64th 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 has been high. Consequently, there remains a need for further feedback from Member States regarding the use of the information received from the Organization for evidence-driven public health decision-making at the country level.

In 2017, significant public health emergencies, including those of international concern, occurred in these Regions, such as large yellow fever outbreaks, continuation of Zika virus disease outbreaks, viral haemorrhagic fever outbreaks including Ebola virus, plague, sequelae of civil conflict, and natural disasters. Furthermore, many public health events of imported origin occurred in the European Region (e.g., malaria, cholera, MERS-CoV).

Epidemic intelligence activities carried out at all three levels of WHO and in States Parties were critical to early event detection to ensure a rapid and effective response while avoiding unnecessary interference with international travel and trade. In an inter-connected world, timely sharing of reliable information guarantees better decision-making in health. However, without the full commitment and contribution of State Parties to all aspects of the IHR implementation, particularly those related to detection, verification, assessment, and reporting of events, global 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:

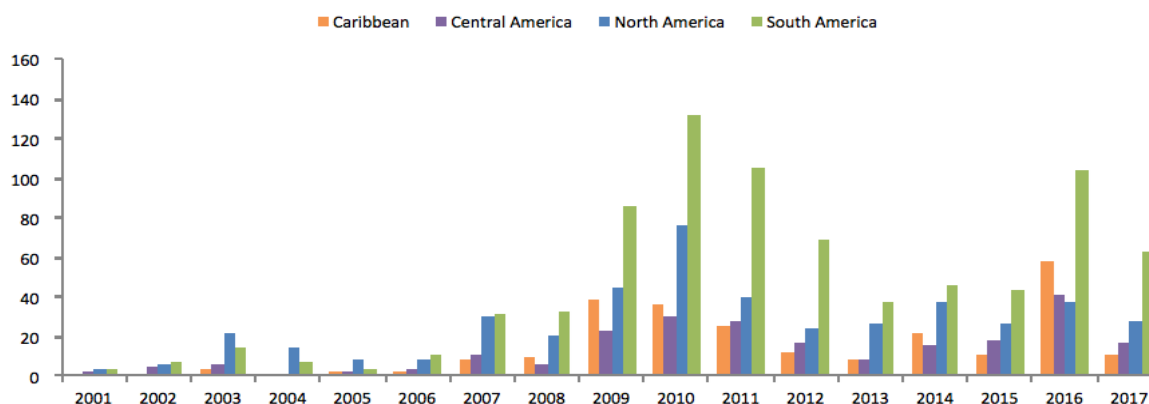
Antigua and Barbuda, Argentina, the Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay, 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 sub-region and year, 2001–2017, N=1,732**



\**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

\**Central America*: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama

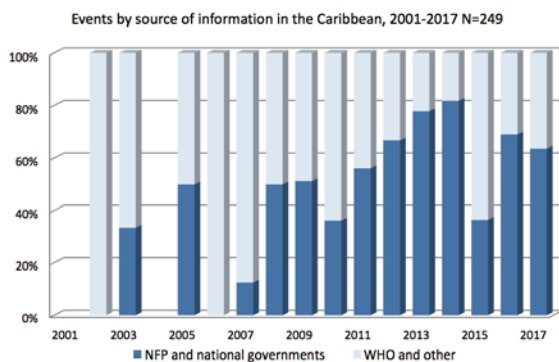
\**North America*: Canada, Mexico and the United States of America

\**South America*: Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname and Venezuela

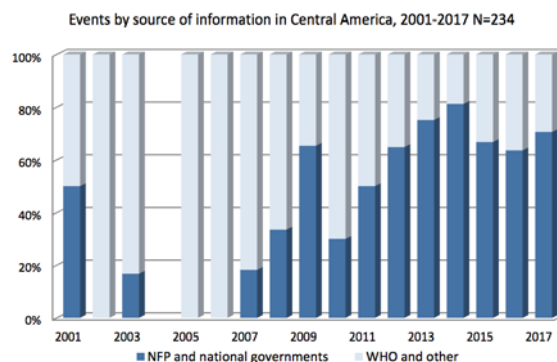


### Annex 3. Distribution of events in the EMS by year and source of information, per sub-region of the Americas<sup>18</sup>

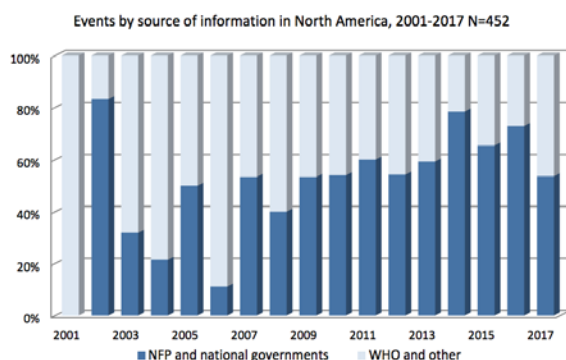
**Figure 1. Distribution of events in the EMS by source of information and year in the Caribbean, 2001–2017, N=249**



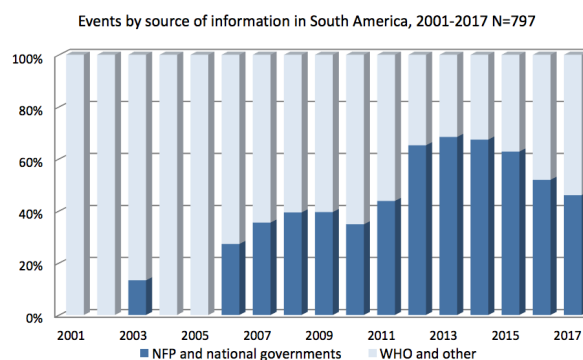
**Figure 2. Distribution of events in the EMS by source of information and year in Central America, 2001–2017, N=234**



**Figure 3. Distribution of events in the EMS by source of information and year in North America, 2001–2017, N=452**



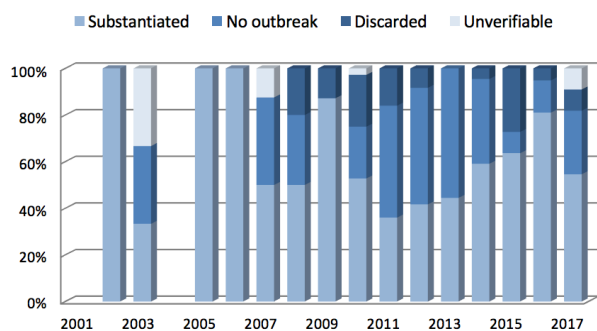
**Figure 4. Distribution of events in the EMS by source of information and year in South America, 2001–2017, N=797**



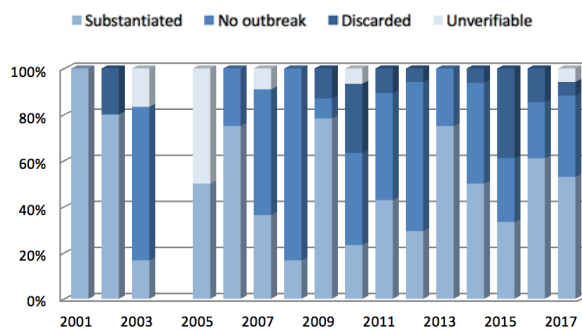
<sup>18</sup> Annex 2 provides a list of the countries and territories included in the data of each sub-region

## Annex 4. Distribution of events in the EMS by year and final designation, per sub-region of the Americas<sup>19</sup>

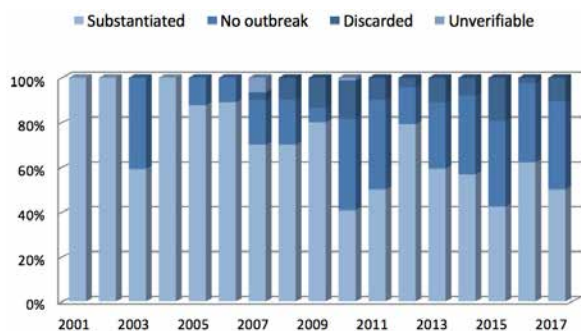
**Figure 1.** Distribution of events in the EMS by final designation and year in the Caribbean, 2001–2017, N=249



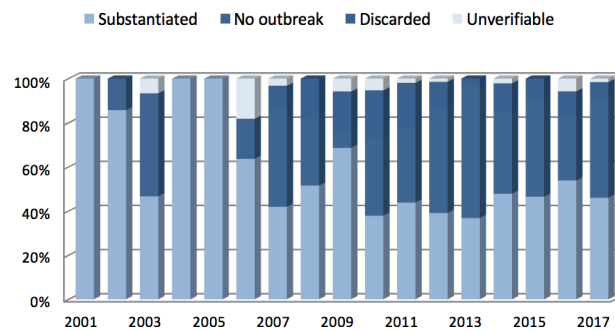
**Figure 2.** Distribution of events in the EMS by final designation and year in Central America, 2001–2017, N=234



**Figure 3.** Distribution of events in the EMS by final designation and year in North America, 2001–2017, N=452



**Figure 4.** Distribution of events in the EMS by final designation and year in South America, 2001–2017, N=797



<sup>19</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 2017 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 2017 (bi-annual tests have been conducted since 2012).

### Comparison of email and phone communication test results in the Region of the Americas, 2007–2017

