

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

## 2018 Report

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July 2020

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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 States Parties committed to detect, verify, assess and report events that may pose a threat to global health security. Through the IHR channels, WHO and States 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 aims to enable rapid implementation of response measures for those at risk.

This report describes public health events detected, assessed, and reported from 2001 to 2018, with a primary focus on the year 2018, in three WHO Regions: Africa, the Americas, and Europe. The data on public health events that occurred in States Parties from 2001 to 2018 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 2018, a total of 6,360 events were recorded in the WHO EMS, of which 484 were recorded in 2018 alone. Of these 484 events in 2018, 341 (70%) were substantiated following the official WHO verification process. Substantiated events were distributed across Regions as follows: 114 (33%) in the WHO African Region, 76 (22%) in the WHO Region of the Americas, 38 (11%) in the WHO European Region, and 113 (33%) in other WHO Regions (Eastern Mediterranean, South-East Asia, and the Western Pacific). While most of these events were of infectious origin (e.g., cholera, measles, malaria, yellow fever, and dengue fever), other events such as those related to food safety, radiological or nuclear hazards, sequelae of civil conflicts, and natural disasters, have also contributed to the burden of international public health events.

During 2018, the proportion of responses to verification requests received within 24 hours was 39% in the WHO Region of the Americas and 67% in the WHO European Region. This highlights the need to understand and address the reasons to improve the timeliness in the official IHR verification process.

Effective surveillance systems and timely communication and information sharing through the global network of National IHR Focal Points (NFPs) of States Parties is critical to manage the impact posed by complex and severe events that occur. Overall, the NFP was the initial source of information for a significant proportion of substantiated events reported between 2001 and 2018, in the WHO Regions of the Americas and Europe. In the WHO African Region, NFP contribution could not be accurately estimated since the initial source of information came mainly from the WHO Country Office that acts as the liaison between the Regional Office and the Member States.

This report highlights the importance of continuously strengthening WHO engagement and collaboration with States Parties in order to achieve their full commitment and contribution in all aspects of the IHR implementation, particularly those related to detection, verification, risk assessment, and reporting of events. This will require dedicated human resources, close collaboration with partners and other stakeholders, transparent information-sharing among Member States, and sustained funding.

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## Introduction

The International Health Regulations (2005) (IHR) is an international legal framework that facilitates global 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 States 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 States Parties, which include figures on event detection, initial source of information, designation, and type of hazard. In 2016, the WHO Regional Office for Africa began participating in the preparation of the joint report. This is the third edition of the tri-partite annual report.

In the spirit of WHO transparency and accountability, these joint reports have been disseminated through the secure Event Information Site (EIS)<sup>1</sup> for National IHR Focal Points (NFPs)<sup>2</sup> and the WHO Regional Offices' websites<sup>3,4</sup> since 2014. *The complete list of Member States in each of these three WHO Regions is available in Annex 1.*

The aim of this report is to provide a summary of acute public health events recorded between 2001 and 2018, with a particular focus on the events that occurred in the WHO Regions of Africa, the Americas, and Europe, during 2018.

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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> WHO Regional Office for the Americas: [www.paho.org](http://www.paho.org);

<sup>4</sup> WHO Regional Office for Africa: <https://www.afro.who.int/publications/acute-public-health-events-assessed-who-regional-offices-africa-americas-and-europe-0>

## Methodology

Events of potential international public health concern are mainly detected through either epidemic intelligence activities conducted by dedicated teams of WHO public health professionals or through direct reporting by States Parties to WHO using NFP channels or other governmental channels (e.g., the Ministry of Health and national government agencies). Information for each detected, verified, and assessed event presented in this report was documented and recorded in the WHO Event Management System (EMS)<sup>5,6</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>7</sup> an unofficial report for which a request for verification is sent to a State Party;<sup>8</sup> and events for which WHO assistance is requested.

After an event is detected or notified to WHO, an initial risk assessment is conducted in close collaboration with subject matter specialists across the three levels of the Organization. Assessed events that may pose a risk to international public health are communicated to States Parties and the international community through different channels, namely: the EIS, the WHO Disease Outbreak News (DONs), websites, external situation reports, and bulletins of WHO Headquarters and Regional Offices, and disease-specific networks.

The data and information used in this report were extracted from the EMS on 18 September 2019. Events were included based on the date of creation within the system between 1 January 2001 to 31 December 2018. The results presented in this report are structured as follows: event detection, event designation, initial source of event information, type of hazard, and information dissemination. Given the routine update and cleaning of EMS data, previous and future reports may show minor differences in some annual indicators.

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<sup>5</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>6</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>7</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>8</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."

## Definitions

- *Epidemic intelligence*, the systematic collection, analysis and communication of any information to detect, verify, assess and investigate events and health risks with an early warning objective.
- *Event*, the IHR define an event as a manifestation of disease or an occurrence that creates a potential for disease (this can include events that are infectious, zoonotic, food safety, chemical, radiological or nuclear in origin and whether transmitted by persons, vectors, animals, goods/food or through the environment.).

During the riskassessment 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.

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## Results

### Event detection

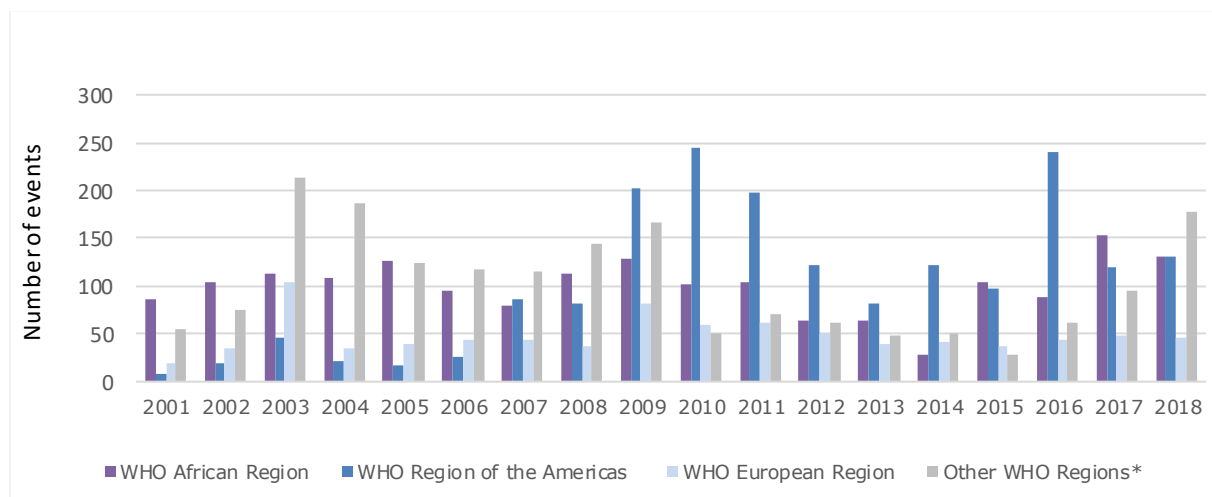
From 2001 to 2018, a total of 6,360 public health events were recorded globally in the EMS, of which 4,518 (71%) occurred in the WHO Regions of Africa, the Americas, and Europe (Figure 1), similar to the proportion observed in 2017. Since 2001, the events recorded in the EMS for these three WHO Regions 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 an overall decreasing trend in the number of events recorded globally, including those that occurred in the WHO Regions of Africa, the Americas, and Europe. Subsequently, an increase in the number of recorded events was observed globally and specifically in the WHO Regions of Africa, the Americas, and Europe during 2016, 2017, and 2018, respectively.

Globally, in 2018, a total of 484 public health events were detected, recorded in the EMS, and monitored by WHO, of which 130 (27%) occurred in 35 Member States in the **WHO African Region**, 130 (27%) in 24 Member States and 3 territories in the **WHO Region of the Americas**, and 47 events (10%) in 21 Member States in the **WHO European Region** (see Annex 1 for a list of Member States in each WHO Region). During this year, significant public health emergencies occurred across these three regions, including infectious diseases such as poliomyelitis—which has continued to be a declared public health emergency of international concern (PHEIC)—and two outbreaks of Ebola virus disease (EVD), along with sequelae of civil conflict and natural disasters. Specifically within these three Regions, measles, cholera, dengue, and yellow fever accounted for 41% of substantiated events in 2018 with available disease information.

In 2018 compared to 2017, there was a 15% decrease in the number of events recorded in the **WHO African Region**, an 8% increase in the number of events recorded in the **WHO Region of the Americas**, and a 4% decrease in the number of events recorded in the **WHO European Region**. The increase in the number of events recorded in the WHO Region of the Americas is in part due to an increase in the number of dengue and measles events. Compared to 2017 on a sub-regional level in the WHO Region of the Americas, the most significant increases in the number of events were observed in Central and South America (25% increase each) while the number of events recorded in North America decreased by 39%. *The distribution of events recorded in the EMS for the Americas, by sub-region, is presented in Annex 2.*

**Figure 1.** Number of EMS events (N=6,360) by WHO Region and year, 2001-2018.



\*Other WHO Regions represent the sum of events recorded by the WHO South-East Asia Region,<sup>9</sup> the WHO Eastern Mediterranean Region,<sup>10</sup> and the WHO Western Pacific Region.<sup>11</sup>

## Event designation

This section summarizes the final designation of events recorded in the EMS since 2001, with a particular focus on substantiated events. Between 2001 and 2018, of the 6,360 total events assessed globally in the EMS, 4,170 (66%) were designated as substantiated (Figure 2), 1,083 (17%) as no outbreak, 463 (7%) as discarded, 331 (5%) as unverifiable, 303 (5%) as not designated, and 10 (<1%) as under verification. Of the 4,170 substantiated events between 2001 and 2018, 73% were events recorded in the WHO Regions of Africa, the Americas, and Europe. Of the three WHO Regions under review, the **WHO African Region** accounts for the majority of substantiated events recorded in the EMS between 2001 and 2018 (1,481/4,170; 36%), followed by the **WHO Region of the Americas** (1,010/4,170; 24%), and the **WHO European Region** (572/4,170; 13.7%).

In the last five years (2014 to 2018), the proportion of events which were substantiated ranged from 88% to 96% (median: 91%) for the **WHO African Region**<sup>12</sup>; 45% to 63% (median: 53%) for the **WHO Region of the Americas**; and 51% to 91% (median: 58%) for the **WHO European Region**.

<sup>9</sup> <http://www.searo.who.int/en/>

<sup>10</sup> <http://www.emro.who.int/index.html>

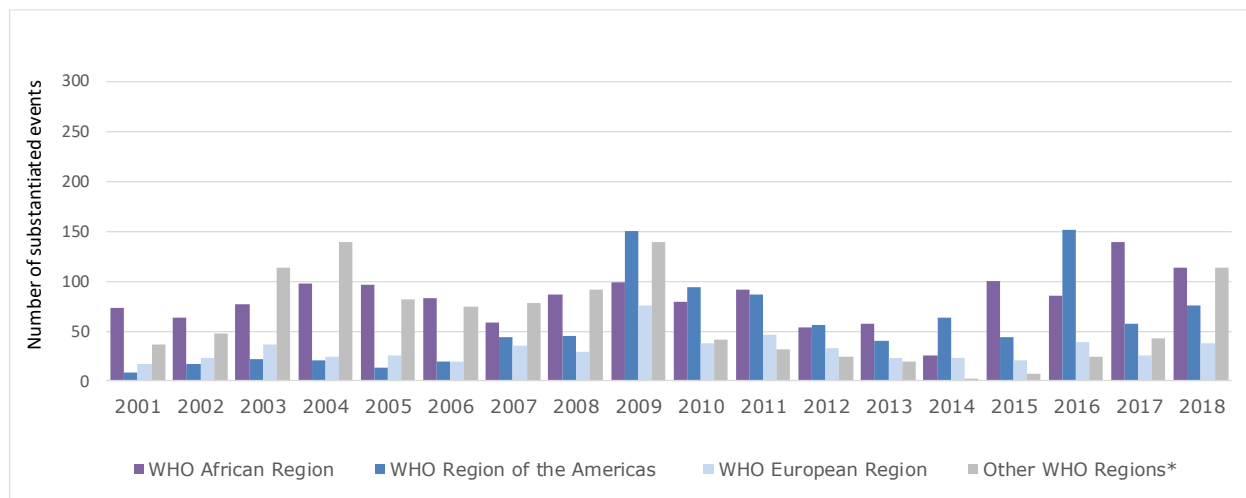
<sup>11</sup> <http://www.wpro.who.int/en/>

<sup>12</sup> Notably, the WHO African Region does not systematically enter requests for verification into the EMS; non-substantiated events are less likely to be recorded, leading to a higher proportion of substantiated events.



In 2018 alone, of the 484 total events assessed globally in the EMS, 341 (70%) were designated as substantiated, 44 (9%) as no outbreak, 27 (6%) as discarded, 9 (2%) as unverifiable, 54 (11%) as not designated, and 9 (2%) as under verification. Of the 341 substantiated events in 2018, 67% were events recorded in the WHO Regions of Africa, the Americas, and Europe.

**Figure 2.** Number of substantiated EMS events (N=4,170) by WHO Region and year, 2001-2018.



\*Other WHO Regions represent the sum of events recorded by the WHO South-East Asia Region,<sup>13</sup> the WHO Eastern Mediterranean Region,<sup>14</sup> and the WHO Western Pacific Region.<sup>15</sup>

Between 2001 and 2018, 1,791 (28%) of the 6,360 events assessed globally in the EMS occurred in the **WHO African Region**. Of these 1,791 events, 1,481 (83%) were designated as substantiated, 131 (7%) as no outbreak, 108 (6%) as unverifiable, 68 (4%) as discarded, 3 (<1%) as not designated (Figure 3). It is important to note that, in this Region, not all requests for verification are entered into the EMS; those that are not true events are less likely to be recorded, leading to a higher proportion of substantiated events among the total recorded events and an underrepresentation of the total number of events detected and monitored in this Region.

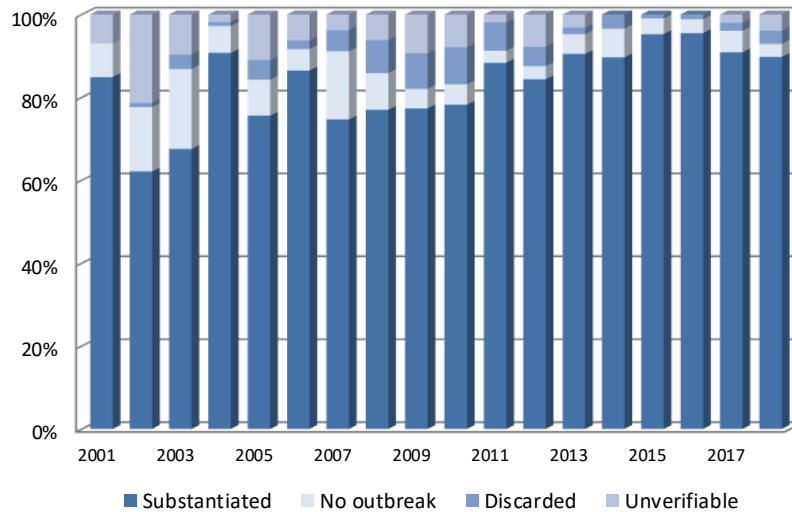
With regards to 2018 data, 130 (27%) of all 484 events assessed globally in the EMS occurred in the WHO African Region. Of those 130 events, 114 (88%) were designated as substantiated, 4 (3%) as no outbreak, 4 (3%) as discarded, 5 (4%) as unverifiable, and 3 (2%) as not designated. In 2018, the proportion of substantiated events and those designated as no outbreak decreased compared to the previous year, while the proportions of events designated as discarded, unverifiable, and not designated, increased.

<sup>13</sup> <http://www.searo.who.int/en/>

<sup>14</sup> <http://www.emro.who.int/index.html>

<sup>15</sup> <http://www.wpro.who.int/en/>

**Figure 3.** Distribution of EMS events (N=1,791) in the WHO African Region by final designation and year, 2001–2018.

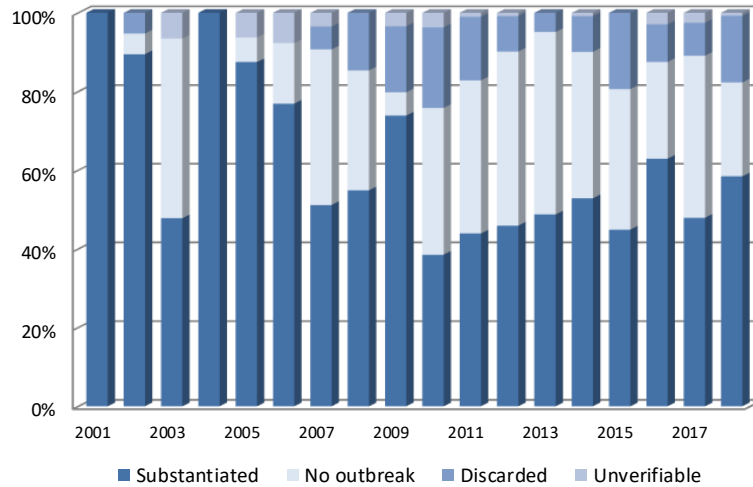


Between 2001 and 2018, 1,861 (29%) of the 6,360 events assessed globally in the EMS occurred in the **WHO Region of the Americas**. Of the 1,861 events, 1,010 (54%) were designated as substantiated, 577 (31%) as no outbreak, 234 (13%) as discarded, and 40 (2%) as unverifiable (Figure 4).

In 2018, 130 (27%) of the 484 events assessed globally in the EMS occurred in the WHO Region of the Americas. Of those 130 events, 76 (58%) were designated as substantiated, 31 (24%) as no outbreak, 22 (17%) as discarded, and one (1%) as unverifiable. In 2018, the proportions of substantiated and discarded events increased compared to the previous year, while the proportions of events designated as no outbreak and unverifiable decreased.

In 2018, the number of substantiated events increased in each sub-region of the Americas except for the Caribbean. *The distribution of events by final designation in the sub-regions of the Americas is presented in Annex 3.*

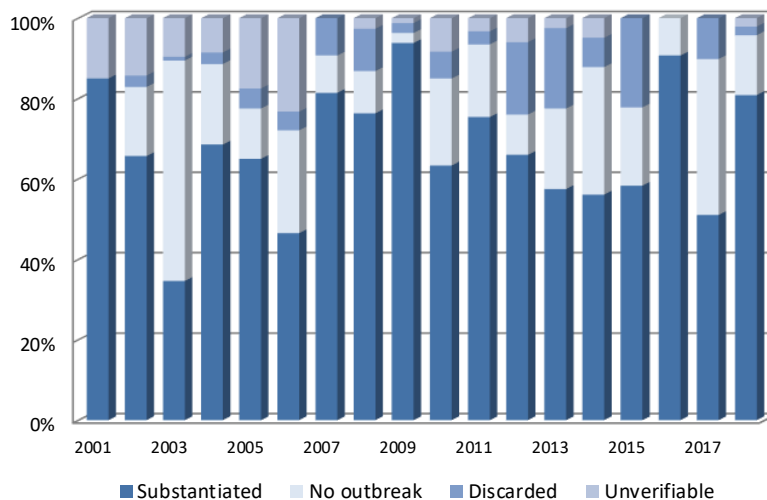
**Figure 4.** Distribution of EMS events (N=1,861) in the WHO Region of the Americas by final designation and year, 2001-2018.



Between 2001 and 2018, 866 (14%) of the 6,360 events assessed globally in the EMS, occurred in the **WHO European Region**. Of these 866 events, 572 (66%) were designated as substantiated, 183 (21%) as no outbreak, 57 (7%) as discarded, and 54 (6%) as unverifiable (Figure 5).

In 2018, 47 (10%) of the 484 events assessed globally in the EMS occurred in the WHO European Region. Of those, 38 (81%) were designated as substantiated, 7 (15%) as no outbreak, one (2%) as discarded, and one (2%) as unverifiable. In 2018, the proportions of substantiated events and unverifiable events increased compared with the previous year, while the proportions of events designated as no outbreak and discarded decreased.

**Figure 5.** Distribution of EMS events (N=866) in the WHO European Region by final designation and year, 2001-2018.



### Initial source of event information

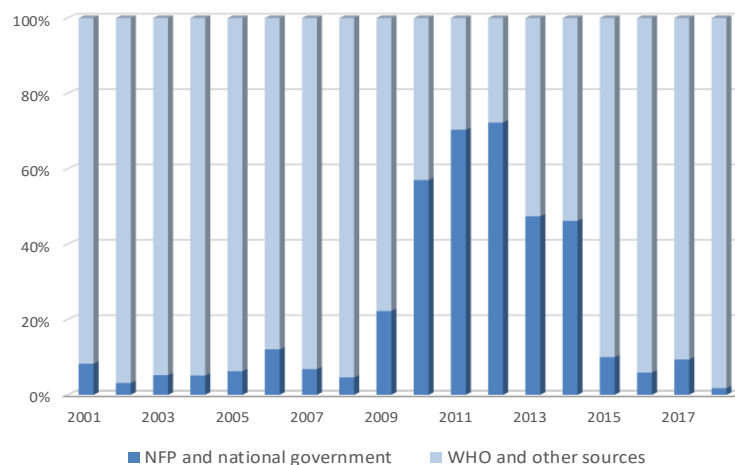
This section summarizes the initial source of information for events designated as substantiated in the EMS since 2001. Certain considerations should be taken into account when interpreting the following data: a) the International Health Regulations (2005) entered into force in 2007, after which time, NFPs were designated by States Parties as a channel of communication with WHO, and b) variations exist in event reporting and recording procedures between each of the WHO Regions that impact the data collected on initial source of event information.

Between 2001 and 2018, in the **WHO African Region**, 1,481 substantiated events were recorded in the EMS. Of these, 1,201 (81%) were either reported by the WHO Country Offices (which, in the WHO African Region, serve as an intermediary between NFPs and the WHO Regional Office) or detected through routine epidemic intelligence activities coordinated by the WHO Regional Office (including indicator and event-based surveillance), while 280 (19%) were listed as directly notified by NFPs and national governments (Figure 6).

In 2018, of the 114 substantiated events recorded in the WHO African Region, 112 (98%)<sup>16</sup> had WHO or other sources listed as the initial source of information, while the remaining 2 events (2%) had the NFPs and national governments listed. Due to the limited availability of data regarding verification requests entered into the EMS for the WHO African Region, we were not able to assess the timeliness of responses to verification requests in this Region.

In the WHO African Region, although an increase was observed in the proportion of records with NFPs and national governments designated as the information source after 2008, this proportion significantly decreased in 2015 and remained low through 2018. However, this trend might reflect changes in event reporting and recording procedures rather than changes in NFP participation.

**Figure 6.** Number of substantiated events (N=1,481) in the WHO African Region, by source of initial information, 2001-2018.



<sup>16</sup> Notably, the WHO African Region does not systematically enter requests for verification into the EMS; non-substantiated events are less likely to be recorded, leading to a higher proportion of substantiated events.

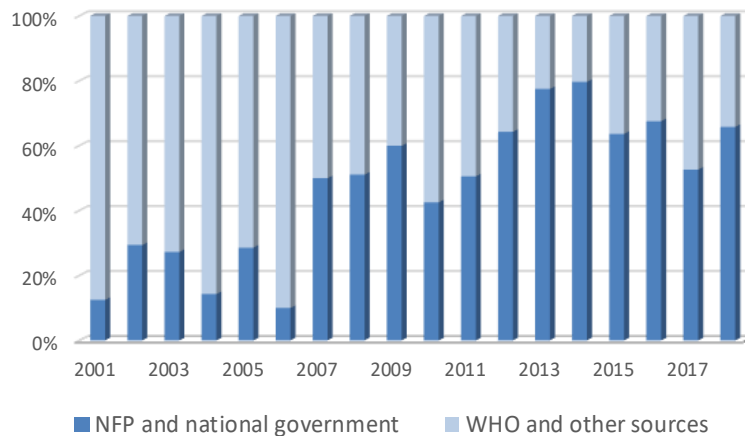
Between 2001 and 2018, in the **WHO Region of the Americas**, 1,010 substantiated events were recorded in the EMS. Of these, 568 (56%) were either reported by NFPs or national governments, while the remaining 442 events (44%) were detected through routine epidemic intelligence (including indicator and event-based surveillance) conducted by the Regional and Country Offices within the Region (Figure 7).

In 2018, in the WHO Region of the Americas, of the 114 substantiated events, 50 (66%) had NFPs and national governments listed as the initial source, while the remaining 26 events (34%) had WHO or other sources listed. During this year, requests for verification were sent to NFPs to verify information and obtain further details for 36 events. Of these, NFP responses were received within less than 24 hours for 14 (39%) events, between 24 and 48 hours for 2 (6%) events, and more than 48 hours for 19 (53%) events; no response was received for one event. In 2018, the overall response rate for verification requests received within 24 hours increased compared to the previous two years (39% in 2018 compared to 34% in 2017 and 28% in 2016) but was less than that in 2015 (52%).

In the WHO Region of the Americas, an increasing trend in NFPs and national governments as the initial source of substantiated events has been observed from 2007 to 2014, after which there was a gradual decrease. In 2018, however, an increase was observed compared to 2017.

Regarding sub-regions in the Americas, the proportion of substantiated events reported by NFPs or national governments increased in 2018 compared to 2017 for all sub-regions except for Central America (*see Annex 4*).

**Figure 7.** Number of substantiated events (N=1,010) in the WHO Region of the Americas, by source of initial information, 2001-2018.

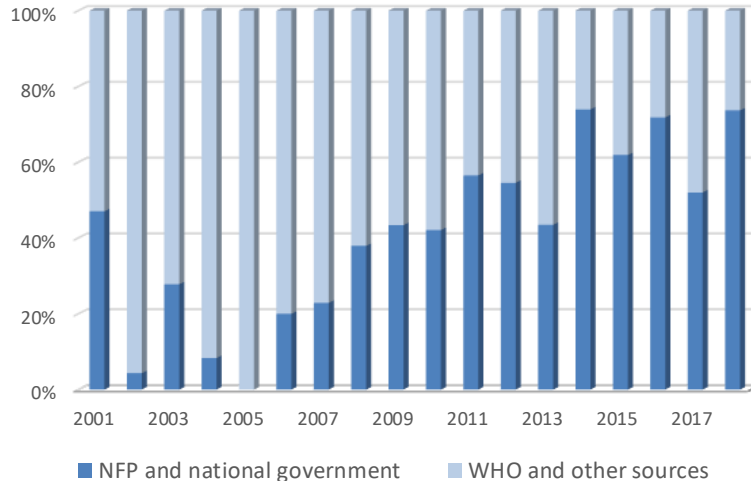


Between 2001 and 2018, in the **WHO European Region**, 572 substantiated events were recorded in the EMS. Of these, 246 (43%) were either reported by NFPs and national governments via direct communication or through the European Commission Early Warning and Response System (EWRS), while the remaining 326 (57%) were detected through routine epidemic intelligence (including indicator and event-based surveillance) conducted by the Regional and Country Office levels within the Region (Figure 8).

In 2018, in the WHO European Region, of the 38 substantiated events, 28 (74%) had NFPs and national governments indicated as the initial source, while the remaining 10 events (26%) had WHO or other sources listed. During 2018, requests for verification were sent to NFPs to verify information and obtain further details for 12 events. Of these, NFP responses were received within less than 24 hours for 8 (67%) events, between 24 and 48 hours for 2 (17%) events, and more than 48 hours for 2 (17%) events. In 2018, the overall response rate for verification requests was 100% compared to 95% in 2017. Data regarding requests for verification response rates were not systematically collected prior to 2017, and therefore, are not shown.

In the WHO European Region, an increasing trend in NFPs and national governments as the initial source of substantiated events has been observed since 2007.

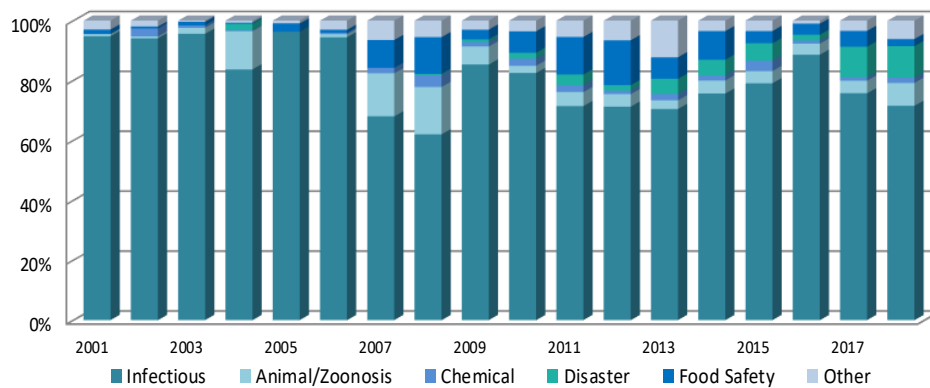
**Figure 8.** Number of substantiated events (N=572) in the WHO European Region, by source of initial information, 2001-2018.



## Hazard type

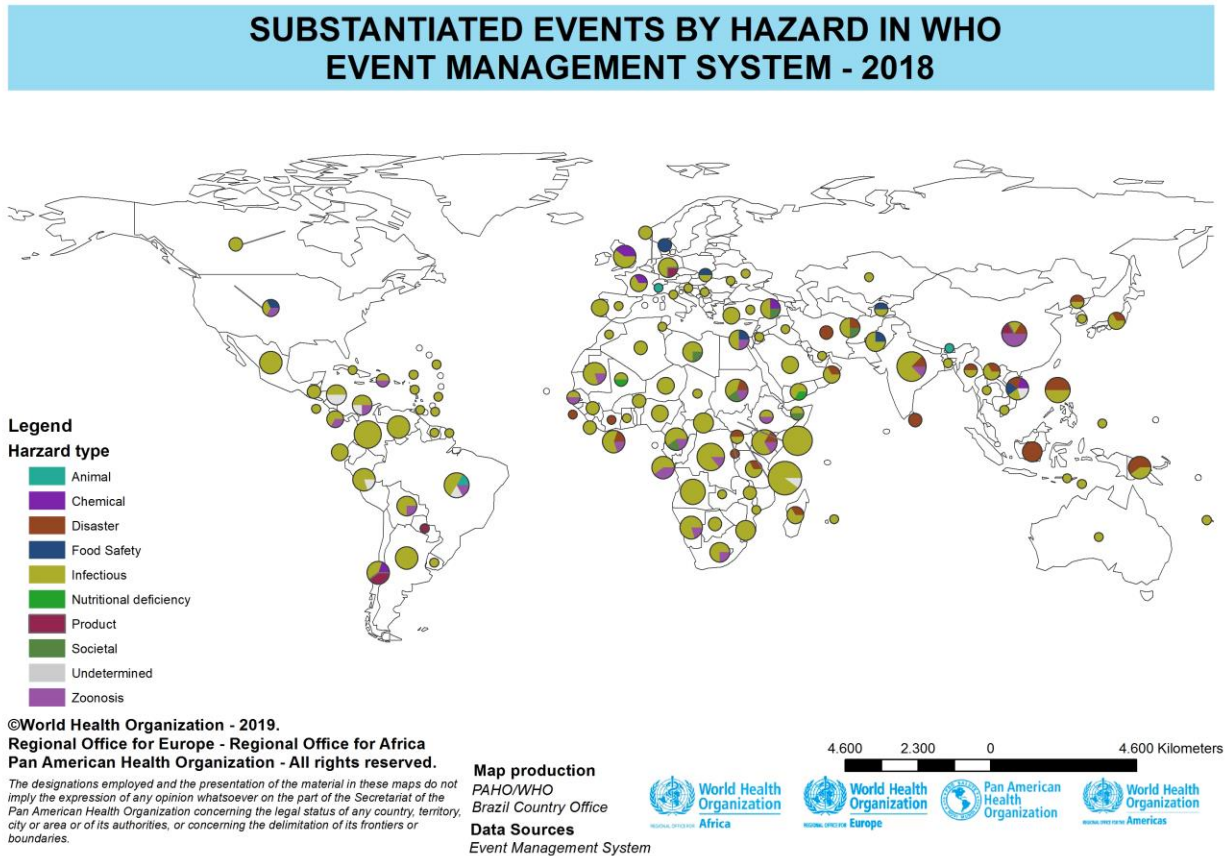
This section summarizes the hazard type for events designated as substantiated in the EMS since 2001. While the IHR (2005) uses an all-hazards approach, infectious diseases have represented the vast majority of hazards among substantiated events reported globally and specifically across the WHO Regions of Africa, the Americas, and Europe, since 2001 (Figure 9). However, since 2017, an increasing proportion of substantiated events have been non-infectious, particularly disaster-related.

**Figure 9.** Number of substantiated events (N=4,170) for all WHO Regions, by hazard type and year, 2001 to 2018.



Map 1 depicts events that were substantiated during 2018 by hazard type for all WHO Regions. The size of each pie chart indicates the volume of recorded events within a country/territory. While some countries had substantiated events due to more than one hazard type, the majority of events overall were of infectious origin.

**Map 1.** Global geographic distribution of substantiated EMS events by hazard type, 2018.



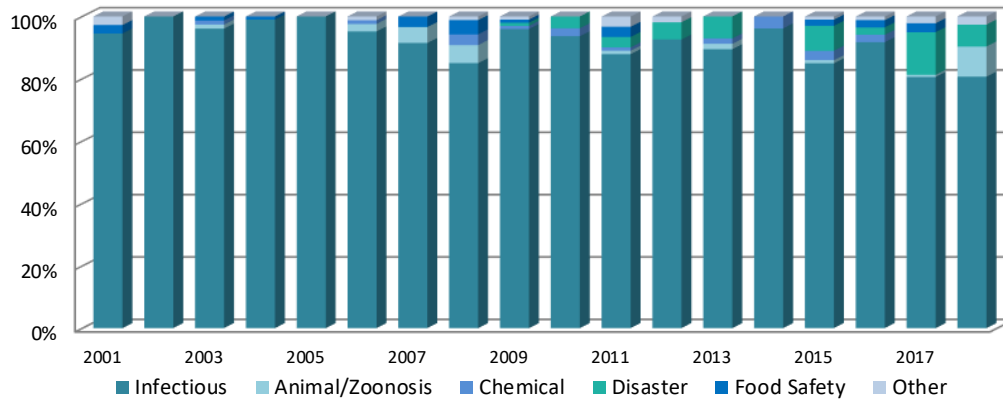
Between 2001 and 2018, the 1,481 substantiated events reported in the **WHO African Region** were classified based on their aetiology as follows: infectious diseases (N=1,349; 91%), disaster (N=51; 3%), animal/zoonosis-related (N=26; 2%), food safety (N=22; 1%), chemical (N=16; 1%) and other causes (N=17; 1%) including undetermined (N=10; 1%), nutritional deficiency (N=4; <1%), product-related (N=2; <1%), and societal (N=1; <1%) (Figure 10).

In 2018, in the WHO African Region, 114 substantiated events were registered in 35 State Parties. Of these, 92 (81%) were due to infectious diseases, 11 (10%) were animal/zoonosis-related, 8 (7%) were disaster-related, and 3 (3%) were due to other causes including undetermined (N=1; 1%), nutritional deficiency (N=1; 1%), and societal (N=1; 1%).

In the WHO African Region, the second most common hazard type among substantiated events during 2001-2018 was disasters, while in 2018 alone, it was animal/zoonotic diseases.



**Figure 10.** Distribution of substantiated events (N=1,481) in the WHO African Region by hazard type and year, 2001–2018.

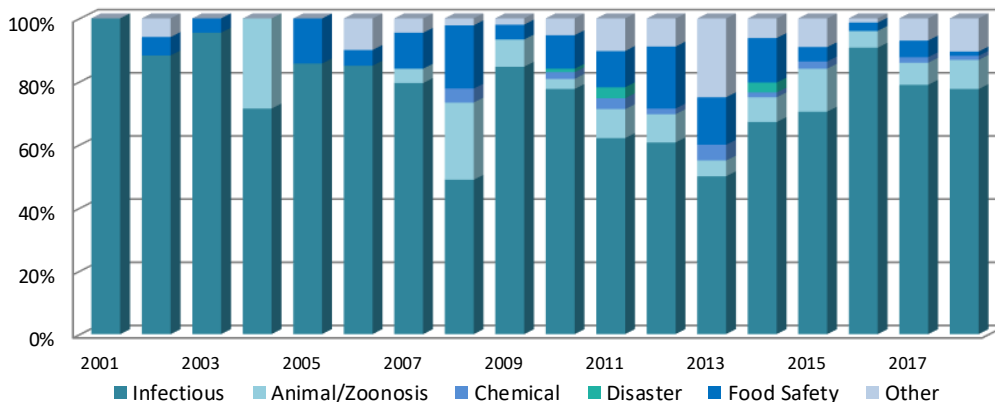


Between 2001 and 2018, the 1,010 substantiated events reported in the **WHO Region of the Americas** were classified as follows: infectious diseases (N=768; 76%), food safety (N=82; 8%), animal/zoonotic (N=74; 7%), chemical (N=14; 1%), disaster (N=6; 1%), and other causes (N=60; 6%) including product-related (N=31, 3%), undetermined (n=22; 2%), and radionuclear (N=7; 1%) (Figure 11).

In 2018, in the WHO Region of the Americas, 76 substantiated events were registered in 24 State Parties and 3 territories. Of these, 59 (78%) were due to infectious diseases, 7 (9%) were animal/zoonosis-related, 1 (1%) was food safety-related, 1 (1%) was chemical-related, and 8 (11%) were due to other causes including undetermined (N=5; 7%) and product-related (N=3; 4%).

In the WHO Region of the Americas, the second most common hazard type among substantiated events during 2001-2018 was food safety, while in 2018 alone, it was other hazard types (primarily undetermined).

**Figure 11.** Distribution of substantiated events (N=1,010) in the WHO Region of the Americas by hazard type and year, 2001–2018.

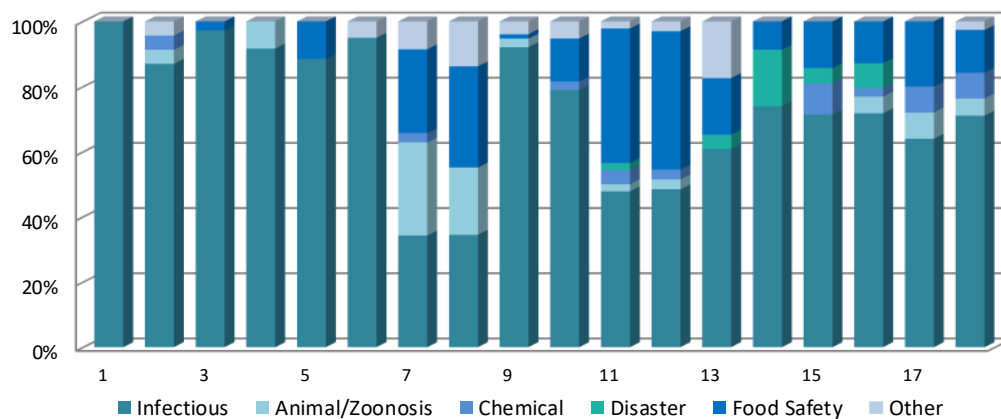


Between 2001 and 2018, the 572 substantiated events reported in the **WHO European Region** were classified as follows: infectious diseases (N=413; 72%), food safety (N=85; 15%), animal/zoonotic (N=29; 5%), chemical (N=14; 2%), disaster-related (N=10; 2%) and other causes (N=21; 4%) including product-related (N=14; 2%), undetermined (N=5; 1%), and radionuclear (N=2; <1%) (Figure 12).

In 2018 in the WHO European Region, 38 substantiated events were registered in 21 Member States. Of these, 27 (71%) were due to infectious diseases, 5 (13%) were related to food safety, 3 (8%) were chemical-related, 2 (5%) were animal/zoonosis-related, and 1 (3%) was due other causes (product-related).

In the WHO European Region, the second most common hazard type among substantiated events, both during 2001-2018 and during 2018 alone, was food safety.

**Figure 12.** Distribution of substantiated events (N=572) in the WHO European Region by hazard type and year, 2001–2018.



Among the 178 substantiated events of infectious origin reported within these three Regions in 2018, measles, cholera, dengue, and yellow fever were the most prevalent, accounting for 43% of these events. Within these Regions, the two most common infectious diseases were cholera and measles in the **WHO African Region**; measles and dengue fever in the **WHO Region of the Americas**; and measles and West Nile fever in the **WHO European Region**.

## Information Dissemination

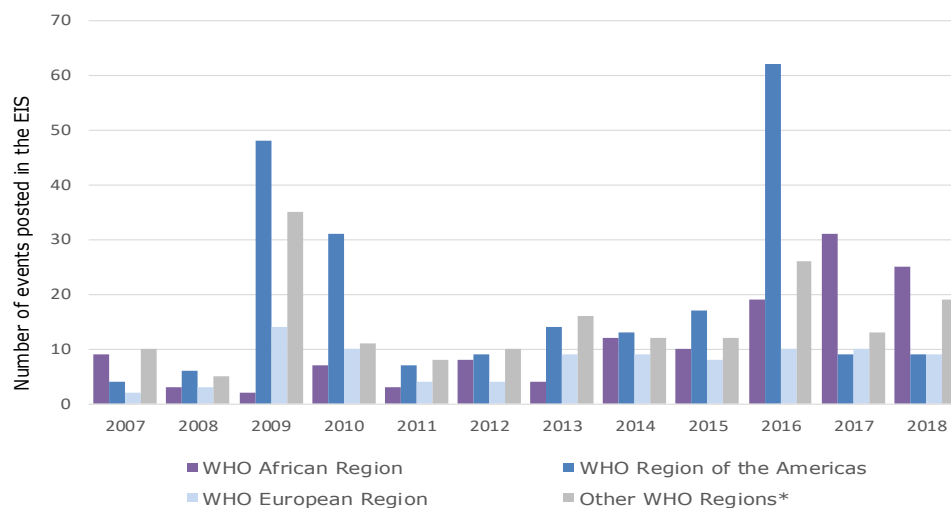
Under the provisions of the IHR, WHO is mandated to share independent and authoritative information on a potential PHEIC with States Parties, stakeholders, and the general public, in order to prepare for and prevent the occurrence of similar events. In order to fulfill this mandate to alert and inform the international community about new, ongoing, and updated public health events, WHO uses various sources of communication channels including EIS postings, Disease Outbreak News

(DON) publications, situation reports, health cluster bulletins, Twitter updates, Facebook updates, and respective WHO Regional Office bulletins and webpages.

In 2018, there were a total of 91 DON publications and 62 EIS postings pertaining to new events for all WHO Regions. During this period, 70 (77%) of the 91 DON publications and 43 (69%) of the 62 EIS postings pertained to events occurring in or related to the three WHO Regions included in this report.

The distribution of the number of new events published in the EIS by year and by WHO Region since 2007 (N=631) is presented in Figure 13.

**Figure 13.** Number of events (N=631) published in the WHO Event Information Site for National IHR Focal Points (EIS), by WHO Region and year, 2007–2018.



The **WHO African Region** contributed to the highest proportion of EIS postings (n=25, 40%) and DON publications (n=61, 67%) in 2018. The number of DON publications related to events occurring in the WHO African Region more than doubled compared to 2017. The majority of the 61 DONs published in 2018 were related to the two EVD outbreaks in the Democratic Republic of the Congo. In addition to EIS and DON postings, other information products related to events occurring in this Region were disseminated to the international community, including 38 external situation reports on the EVD outbreaks in the Democratic Republic of the Congo<sup>17</sup> (17 for the outbreak in Equateur Province and 21 for the outbreak in North-Kivu, South-Kivu, and Ituri provinces) and 52 editions (including 265 articles) of a regional weekly bulletin on outbreaks and other emergencies, which was launched in March 2017<sup>18</sup>.

<sup>17</sup> <https://www.afro.who.int/health-topics/ebola-virus-disease>

<sup>18</sup> <https://www.afro.who.int/health-topics/diseases-outbreaks/outbreaks-and-other-emergencies-updates>

The **WHO Region of the Americas** contributed to 9 (15%) EIS postings and 5 (5%) DON publications in 2018; these numbers were similar in 2017. Additionally, 17 reports on events occurring in the Region were shared directly with NFPs by email and 33 Epidemiological Alerts and Updates were disseminated via the regional website, of which 11 were related to measles, 8 were related to diphtheria, and 4 were related to yellow fever<sup>19</sup>.

The **WHO European Region** contributed to 9 (15%) EIS postings and 4 (4%) DON publications in 2018. These numbers were similar to those reported in 2017.

## Discussion and conclusion

The results from this report indicate that the WHO Regions of Africa, the Americas, and Europe, remain prone to infectious and non-infectious disease hazards. It is therefore critical for the WHO Regional Offices to intensify their support to Member States in improving national capacities to rapidly detect and respond to multiple public health events.

Retrospective analyses from the past 17 years show that the WHO Regions of Africa, the Americas, and Europe, have historically accounted for the majority of events globally recorded in the EMS annually. In 2018, these three WHO Regions accounted for almost three-quarters (71%) of events recorded in EMS. While there may indeed be more events being detected in these WHO Regions, there are likely other contributing factors to explain this high proportion such as the protocols for recording such events in the EMS that vary between WHO Regions. The use of the EMS online platform has been instrumental for the efficient management of data related to public health events that may pose a threat to global health security. The platform allows the Organization to rapidly communicate information on public health events and share informed risk assessments in a consistent, timely, and transparent manner across the three levels of the Organization. However, this report has identified differences in EMS data entry protocols between the WHO Regions, thereby indicating a need for the standardization of these protocols.

Overall, two-thirds of the 6,360 events detected and recorded globally in EMS were substantiated following a thorough WHO assessment and verification by NFPs. In 2018, the WHO African Region was the only WHO Region to experience a decrease in the number of substantiated events, compared to 2017. However, the proportion of substantiated events recorded in this WHO Region was the highest amongst all WHO Regions in both 2017 and 2018. In the WHO Regions of the Americas and Europe, there was an increase in the number of substantiated events recorded in EMS in 2018 compared to 2017.

Following the implementation of the IHR in 2007, there has been a general increasing trend in the proportion of substantiated events for which the NFPs and national governments were identified as the initial source of information across the three WHO Regions. In the WHO Region of the Americas, this increasing trend plateaued in 2014, after which a slight decrease was observed. In the WHO African Region, the increasing trend plateaued in 2012, after which there was a significant drop in

<sup>19</sup> PAHO/WHO Epidemiological Alerts and Updates available at: [www.paho.org/epialerts](http://www.paho.org/epialerts)

the proportion of events for which NFPs and national governments were identified as the initial source of information. The sharp decrease observed in the WHO African Region is likely linked to changes in EMS data recording protocols based on existing reporting channels, according to which reports from NFPs are not directly received by the WHO Regional Office, which performs the EMS data entry, but rather by the WHO Country Office, resulting in NFPs not routinely identified as the initial source of information.

In 2018, the proportion of requests for verification for which a response (i.e. provision of information allowing an informed risk assessment)<sup>20</sup> was received within 24 hours, was low in the WHO Region of the Americas (39%) compared to the WHO European Region where the response rate was 67%. In the WHO African Region, this data was not systematically recorded and therefore could not be analysed. Timely information sharing is crucial for the international community to prepare for, respond to, and prevent further spread of public health threats. In the WHO 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 to improve event notification by NFPs. Despite this, over half (53%) of requests for verification sent to NFPs by the WHO Regional Office in the Americas were responded to after 48 hours. This highlights the need to better understand and address the barriers faced by NFPs in regards to timely verification.

Between 2001 and 2018, infectious disease was the most common hazard type for EMS events globally. An increase in the proportion of events related to non-infectious hazards can be observed across all WHO Regions since 2007. This reflects the adoption, in June 2007, of the revised IHR (2005) for which the scope was expanded to include any public health hazards (irrespective of origin or source) that presents or could present significant harm to humans. In 2018, there was a global decrease in the proportion of infectious disease-related hazards compared to the previous two years. This was mostly due to an increase in the number of non-infectious hazards, notably disaster-related hazards. Among the three WHO Regions, the WHO African Region accounted for the majority of disaster-related hazards. By Region, in 2018, the most common non-infectious hazard types were animal and disaster-related in the WHO African Region; animal and other causes (mostly undetermined) in the WHO Region of the Americas; and chemical and food safety-related in the WHO European Region.

A wide range of infectious disease events occurred across the three WHO Regions in 2018, with cholera, measles, dengue fever, and yellow fever accounting for over one-third of events reported in these Regions. During this period, cholera and measles were the most prevalent events in the WHO African Region; measles and dengue were the most prevalent events in the WHO Region of the Americas; and measles and West Nile Fever were the most prevalent events in the WHO European Region. Measles was the only event reported across all WHO regions in 2018.

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<sup>20</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.”

Several information products related to new, ongoing, and updated events were disseminated to the international community in 2018. This has enabled the Organization to share transparent, independent, and authoritative information on events as well as to provide specific guidance and recommendations to States Parties through reports and EIS postings shared with NFPs. In the WHO African Region, a large proportion of the disseminated information products were related to the EVD outbreaks in the Democratic Republic of the Congo. In total, two EVD-specific information products (external situation reports and DONs) were produced and disseminated on a weekly basis since the beginning of the first EVD outbreak. Furthermore, from the time of their official declaration, these EVD outbreaks have been documented in every edition of the weekly bulletin for outbreaks and other emergencies.

Overall, this report highlights the importance to continuously strengthen WHO engagement and collaboration with States Parties in order to achieve their full commitment and contribution in all aspects of the IHR implementation, particularly those related to detection, verification, assessment, and reporting of events. This will require dedicated human resources, close collaboration with partners and other stakeholders, transparent information sharing amongst Member States, and sustained funding.

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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

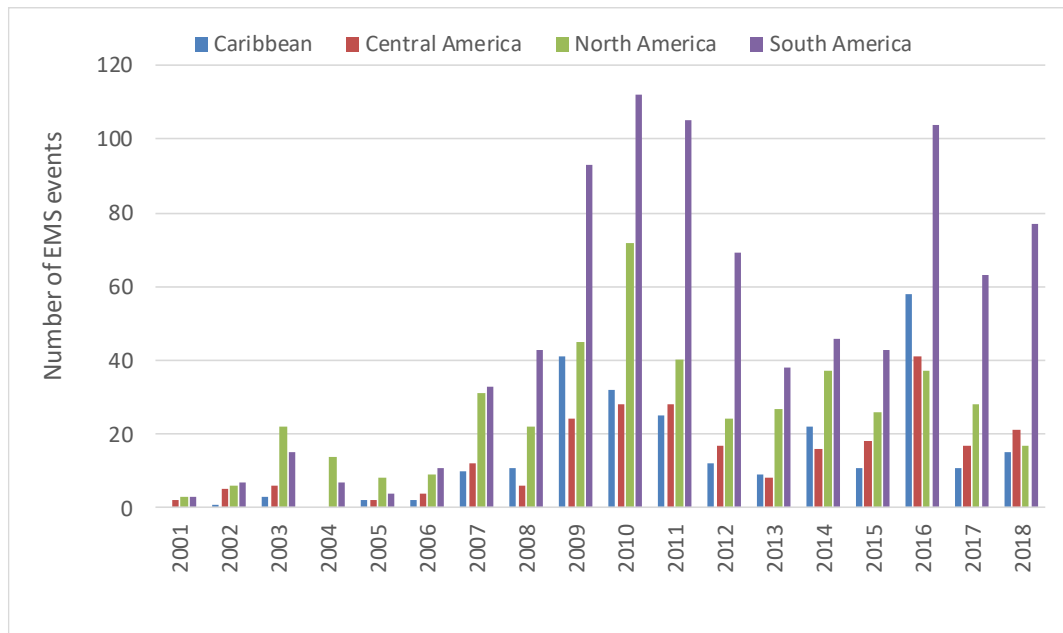
The **WHO European Region** consists of the following 53 Member States:

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. Distribution of events in the EMS in the WHO Region of the Americas by sub-region and year*

**Figure 1.** Distribution of EMS events in the WHO Region of the Americas (N=1,861) by sub-region and year, 2001-2018.



*\*Caribbean:* Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, Bermuda, Bonaire, Saint Eustatius and Saba, the British Virgin Islands, the Cayman Islands, Cuba, Curacao, Dominica, the Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Monsterrat, the Netherlands Antilles, 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

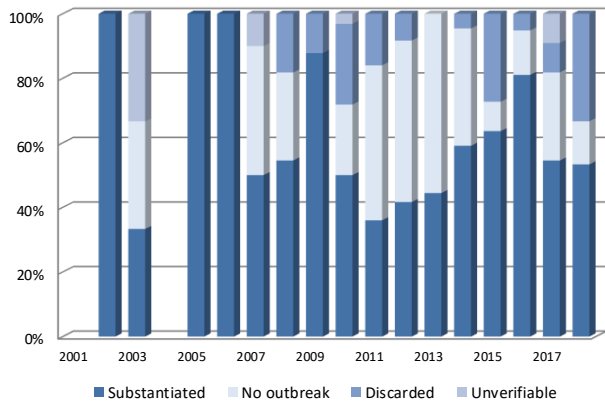
*\*Central America:* Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama

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

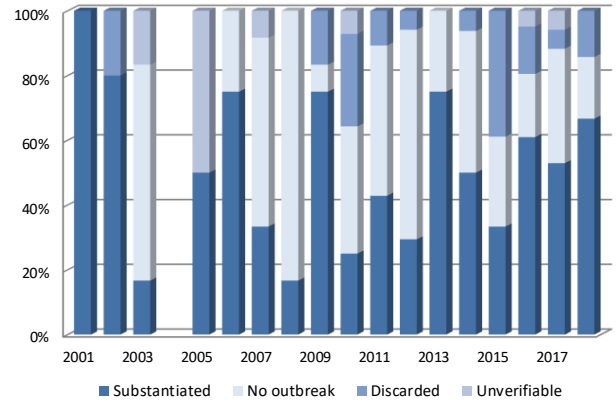
*\*South America:* Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Falkland Islands (Malvinas), French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela

**Annex 3. Distribution of events in the EMS in the WHO Region of the Americas by sub-region<sup>21</sup>, year, and final designation**

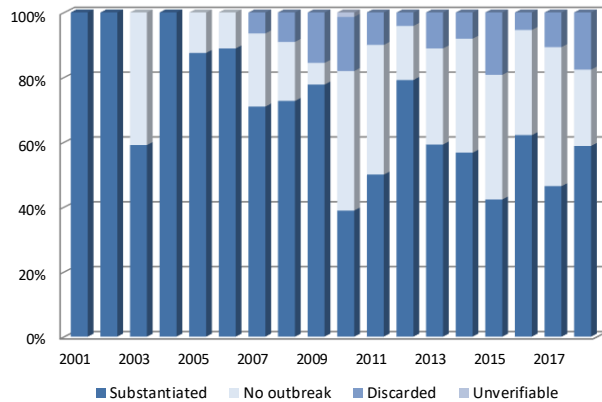
**Figure 1.** Distribution of events in the EMS by final designation and year in the Caribbean, 2001-2018, N=265



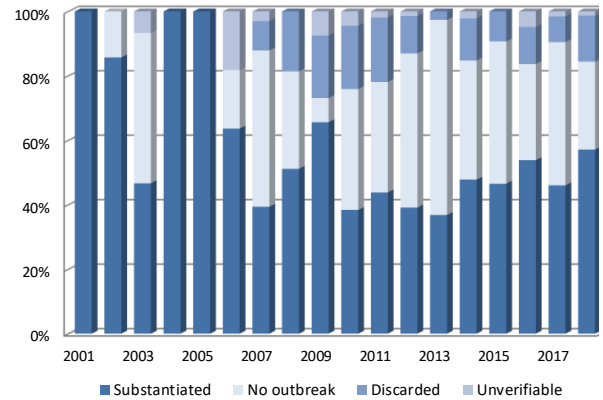
**Figure 2.** Distribution of events in the EMS by final designation and year in Central America, 2001-2018, N=255



**Figure 3.** Distribution of events in the EMS by final designation and year in North America, 2001-2018, N=468



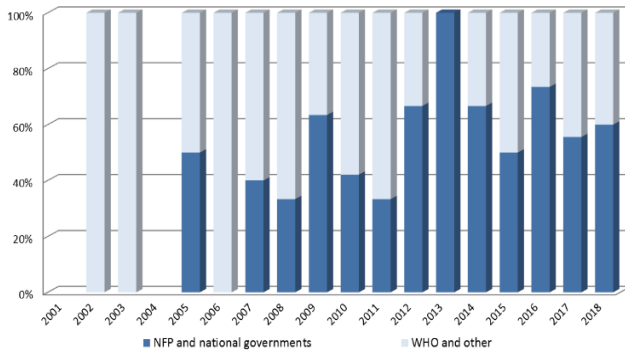
**Figure 4.** Distribution of events in the EMS by final designation and year in South America, 2001-2018, N=873



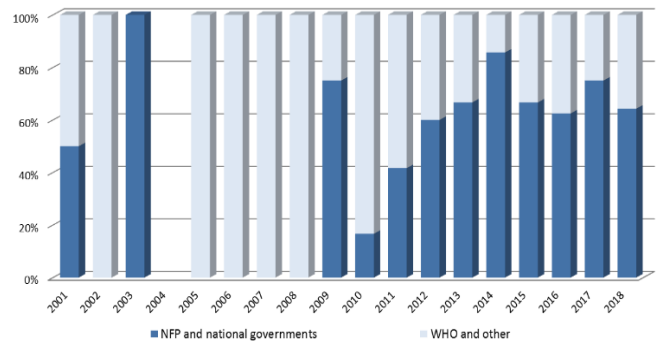
<sup>21</sup> Annex 2 provides a list of the countries and territories included in the data for each sub-region

**Annex 4. Distribution of events substantiated in the EMS in the WHO Region of the Americas by sub-region<sup>22</sup>, year, and source of information**

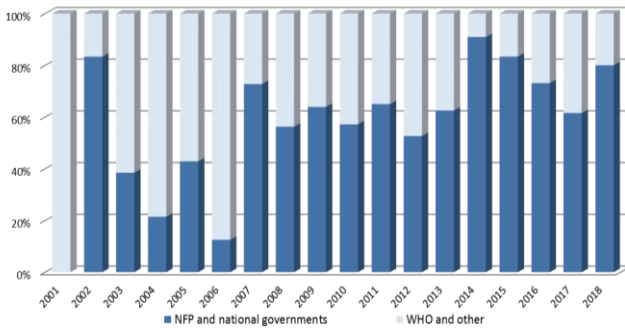
**Figure 1.** Distribution of events substantiated in the EMS by source of information and year in the Caribbean, 2001-2018, N=188



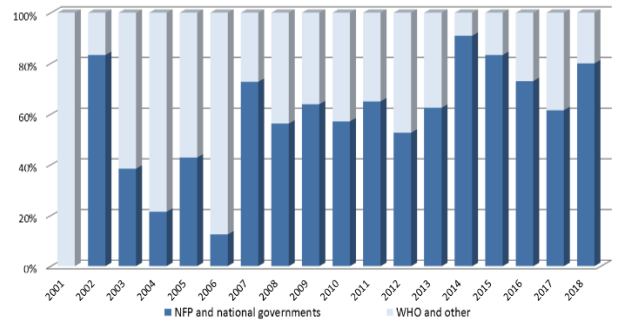
**Figure 2.** Distribution of events substantiated in the EMS by source of information and year in Central America, 2001-2018, N=120



**Figure 3.** Distribution of events substantiated in the EMS by source of information and year in North America, 2001-2018, N=291



**Figure 4.** Distribution of events substantiated in the EMS by source of information and year in South America, 2001-2018, N=411



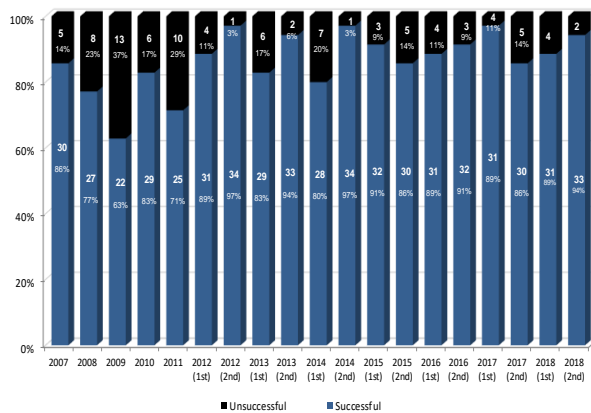
<sup>22</sup> Annex 2 provides a list of the countries and territories included in the data of each sub-region

### 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 2018 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 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 figures below show a comparison of the phone and email communication test results in the Americas for 2007 to 2018 (bi-annual tests have been conducted since 2012).

**Email communication test results from 2007-2018, WHO Region of the Americas.**



**Phone communication test results from 2007-2018, WHO Region of the Americas.**

