

Importance of animal/human health interface in potential Public Health Emergencies of International Concern in the Americas

Maria Cristina Schneider,¹ Ximena P. Aguilera,¹ Ryan M. Smith,¹
Matthew J. Moynihan,¹ Jarbas Barbosa da Silva Jr.,¹
Sylvain Aldighieri,¹ and Maria Almiron¹

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ABSTRACT

This study analyzed the importance of zoonoses and communicable diseases common to man and animals as potential Public Health Emergencies of International Concern to build an evidence base for future efforts to reduce risk of infection at the animal/human health interface. The events recorded in the World Health Organization (WHO) Event Management System (EMS) database for the Americas during the 18 months since the implementation of the 2005 revised version of WHO's International Health Regulations (15 June 2007–31 December 2008) were the main source for this analysis. Of the 110 events recorded by the EMS for the Americas during the study period, 86 were classified as communicable diseases—77 (70.0%) “within the animal/human health interface,” 9 (8.2%) “not common to man and animals,” 16 (14.5%) “syndromes with unknown etiologies,” and 8 (7.3%) “product-related/ other.” Of the 77 events within the animal/human health interface, 48 were “substantiated” (the presence of hazard was confirmed and/or human cases occurred clearly in excess of normal expectancy). These results confirm previous research and underscore the importance of the animal/human health interface as well as inter-sectoral collaboration.

Key words

Communicable diseases; epidemiology; veterinary public health; zoonoses; Americas.

In today's globalized world, diseases have the potential to transcend geopolitical boundaries through international travel and trade. It is now understood that the economies and livelihoods of the entire international community can be affected by a single health crisis in one

country. With this concept in mind, a revised version of the World Health Organization (WHO) International Health Regulations (IHRs) was established in 2005 (effective 15 June 2007) to “help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide” (1). This binding legal instrument covers 194 countries across the globe, including all WHO Member States, and aims to protect public health through the prevention of the spread of diseases.

For that purpose and as part of IHR implementation, WHO Member States are committed to strengthening their surveillance of and ability to rapidly detect, assess, notify, and report potential Public Health Emergencies of International Concern (PHEICs) in accordance with these regulations. A PHEIC is an extraordinary event that has been determined, as provided in the IHRs, to 1) “constitute a public health risk to other States through the international spread of disease” and 2) “potentially require a coordinated international response” (1).

¹ Health Surveillance and Disease Prevention and Control, Pan American Health Organization, Washington, D.C., United States of America. Send correspondence to: Cristina Schneider, schneidc@paho.org

Events are identified as potential PHEICs and reported to the six WHO IHR (2005) Regional Contact Points when they fulfill at least two of the following four criteria: 1) a serious public health event is suspected, 2) the event is considered unusual or unexpected, 3) there is a significant risk of international spread, and 4) the event poses a significant risk to international travel or trade (2). For the Americas region, the Pan American Health Organization (PAHO) has been mandated to undertake certain activities to support countries in the detection and assessment of these potential public health emergencies.

Events that have been reported or detected as potential PHEICs are entered into a database known as the Event Management System (EMS), which is administered by WHO and used by the six WHO IHR (2005) Regional Contact Points as well as the WHO Country Offices in each region. The EMS is the central electronic repository for information related to potential PHEICs and provides chronological storage of clinical, epidemiological, laboratory, and other types of data used in risk assessment and major operational decision-making for managing the event (3).

To date, 61% of human pathogens worldwide have been classified as zoonoses, a subgroup that comprises 75% of all emerging pathogens of the past decade (4). There is a growing belief—echoed in the “One World, One Health” strategic framework endorsed by the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), WHO, the United Nations Children’s Fund (UNICEF), the United Nations System Influenza Coordination (UNSIC), and the World Bank—that an integrated approach to public health events is most effective and efficient with collaboration between physicians, veterinarians, and other health-related disciplines (5).

The myriad demographic and socioeconomic conditions that exist in the countries of the Americas imply broad challenges related to the animal/human health interface. The region is home to close to 1 billion people (80% in urban areas) distributed across 48 countries and territories, with national populations ranging from 40 000 (in St. Kitts & Nevis) to 300 million (in the United States), and purchasing power parity–based gross na-

tional income ranging from approximately US\$ 1 000 to US\$ 44 000 per capita per year (6). In addition, the Americas contain a wide range of environmental settings characterized by diverse plants and animals. For example, the Amazon region comprises 60% of the Earth’s remaining tropical forests, with 45 000 plant species, 1 300 species of freshwater fish, 1 000 species of birds, 150 species of bats, 1 800 species of butterflies, 163 species of amphibians, 305 species of snakes, and 311 species of mammals (7). This flora and fauna interacts synergistically with the human population to create a unique and rich environment that is very important to the planet. On the other hand, this rich synergy can pose a potential threat by forming an environment in which pathogens/diseases can emerge and spread across the animal/human interface, affecting tourism, trade, and other economic sectors important to the region.

A more in-depth analysis of the events recorded by the EMS and a study of their likelihood to be ultimately verified as PHEICs could be valuable for policy development as well as technical orientation of institutional activities related to surveillance, prevention, and rapid response. The primary objective of this analysis is to identify, quantify the importance of, and analyze diseases common to animals and humans in events recorded by the EMS for the Americas region in an effort to produce an evidence base for future recommendations on how to address and reduce the risk of infectious diseases at the animal/human health interface.

MATERIALS AND METHODS

Data sources

This study is based on data for the Americas region recorded by the WHO EMS from June 15, 2007, until December 31, 2008,² and includes potential PHEICs (“events”) tracked by PAHO/WHO. The data used in the study were obtained directly from the EMS database, which comprises information from various sources including the IHR National Focal

Point, [non-IHR] national government agencies, and the PAHO surveillance system. The initial source of information on a particular event may be unofficial as well as official. Unofficial sources include the mass media (both traditional and Internet-based). The PAHO surveillance system includes reports provided by laboratories and WHO technical units and programs. Information gathered through unofficial sources are verified and evaluated jointly by PAHO/WHO experts and the country where the event occurred. Official information comes in the form of notifications by the IHR National Focal Point (the entity designated by each WHO Member State to serve as its liaison with WHO on IHR-related matters).

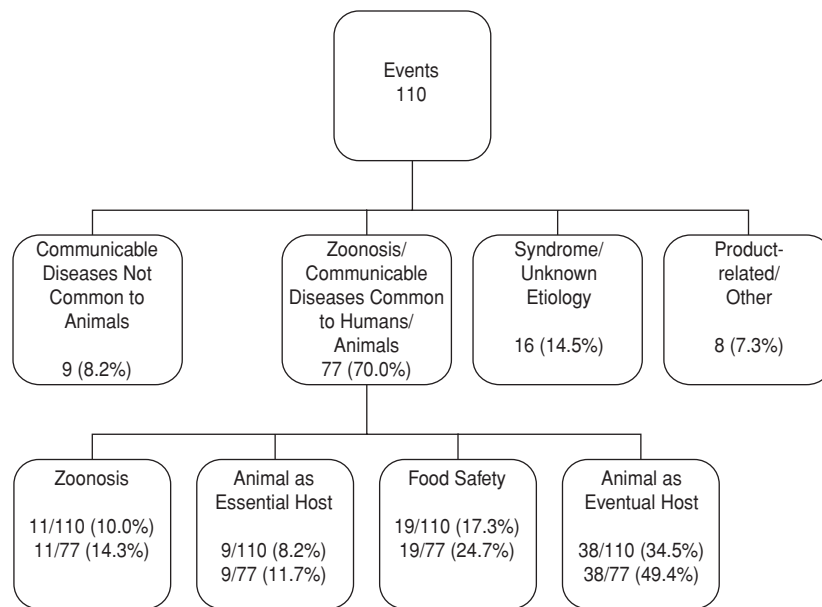
Criteria

Within the context of the IHRs, an “event” is a manifestation of disease or an occurrence that creates a potential for disease (1). In this study, events were classified within the animal/human health interface based on information from the third edition of the PAHO publication “Zoonoses and communicable diseases common to man and animals” (8), which describes 174 communicable infections ranging from diseases of bacterial, viral, and parasitic origin to those involving unconventional agents. Although this publication did not cover all communicable diseases, the authors of the current study did not consider the resulting data gaps to be a significant research limitation as the current study was designed to improve technical cooperation rather than for academic purposes. Any disease not found in the above-cited publication was cross-checked in other communicable disease publications to confirm that it was not common to animals (9).

All events recorded in the EMS are assigned a category related to a potential hazard (“animal,” “chemical,” “disaster,” “food safety,” “infectious,” “product,” or “undetermined”). These same categories were applied in the current study as long as they were deemed sufficient for discerning the animal/human health interface. When they were not, for the purposes of this study, new categories related to the hazard(s) described in the EMS were created. Based on their assigned categories, events were classified into four groups, one of which (Group 1) was further divided into four

² Because the study period occurred prior to the A(H1N1) influenza pandemic, the research was not affected by the subsequent system-wide shift toward coverage of that disease.

FIGURE 1. Number and proportion of events^a recorded for the Americas region in the WHO Event Management System, by group/subgroup,^b 15 June 2007–31 December 2008



^a Potential Public Health Emergencies of International Concern according to the criteria of the revised (2005) World Health Organization (WHO) International Health Regulations (IHRs) (1).

^b Based on reference 8.

subgroups based on the dynamic of disease transmission³:

- Group 1: Zoonoses and communicable diseases common to humans and animals
 - Subgroup 1a—Zoonosis, a communicable disease or infection whose agent is directly transmitted from vertebrate animals to humans
 - Subgroup 1b—Communicable disease common to humans and animals in which vector transmission occurs and animals are essential hosts in the life cycle of the pathogen
 - Subgroup 1c—Communicable disease common to humans and animals related to food safety, with transmission through the food chain and water supply
 - Subgroup 1d—Communicable disease common to humans and animals in which animals are eventual

hosts in the life cycle of the pathogen

- Group 2: Communicable diseases not common to animals (i.e., diseases in which there is no direct transmission between animals and humans and animals do not act as “reservoirs” and are not involved in the life cycle of the pathogen)
- Group 3: Syndromes with no known etiology (diseases that are not clearly defined and for which symptoms may be present but no etiology has been identified)
- Group 4: Product-related and “other” (public health concerns that are not considered communicable diseases and are attributed to a product, chemical, or other material).

Analysis

Event data recorded in the EMS for the Americas region were exported to Microsoft Excel, version 2003 (Redmond, WA, USA). Events occurring during the 18-month study period were examined and event variables pertinent to this analysis were selected. The selected events and relevant variables were compiled in a sub-

database and classified by group and subgroup according to the above-mentioned criteria. Group/subgroup percentages were calculated and events classified within the animal/human health interface (Group 1) were analyzed. The analysis included determining which events were designated as “substantiated” (presence of hazard confirmed and/or human cases occurring clearly in excess of normal expectancy) upon completion of the original event investigation.

RESULTS

A total of 110 events were recorded in the EMS for the Americas region during the 18-month study period (Figure 1). Of those, 86 were communicable diseases, including 77 (70.0%) classified as “common to man and animals” (Group 1) (e.g., influenza, yellow fever, salmonella infections, and dengue), and 9 (8.2%) that were “not common to man and animals” (Group 2) (e.g., hemorrhagic chickenpox, rubella, and meningococcal disease). Of the remaining 24 events recorded by the EMS, which were deemed noncommunicable, 16 (14.5%) were “syndromes with unknown etiologies” (Group 3) (e.g.,

³ While most diseases had more than one type of transmission dynamic, for the purposes of this study subgroup classification was based on the one most common in the Americas.

acute hemorrhagic fever syndrome, acute respiratory syndrome, and acute neurological syndrome), and 8 (7.3%) were “product-related or other” (Group 4) (e.g., adverse vaccine effects or chemical gas/toxic solvent exposure).

The 77 events classified in Group 1 (i.e., within the animal/human health interface) were further divided as follows: Subgroup 1a, “zoonosis” (11 events, representing 14.3% of the group total, with influenza the most frequent); Subgroup 1b, “animals as essential hosts” (9 events, or 11.7%, with yellow fever the most frequent); Subgroup 1c, “food safety” (19 events, or 24.7%, with salmonella infections the most frequent); and Subgroup 1d, “animals as eventual hosts” (38 events, or 49.4%, with dengue the most frequent) (Table 1). Events that were recorded at least twice within a particular subgroup included influenza (representing 7.8% of the subgroup total) and rabies (2.6%) (Subgroup 1a); yellow fever (7.8%) and leptospirosis (3.9%) (Subgroup 1b); salmonella (7.8%), listeriosis (3.9%), botu-

lism (2.6%), and Chagas disease (oral transmission) (2.6%) (Subgroup 1c); and measles (20.8%), dengue (18.2%), and tuberculosis (5.2%) (Subgroup 1d).

Among the 77 events classified in Group 1, 48 (62.3%) were deemed “substantiated” upon completion of the original event investigation. Subgroup 1a (“zoonosis”) had the highest percentage of substantiated events (81.8%) while Subgroup 1d (“animals as eventual host”) had the lowest (50.0%) (Figure 2).

The most recommended interventions for Group 1 events were distributed as follows: vector control (32.5% of events), food safety (31.2%), direct intervention in animals (14.3%), and “other” (22.1%). In addition to comprising about one-third of suggested interventions, the “food safety” classification applied to 17.3% of all events analyzed in the study.

Subgroup 1d (“animal as eventual host”) comprised the smallest percentage of substantiated events (47.4%, with a large proportion primarily related to dengue). In other words, although

events in this subgroup were considered important in the Americas and were monitored accordingly, the ultimate number of human cases in more than 50% of “events” did not exceed normal expectancy when the events were verified. As mentioned above, Subgroup 1a (“zoonosis”) comprised the highest percentage of substantiated events (81.8%), suggesting that events in this subgroup have a higher probability of being classified as substantiated than those in other subgroups.

DISCUSSION

This analysis indicated that approximately 70% of events reported to the EMS by WHO Member States or detected by the PAHO surveillance system were either zoonoses or communicable diseases common to man and animals, supporting previous research results indicating that 75% of all emerging diseases in humans are zoonotic (10, 11). This information suggests that carrying

TABLE 1. Type and number of events^a recorded for the Americas region in the WHO EMS^b and classified within the animal/human health interface,^c 15 June 2007–31 December 2008

| Type of event (pathogen/disease) | Classification subgroup ^d | No. of events | No. of substantiated ^e events |
|---|--------------------------------------|---------------|--|
| Angiostrongyliasis (nematode) | 1d | 1 | 1 |
| Botulism | 1c | 2 | 1 |
| Bubonic plague | 1b | 1 | 0 |
| Campylobacter enteritis | 1c | 1 | 1 |
| Chagas (American trypanosomiasis) | 1c | 2 | 2 |
| Cholera | 1c | 1 | 1 |
| Dengue | 1d | 14 | 3 |
| <i>Escherichia coli</i> infection | 1c | 1 | 0 |
| Hepatitis A (acute) | 1d | 1 | 0 |
| Influenza | 1a | 6 | 4 |
| Leptospirosis | 1a | 3 | 3 |
| Listeriosis | 1c | 3 | 3 |
| Malaria | 1d | 2 | 2 |
| Measles | 1d | 16 | 12 |
| Rabies | 1a | 2 | 2 |
| Rickettsiosis (tick-borne) | 1b | 1 | 0 |
| Salmonella infection | 1c | 6 | 6 |
| <i>Streptococcus</i> Group A | 1c | 1 | 0 |
| Tuberculosis | 1d | 4 | 1 |
| Variant Creutzfeldt-Jakob disease | 1c | 1 | 0 |
| Venezuelan equine encephalitis | 1b | 1 | 0 |
| Yellow fever | 1b | 6 | 6 |
| Mixed etiology: <i>Cryptosporidium</i> , giardiasis, shigella | 1c | 1 | 0 |
| Total | | 77 | 48 |

^a Potential Public Health Emergencies of International Concern according to the criteria of the revised (2005) World Health Organization (WHO) International Health Regulations (IHRs) (1).

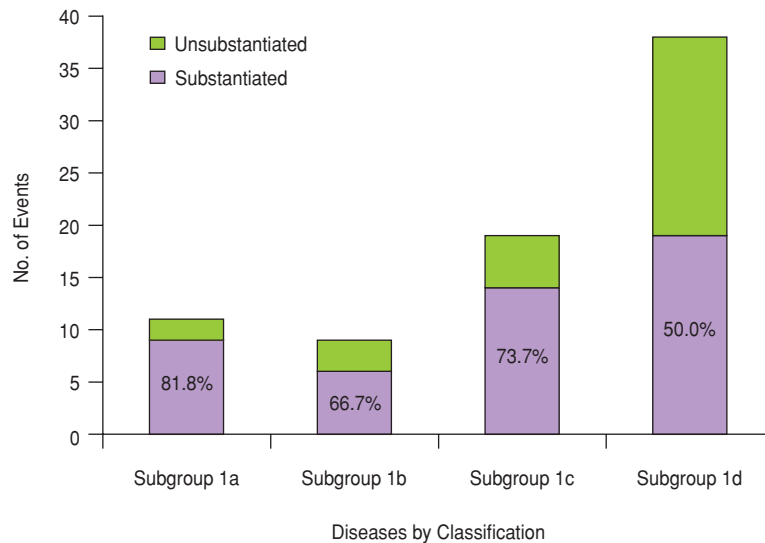
^b Event Management System.

^c Based on reference 8.

^d Subgroup 1a: “zoonosis”; Subgroup 1b, “animal as essential host”; Subgroup 1c, “food safety”; Subgroup 1d, “animal as eventual host.”

^e Presence of hazard confirmed and/or human cases occurring clearly in excess of normal expectancy.

FIGURE 2. Number and proportion of events^a in the Americas region (unsubstantiated and substantiated^b) recorded in the World Health Organization Event Management System and classified within the animal/human health interface,^c by subgroup,^d 15 June 2007–31 December 2008



^a Potential Public Health Emergencies of International Concern according to the criteria of the revised (2005) World Health Organization (WHO) International Health Regulations (IHRs) (1).

^b Presence of hazard confirmed and/or human cases occurring clearly in excess of normal expectancy.

^c Based on reference 8.

^d Subgroup 1a, "zoonosis"; Subgroup 1b, "animal as essential host"; Subgroup 1c, "food safety"; Subgroup 1d, "animal as eventual host."

out proper detection, risk assessment, and verification will require collaboration among the health sciences (veterinary and human) as well as other sectors. It also underscores the need for a better understanding of infectious diseases common to man and animals. Analyzing which diseases represent a higher risk at the animal/human health interface in the Americas region is an essential step.

Most of the diseases recorded in the EMS for the Americas region during the period of this study had a known occurrence in the region. However, the emergence of new strains is always a possibility, as has occurred with the Ebola virus, human immunodeficiency virus (HIV), severe acute respiratory syndrome (SARS), influenza A (H5N1) with a pandemic potential, West Nile virus, and the Novel A(H1N1) influenza virus (12–15).

Estimating when diseases could surpass the expected number of human cases or spread to areas where they were not previously found requires baseline information on the current status and trends of the disease. Countries need to have strong surveillance systems in place or other sources of information that allow for evidence-based decision-making.

The results presented above illustrate to some extent the need to pursue efforts already in place in the Americas. The pathogens/diseases listed in Table 1 under Subgroups 1a and 1b (20 events distributed across seven diseases, including influenza, leptospirosis, rabies, plague, rickettsiosis, Venezuelan equine encephalitis, and yellow fever) are to various extents the focus of current surveillance and control activities developed by the health and/or agricultural institutions in the region. For example, the avian influenza pandemic that began at the end of 2005 in Asia led to the development of global, inter-sectoral strategic plans and activities in the Americas (16–18). Rabies prevention has also been a successful program in the region, leading to a 90% reduction of human and canine cases in the last few decades (19, 20). Human rabies (transmitted by dogs) and plague are both part of a recent resolution project with the goal of elimination in the Americas (21). Many countries in the region are already developing surveillance and control strategies for leptospirosis (22–24). Rickettsiosis and Venezuelan equine encephalitis were the subjects of several studies in the Americas, following the

initial expert consultation in the region (25). The reemergence of yellow fever, on the other hand, may be considered a new trend for the region (26).

Most importantly, the success of several disease programs in many countries or areas cannot undermine the fact that if some areas are left behind in the control efforts, it may threaten others that have already achieved an elimination status. An example of this type of situation can be seen in the reintroduction of rabies in Cordoba, Argentina, after more than six years without canine cases (27), and in the reintroduction of rabies from bats in Costa Rica after 31 years (28). This type of occurrence points to the importance of maintaining surveillance activities and the resources needed to control an emergent/re-emergent disease situation, even when the epidemiological situation has improved.

The study results also underscore the importance of food safety events as potential PHEICs in the region. A recent example is the introduction of bovine tuberculosis in New York City, which may be a result of the rapid shipment of homemade cheeses from foreign countries (29). Another example is that of acute Chagas disease, which is caused by the oral trans-

mission of *Trypanosoma cruzi*, possibly through the contamination of food by the vector's feces. Outbreaks of Chagas diseases as a food-borne illness have been reported more frequently in Latin America in recent years, mostly in Brazil (30–34). Food safety is an area to which international organizations and countries of the region have been devoting significant attention, not only to improve public health but also to protect tourism and trade. Tourism is very important to the Americas' economies, with US\$171 billion in regional revenue attributed to international travel (35), and represents 14.8% of the Caribbean subregion's gross domestic product (GDP) (36).

In the case of some diseases common to animals, the investigation alone can have an important impact on trade related to animal products. This effect may be seen across several countries in the cases of avian influenza and *Novel A(H1N1)* influenza virus (37). The economic loss from a disease related to trade was analyzed by Bio Economic Research Associates (Cambridge, MA, USA), which concluded that billions of dollars were lost, based on several examples worldwide (38). As the Americas region accounts for one-third of global meat production (39), better collaborative efforts among sectors and multidisciplinary teams for the purpose of the IHRs and other epidemic alert and response events are crucial to maintaining economic stability. This emphasizes the importance of international organizations supporting the countries with further guidelines and proper training in addition to existing programs (40, 41).

For most of the diseases listed in Subgroups 1a and 1b, there are cases of disease transmission patterns congruent with interactions between humans, animals, and the environment. For example, outbreaks of human rabies transmitted by vampire bats in remote areas of the Amazon region could be related to changes in local productive processes such as gold mining, deforestation, and interruption of cattle raising (42). Also, several leptospirosis outbreaks have occurred in areas following flood disasters, when contact between animals (such as rats), people, and the environment becomes elevated (43, 44). In addition, domiciliary outbreaks of plague have been detected in the Andean region in South America, where people occasionally share living space with *cuy* (a type

of guinea pig raised and consumed to increase protein intake) and where crops attract wild rodents (20). In the case of yellow fever, human cases are related to outbreaks in wild monkeys. Monitoring areas where the virus is known to circulate among animals in the wild would therefore seem worthwhile (45). For all these diseases, inter-sectoral interaction among health, agricultural, and environmental institutions, at all levels, is crucial.

In the case of Subgroup 1d (communicable diseases where animals do not act as a reservoir for infection but eventually become involved in the life cycle of the pathogen), dengue and measles are of interest given their proportional weight in comparison to other events recorded in the EMS. Although these diseases only affect humans, they are included in the reference book on zoonoses used in this study and are relevant to thorough analysis of the animal/human health interface, which seeks to develop approaches to improve understanding of possible cross-species pathogen transmission. On the same note, the definition of zoonoses in a strict sense is too narrow to define all problems that may derive from animals to human beings (46). Zoonotic pathogens have caused more than 65% of emerging infectious disease events since 1950, and because the diseases often are new, societies are unprepared to treat them (47). Early detection is essential to the control of emerging, reemerging, and novel infectious diseases, whether naturally occurring or intentionally introduced. Containing the spread of such diseases in a profoundly interconnected world requires active vigilance for signs of an outbreak, rapid recognition of its presence, and diagnosis of its microbial cause, in addition to strategies and resources for an appropriate and efficient response. Although these actions are often viewed in terms of human public health, they also challenge the plant and animal health communities (48).

The different types of dengue virus (DENV) are maintained in two transmission cycles: a sylvatic one between nonhuman primates and sylvatic *Aedes* mosquitoes, and an endemic cycle between humans and peri-domestic *Aedes* (49–52). The genetic relationships and phenotypic differences between endemic and sylvatic DENV genotypes may provide valuable insight into the DENV emergence and guide monitoring of future outbreaks and possible interven-

tions (51–53). A study developed in French Guyana suggested wild mammals in edge habitats can be infected by circulating human strains (54). Also, because dengue outbreaks can occur in tandem with other vector-borne diseases, such as leptospirosis, investigation and correct diagnosis of the event are important for controlling potential outbreaks. Proper control of the vector for dengue (usually the *Aedes aegypti* mosquito, in the Americas) requires multidisciplinary teams, including environmental and risk communication professionals, and inter-sectoral interaction (55). Dengue is the most important arboviral pathogen in tropical and subtropical regions throughout the world and is therefore a critical issue in the Americas (51, 52). WHO considers dengue a "tool-deficient" disease, meaning further research is needed to develop better interventions (56).

For measles, the transmission usually occurs person-to-person and the intervention activities, such as vaccination, are therefore directly related to humans (9), making the importance of veterinary medicine or animal biology in the investigation less relevant. Also, in the case of measles events, it is important to consider the potential risk of an anthropozoonotic (human to nonhuman animal) transmission of the disease, which poses a threat to wildlife, in this case nonhuman primates. Outbreaks and serological evidence of nonhuman primate infections have already been reported in relation to tourism and employees of a monkey house facility (57–59).

Integration or collaboration among sectors that deal with zoonotic diseases is a complex issue involving multiple entities and thus requires the implementation of integration policies, joint training, expanded access to data, and other efforts (60).

A model has been established to identify "hotspots" for emerging infectious diseases, most of them zoonoses (60.3%), through the analysis of variables related to demographics and the environment (12). The data from the EMS may be used by the countries to support institutions in predicting public health risks and may thus improve efforts toward disease prevention or mitigation.

Risk communication informing the population of a possible threat is very important because in many cases the event will not be covered by the mass media until it materializes as an actual emer-

gency. Events identified as potential PHEICs thus require a comprehensive response by the public health sector, including lab diagnostics and expanded access to the health system. In today's society, even a rumor of a possible health threat can hamper trade or travel and create significant economic loss. A good example is the response to the *Novel A* (H1N1) influenza virus pandemic, which has put governments and international organizations under recent scrutiny with regard to their ability to manage PHEICs.

The results of this analysis also call attention to the current education system for health-related sciences and the need to integrate the animal/human health interface into the curriculum. Training professionals with a holistic vision of potential risk situations and the practical aptitude to coordinate actions with different sectors is vital. The veterinary medical discipline is one of the sciences that should consider reviewing their curriculum and accepting more responsibility related to protection of human health (61).

In conclusion, it is clear that better understanding of the occurrence of zoonoses and diseases common to man and animals in potential PHEICs will allow for more efficient allocation of resources, both financial and human, and better in-country verification and response, supported by international organizations. Multidisciplinary teams including physicians, veterinarians, environmentalists, epidemiologists, communicators, and others are crucial to the success of the IHR implementation.

Evidence-based analysis of the animal/human health interface could also support new directions in research, vaccines, and treatments, as well as the development of diagnostic tests and other tools, to help prevent, control, eliminate, or mitigate emergent infectious diseases. As mentioned above, and supported by the results of this study, the recommendations of the "One World, One Health" strategic framework—particularly the need to develop surveillance capacity, strengthen public and animal health capacity, strengthen national emergency response, and promote inter-agency and cross-sectoral collaboration—provide some helpful guidance for these types of endeavors (5).

Although the current research was not an analysis of the social determinants of emerging infectious disease events, many of the EMS "zoonosis" events studied are related to poverty in the Americas, as mentioned above with regard to cases of rabies, plague, and leptospirosis (17, 19). A comprehensive approach to the problem, incorporating inter-sectoral partners for joint projects (such as improving housing conditions in areas with rabies transmitted by bats, or improving waste management in areas with leptospirosis), is one way to avoid future emergent events.

Solidarity and transparency among the countries in the Americas region is of utmost importance not only for humanitarian reasons but also because one area affected by disease could rapidly threaten others.

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RESUMEN

Importancia de la interfaz entre la salud humana y la sanidad animal en las posibles emergencias de salud pública de importancia internacional en la Región de las Américas

En este estudio se analizó la importancia de las zoonosis y las enfermedades transmisibles comunes a los seres humanos y los animales como posibles emergencias de salud pública de importancia internacional, a fin de sentar una base científica para las actividades futuras destinadas a reducir el riesgo de infección en la interfaz entre animales y seres humanos. La fuente principal para este análisis fueron los eventos registrados en la base de datos del Sistema de Gestión de Eventos de la Organización Mundial de la Salud (OMS) para las Américas durante los 18 meses que transcurrieron (15 de junio del 2007 al 31 de diciembre del 2008) desde la puesta en marcha del Reglamento Sanitario Internacional de la OMS (versión revisada en el 2005). De los 110 eventos registrados por el Sistema de Gestión de Eventos para las Américas durante el período de estudio, 86 se clasificaron como enfermedades transmisibles —77 (70,0%) como “dentro de la interfaz entre animales y seres humanos” y 9 (8,2%) como “no comunes a seres humanos y animales”—, 16 (14,5%) como “síndromes de etiología desconocida”, y 8 (7,3%) como “relacionados con productos/otros”. De los 77 eventos comprendidos dentro de la interfaz entre animales y seres humanos, se fundamentaron 48 (se confirmó la presencia del riesgo u ocurrieron casos en seres humanos que claramente superaron los casos esperados). Estos resultados confirman las investigaciones anteriores y destacan la importancia de la interfaz entre la salud humana y la sanidad animal, así como la importancia de la colaboración intersectorial.

Palabras clave

Enfermedades transmisibles; epidemiología; salud pública veterinaria; zoonosis; Américas.