

Public Health Events and International Health Regulations

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Mike Miller] Hi, I'm Dr. Mike Miller and today I'm speaking with Dr. Katrin Kohl, a CDC medical officer. Our conversation is based on her study about Public Health Events and International Health Regulations, which appears in CDC's journal, Emerging Infectious Diseases. Welcome, Katrin.

[Katrin Kohl] Thank you Mike, it's good to be here.

[Mike Miller] Please give us a little background on International Health Regulations.

[Katrin Kohl] The international health regulations, also called IHR, refers to an international legal instrument that is binding on 194 countries across the globe, including all member states of the World Health Organization or WHO. The United States is one of these member states. The IHR is intended to help prevent the spread of disease across borders. The regulations outline the minimum requirements for functional public health system that allows countries to quickly detect and respond to disease outbreaks in their communities. Also, countries are required to quickly notify WHO of severe disease events that could spread internationally, also referred to as public health emergencies of international concern. This rapid notification allows WHO to quickly guide a coordinated global response to such an event and minimize unnecessary interference on travel or trade.

[Mike Miller] Well, has the United States reported any major public health events in the last few years?

[Katrin Kohl] Since June 2007 when the IHR entered into force, the US has reported more than 25 public health events to WHO, including the 2009 influenza pandemic, other novel influenza viruses, and several outbreaks associated with contaminated food items.

[Mike Miller] Well, what might be considered a public health emergency of international concern?

[Katrin Kohl] The regulations define a public health emergency of international concern as an extraordinary event that may constitute a public health risk to other countries through international spread of disease and may require an international coordinated response. What this means for countries is that public health events should be assessed using four decision criteria. The criteria are one, is the public health impact of this event potentially serious? Two, is this event unusual or unexpected? Three, is there the potential for international spread? And four, is there the potential for travel and trade restrictions? If two of these four criteria are met, countries are required to notify WHO within 24 hours. There is also a list of four diseases that always need to be reported to WHO: severe acute respiratory syndrome or SARS, smallpox, new influenza viruses, and wild-type polio. The Director-General of WHO then determines if the event is a public health emergency of international concern. So the role of countries is to assess the magnitude and potential risk involved with an event, and WHO's role is to make the decision.

It's designed this way so that WHO, as our global public health authority, can quickly assess the global risk of an event and, if needed, convene countries to mount a coordinated international response.

Countries don't need to know what the cause or the source of an outbreak is to report it to WHO. The focus is on early detection and reporting to allow for a public health response before international spread occurs, or at least to minimize the global impact of an outbreak. An example of this is the outbreak of severe acute respiratory syndrome or SARS that started in China in 2002. Early on, we didn't know that the illness was caused by a coronavirus or that it had likely jumped from animals to humans. However, it became quickly apparent that the disease could kill people and that we did not know how to treat or prevent it--meeting the criterion of serious impact on public health. We also quickly realized that this event was unusual in that we didn't know what it was, how it was transmitted, or who could get sick from it. At the same time we did know that the disease affected travelers, who were able to 'export' the disease to other countries -- meeting the criterion of potential for international spread. This event would have been a prime event to report to WHO under the IHR and to benefit from a coordinated international response. In fact, it is because of SARS that the global public health community got together to revise an older set of the international health regulations and adopt the current set. If we had had the current IHR already in place during the SARS outbreak, it is possible that WHO would have learned sooner about the event. This could have enabled scientists to potentially identify the cause of this illness sooner, and some of the significant economic impact on China because of travel warnings by many countries against travel to China might have been prevented through modified global recommendations.

[Mike Miller] Tell us about the IHR system that is in place for reporting on potential threats.

[Katrin Kohl] Under the IHR, all countries must designate a point of contact, called the National Focal Point, which is available for communication to and from WHO at all times. In the United States, the Secretary's Operation Center at the Department of Health and Human Services serves as our National Focal Point. The Secretary's Operations Center notifies WHO of potential public health threats in the United States that meet the assessment criteria in the IHR. The assessment itself is largely conducted by senior scientists at CDC, which is the primary US public health agency conducting and supporting public health activities. CDC invites the relevant state epidemiologist and representatives from the Council of State and Territorial Epidemiologists to join the assessment. The assessment is performed within 48 hours of becoming aware of an event that could merit reporting to WHO. At CDC, we become aware of an event through many different sources, for example, through routine disease notification systems, through media reports, or through anecdotal reports by astute public health practitioners. All of this can be used to assess and potentially notify an event to WHO.

[Mike Miller] Can you tell us how successful this system has been?

[Katrin Kohl] The system has been very successful when you consider the number of events notified to WHO under the regulations. There have been more than 200 events worldwide formally notified to WHO as meeting at least two of the four risk assessment criteria, as well

hundreds of more postings on a secure IHR website for information exchange on events between countries, which could include information about event response measures taken.

The system was put to the test during the 2009 influenza pandemic, which has been the only reported event so far determined to constitute a public health emergency of international concern. CDC reported the first two laboratory-confirmed cases of this novel flu strain to WHO in 2009. After further consultation with us and Mexico, WHO determined within a few days that this event was indeed a public health emergency of international concern. Seven weeks later, WHO declared this outbreak to be a pandemic.

Quickly, many other countries reported cases of pandemic influenza to WHO under the IHR framework, and WHO initiated regular in depth calls with all countries to better understand the global picture of this outbreak and to learn about best measures to minimize its impact. As a result, WHO was able to make harmonized recommendations to all countries in an effort to minimize unnecessary control measures.

The system also allows rapid information exchange between two countries directly through the National Focal Points. In the U.S., for example, we are contacted regularly through this system by other countries letting us know about U.S. citizens who were potentially exposed to an infectious disease while traveling overseas. This exchange of information allows us to contact those citizens and offer public health follow-up and prevention measures if indicated. Another marker of the success of these regulations is that they establish a standardized risk assessment tool that all countries have signed on to. This tool greatly facilitates the assessment of events happening in more than one country at the same time; for example, the U.S. and Mexico jointly assessed a cluster of acute flaccid paralysis with cases on both sides of the border on the basis of the IHR criteria and were able to do so quickly, not only because of pre-established relationships that we have with counterparts in Mexico and the U.S., but also because we had a common pre-approved platform against which to judge the seriousness of the event.

[Mike Miller] The World Health Organization revised its International Health Regulations back in 2005. Why was this necessary?

[Katrin Kohl] WHO revised the 1969 version of the IHR after recognizing that more and more people rapidly travel from one part of the world to another and are more connected than ever through travel and trade. The SARS outbreak is a very good example of this. In the United States alone, we have more than 300 million border crossings every year. To address this reality, WHO made three key changes to the IHR: Countries now need to report all events based on the risk assessment mentioned earlier, when previously, there were only three predefined diseases that needed to be reported; the IHR shifted from preventing the international spread of disease through control at the border to containment at the source; and finally, the current IHR no longer lists a prescribed set of response measures, but these regulations allow countries to adapt measures to best address the event. These changes should allow the global public health community to react faster and more flexibly to public health events.

[Mike Miller] Do you think there's still room for improving the assessment and reporting of public health events to WHO?

[Katrin Kohl] Yes. While many countries have reported public health events with the potential for international spread in the past five years since the IHR entered into force, not all countries have done so. And not all have done so frequently or for all appropriate events. The basis for assessment and reporting is to have information to assess. Many countries have not yet reached the minimum core requirements that allow them to detect outbreaks, and many don't yet have a solid public health system in place for notifying others of such events within their own country. Also, assessment and notification is only one side of the coin. The other side is the ability to quickly and adequately respond to a disease threat in one's country, also a requirement laid out in the IHR. This response capacity is another requirement not yet met by many countries. As we currently mark the five-year milestone when countries are supposed to be fully implemented under the IHR, many countries have requested a two-year extension to achieve the core requirements for surveillance and response. WHO is working closely with countries to achieve this goal. The US is also assisting where possible, for example, through training programs of international public health professionals or by providing technical assistance in setting up systems for disease detection.

[Mike Miller] Are there strategies public health authorities can take to help people become better informed about international public health emergencies?

[Katrin Kohl] Right now, much of the information sharing under the IHR happens between different Ministries of Health and WHO. People in the affected countries continue to rely on information shared in the media or by the responsible public health authorities directly. In my experience, public health authorities can reap greater health benefits when they quickly share pertinent information about an outbreak with the public and make it a priority to communicate with the public about ways to prevent and control the spread of disease. The IHR can assist with this by allowing all countries, including countries with limited resources, to become aware of what's going on in other parts of the world, to learn what appropriate health prevention and control measures to apply, and to request assistance as needed.

[Mike Miller] Well thank you, Dr. Kohl. I've been talking with Dr. Katrin Kohl about her study, *Assessment of Public Health Events through International Health Regulations, United States, 2007–2011*, which appears in the July 2012 issue of CDC's journal, *Emerging Infectious Diseases*. You can see the entire article online at www.cdc.gov/eid. If you'd like to comment on this podcast, send an email to eideditor@cdc.gov. I'm Dr. Mike Miller, for *Emerging Infectious Diseases*.

[Announcer] For the most accurate health information, visit www.cdc.gov or call 1-(800)-CDC-INFO.