COCA Conference Call
Revised International Health Regulations: Clinician Role in Implementation
Scott J. N. McNabb, PhD, MS and Katrin S. Kohl, MD, PhD, MPH
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Operator: Welcome and thank you for standing by. At this time all parties are in a listen-only mode. During the question-and-answer session please press star one on your touchtone phone. Today's conference is being recorded. If you have any objections you may disconnect at this time.

I would now like to turn the meeting over to Jim Schwendinger. Thank you, sir. You may begin.

Jim Schwendinger: Thank you so much. Thank you all for calling in. This is a very, very important COCA call. We're very happy to have two very informative speakers. Welcome to the call. It's going to focus on the revised international health regulations which go into effect today. So we're very excited to be at the cutting edge of this. This particular presentation is going to focus on the clinician role in implementation of these new and revised international health regulations. And we're very, very honored to have two excellent speakers today, Dr. Scott McNabb and Dr. Katrin Kohl.

Dr. McNabb, prior to joining the Epidemic Intelligence Service (EIS) in 1991 here at CDC and serving a two year EIS residency in New Orleans worked for 13 years at the Oklahoma State Health Department. Since 1993, his professional efforts have been targeted to serve people in underdeveloped, international settings. Recently promoted to Distinguished Consultant and Director of the Division of Integrated Surveillance Systems and Services in the National Center for Public Health Informatics here at CDC. He also teaches at the Rollins School of Public Health at Emory University. Nominated for the 2005 CDC Charles Shepard Award, he successfully

completed the 2004 Senior Executive Services candidate development program and is certified by the Office of Personnel Management for the Senior Executive Services.

Dr. Katrin Kohl is currently the Deputy Division Director in the Division of Global Migration and Quarantine (DGMQ), with its three branches being Quarantine and Border Health Services Geographic Medicine and Health Promotion and Immigrant, Refugee, and Migrant Health -- and, two offices of Policy and Regulatory Affairs and Preparedness and Responses here at the Centers for Disease Control and Prevention. One of her responsibilities is the implementation of the newly revised WHO International Health Regulations which went into effect in 2005. With its focus on health measures and travelers and preparedness and response at ports of entry. Prior to joining DGMQ, Dr. Kohl spent six years in Immunization Safety in the National Immunization Program and in the Immunization Safety Office in the office of the Chief Science Officer here at CDC. Dr. Kohl first joined CDC in 1997 as a medical officer in the Epidemic Intelligence Service (EIS) assigned to the Louisiana State Health Department where she focused on STD prevention efforts, TB control, and investigations of foodborne outbreaks.

Our objectives for today, Drs. McNabb and Kohl will discuss the revised International Health Regulations, the international law designed to protect the health of people around the world without unnecessary interference to travel and trade. The overview will describe important changes to the IHRs which will impact how the U.S. government reports public health events of international concern to the World Health Organization.

I'd like to make one more note before turning it over to Dr. McNabb, that different - a little different from our past COCA calls, we actually have a dedicated e-mail for any questions that might come up that either aren’t

answered in the Q&A part of the call or after the call and that e-mail address is ihrquestions – with an s – so – Indian hotel romeo questions@cdc.gov (IHRQuestions@cdc.gov) and I would ask that you please, you know, send any questions after the call to that e-mail address and they will be answered by the subject matter experts. So, without further ado, I'm honored to be able to introduce Dr. Scott McNabb.

Scott McNabb: Thank you, Jim. With my colleague Dr. Kohl, it's our pleasure to share with you a new development in international health and that is the revised International Health Regulations. We'd like to – if you'll turn to slide two, please. This slide provides an overview of the revised IHRs in terms of what they are, why we need them, how they should be implemented, who they apply to and when they will take effect. On the slides that follow additional information will be provided about each of these categories.

The International Health Regulations are a formal code of conduct for public health emergencies of international concern. And you'll hear that term expressed throughout our presentation -- Public Health Emergencies of International Concern – or PHEIC. They are a matter of responsible citizenship and collective protection for the global community, and it involves all of us in the U.S. national, tribal, territorial, state and in our local roles as - in the clinical community. This, in addition, is an international regulation which involves all 193 World Health Organization member countries, the United States being one member country. And today, July 18, 2007, the United States government will officially be implementing the revised International Health Regulations. Next slide, please.

The IHRs and the international cooperation they require are intended to facilitate a more robust and rapid and effective international response to health emergencies that do not respect jurisdictional borders. So, they are an

international agreement that gives rise to international obligation. They are comprehensive, in effect, the implementation of the IHRs are expected to make the world safer from the international spread of disease. They focus on serious public health threats with the potential to spread beyond a country's borders to other parts of the world. And, as I mentioned previously, such events are defined as Public Health Emergencies of International Concern or PHEICs. The IHR has outlined the assessment, the management, and the information sharing for PHEICs which become our international obligation as a member of the world community. Next slide, please.

The IHRs serve a common interest. They relate to serious and unusual disease events that are inevitable. An example would be the SARS outbreak which occurred in 2003. They serve a common interest because they respect health threats and the reality that a health threat in one part of the world can threaten health anywhere or everywhere. And again, they're a formal code of conduct which helps contain or prevent the serious risks that may occur to the public's health. Further they discouraged unnecessary or excessive traffic or trade restrictions for "public health purposes". Next slide, please.

The old IHR requirements mandated notifying WHO of cholera, yellow fever, and plague, and smallpox at one time until its elimination. The revised or "new" IHRs have a new paradigm and involve a decision algorithm that assess if a PHEIC exists. So it involves a new paradigm for reporting and potentially might include radiologic or chemical events. The member countries including the United States are required to notify WHO of events that meet defined criteria and those that are beyond this prescribed list -- as I mentioned, radiologic or chemical events. Member countries also must, are required, to enhance their events management, especially alert and response action. As well as meet minimum core capacity, notably in surveillance, response and at points of entry. Next slide, please.

International Health Regulations and their revision are written in a legal language. They are supported by guidelines that aid compliance and they are intended to contain public health threats and to minimize economic destruction, however, they are not self-explanatory. They are not recommended - recommendations for safe travel. And, they are not a scientific consensus on everything possible to prevent disease spread. Next slide, please.

On December 15, 2006, United States government accepted its responsibility to implement the International Health Regulations with a reservation and three understandings. WHO member countries were informed about the United States' reservation and three understandings on January 17, 2007. So according to IHRs, there are six months that any other member country has to register an objection to the reservation and the deadline for that was yesterday, July 17. So that officially today July 18, 2007 the United States begins implementation of their responsibility related to the IHRs.

And at the national level the United States government is encouraging local and state governments to aid in their compliance, and, as an example of that, Secretary Leavitt has mailed a letter to the governors of each state encouraging their participation in the implementation phase of the IHRs. And, our colleagues at local and state public health agencies, through the Council of State and Territorial Epidemiologists, have accepted and adopted a Position Statement that supports the implementation of the International Health Regulations. Next slide, please.

The reservation that Secretary Leavitt placed on the United States' acceptance of the International Health Regulations respected our Federalist form of government, which is a sharing of power between the national and state

government. Federalism is the system of government in which we live, in which power is divided between the Federal government and local and state government. It's the state health officer in each of the states who has the power, responsibility, and authority to require the reporting of certain notifiable conditions and also has the responsibility to be involved in the first responses. Next slide, please.

The three understandings that Secretary Leavitt accepted or put forward in the acceptance of the IHRs include that under the IHRs, the incidents that involve a natural, accidental, or deliberate release of chemical, biological, or radiological materials must be reported to the WHO. The second was that countries that accept the IHRs are obligated to report, to the extent possible, potential public health emergencies that occur outside their borders. And the third understanding was that the IHRs do not create any separate, private right legal action against the Federal government. Next slide, please.

As the focal point, the Health and Human Services Secretary's Operations Center or SOC coordinates the U.S. government's communication process for reporting the PHEICs to WHO. WHO has access to IHR information and it will be 24/7 and of course the CDC assumes a lead role in IHR implementation especially as it relates to human illness and disease. And those three areas will include the detection of events, the prevention of events, and their control. One major role for CDC is to support the existing health monitoring systems that already exist in local and state government authorities that identify and report notifiable conditions. Local, state and federal public health authorities must cooperate to improve the ability of national – of our national health monitoring system, to report these possible PHEICs under the IHR provisions. Next slide, please.

I'm going to turn the presentation ever to my colleague now, Dr. Kohl.

Katrin Kohl: Next slide. This slide shows accord by Secretary Leavitt upon acceptance of the revised IHR. It stresses the need for global preparedness and response to public health emergencies. So, what are these public health emergencies that we're talking about in this context? Over the next few slides I'm going to walk you through criteria for identifying and reporting public health emergencies of international concern to WHO as defined in the revised IHR. These criteria need to be applied by federal agencies upon notification of potential Public Health Emergencies of International Concern. Next slide.

There's a list of 4 diseases in the revised IHR which are always reportable to WHO, namely smallpox, poliomyelitis, a new subtype of human influenza and SARS. In addition, there is another list of diseases that do not require mandatory notification, but always have to be assessed using the decision algorithm put forth in Annex 2 to the IHR. These diseases included among others, cholera, plague, yellow fever and viral hemorrhagic fever. All other biological, radiological or chemical events that fit the criteria in the decision algorithm that I will describe over the next few slides also need to be reported. Next slide.

This slide lists the four criteria listed in the decision algorithm and Annex 2 the IHR. I will go over guiding questions for each of the four decision questions in the next few slides. Again the questions from the decision algorithm with the decision guiding questions aimed to help us assess the reportability of an event to WHO. In short:

- Is the public health impact of the event’s seriousness? Think HIV, even early in the epidemic
- Is the event unusual or unexpected? Think back to the first cases of West Nile Virus in the U.S.

- Is there significant risk of international spread? Think of SARS and how quickly it traveled in Asia and to North America. And lastly,
- Is there significant risk of international travel or trade restrictions? Think of the recent notifications of contaminated toothpaste or lead-painted children's toys from China which effectively stopped importation of these items to the U.S.

If two of these four questions are answered with a yes, the event is reportable to WHO under the IHR. WHO then makes the final determination if a Public Health Emergency of International Concern exists. Next slide.

I'm going to read the guiding criteria listed on the slide without further explanation, but want you to think through any public health events you've encountered and assess in your mind if they would have met any of these explanatory criteria to the larger question, if the public health impacts of this event is serious. If any of these criteria are foreseeable the question of seriousness would be answered as yes. So there's potential high morbidity and the mortality. The geographic scope is large of spreading over a large area. The agent is highly transmissible or pathogenic. The event has compromised containment or control efforts. Therapeutic or prophylactic agents are unavailable, absent or ineffective and cases are occurring among health-care staff. And probably of less significance for the U.S., the event requires assistance from another country or WHO for investigation and response. Next slide.

These are the criteria for an unusual, unexpected event. That is, the disease-causing agent is yet unknown or a new pathogen. The population affected is highly susceptible. The event is unusual for the season, locality, or host. There's a suspicion that this may have been an intentional act. And, the agent has been eliminated or never reported in the U.S. Next slide.

The other criteria for risks for international spread, such as, is there an epidemiologic link to a similar event outside the U.S., that is, are there circumstances that may predispose to international spread? For example, did cases travel internationally or participate in international gathering? Or were they in close contact with travelers or mobile populations? Also is there the potential for cross-border movement of pathogens, agents, or the host? And finally, are there conducive transmission vehicles such as air, water, food, or the environment involved. Next slide.

Finally for the last question of the decision algorithm, if there is significant risk of travel or trade restrictions the criteria are: there's a history of similar events in the past that have resulted in restrictions. The event is associated with an international gathering or tourist area. The event is or has gained significant government or media attention; and there is a zoonotic disease or the potential for an epizootic event or if it's exported or imported, food or water-related. Next slide.

This slide shows a simplified decision instrument from Annex 2 of the IHR to summarize the previous slides. The left box shows the four diseases that bypass the list of questions and have to be reported to WHO without further assessment. Any other events including the additional diseases specifically listed in the box on the right go through the set of four questions and as mentioned earlier have to be reported if two of the four questions are answered with yes. Next slide.

To further summarize, public health events need to be assessed within the local context. A decision instrument for reporting of a Public Health Emergency of International Concern is available in the IHR and WHO will also assess the reported event and in effect, will make the final determination

if a public health emergency of international concern exists before any publication of the event or stating a formal response. Next slide.

As mentioned before, in the U.S., the federal government has a responsibility for assessment and reporting of potential public health emergencies of international concern to WHO through the regional offices from WHO. CDC, as all other government agencies, for example, FDA or EPA, have 48 hours to make the assessment after learning about an event, and an additional 24 hours to notify WHO. In order to fulfill our obligation of rapid assessment and reporting to allow for the fastest possible response on a global level, U.S. government agencies will in turn need to learn about events in the states as quickly as possible.

All of you can assist in fulfilling our global obligation to rapid sharing of pertinent information with WHO by notifying your local health department or CDC of any event that may meet the decision algorithm of the IHR. On June 28, as Scott already mentioned, the Council of State and Territorial Epidemiologists has voted in favor for position to rapidly report potential public health emergencies of international concern to CDC. And again, the decision then, to further report to WHO and affecting these events through the algorithm put forward in the IHR lies within CDC or any of the other federal agencies and then ultimately with WHO. Next slide.

In addition to the assessment and reporting of events, the IHR also prescribed globally shared responsibilities such as core capacities to conduct surveillance and states response to prevent importation and spread of disease at points of entry, and to develop country-specific procedures, a key element of WHO strategy for global health security. Next slide.

I will only briefly address the framework of response and potential measures applied in response to a Public Health Emergency of International Concern. The core capacities spelled out in the IHR aim to assure that an expected robust national response effort can be undertaken which is context specific, flexible, and permits international health measures. For example, for points of entry, those could include entry screening for travelers for event-related health symptoms, including medical exams and interviews upon entry into the country. It could include vaccination requirements or other preventive public health measures or quarantine of exposed and isolation of air travelers. All measures potentially applied have to be by consent and with respect for human rights. Next slide.

This is a busy slide showing the timeline for full implementation of the IHR globally. Let me go over the dates with you. In 2005, the World Health Assembly approved the revised IHR which is why they are often referred to as the IHR 2005. In 2006, the U.S. accepted the revised IHR. On June 15 of this year, the IHR entered into force, except for countries like the U.S. that submitted the reservation, in which case, for procedural reasons that Scott already mentioned, the IHR entered into force in the U.S. on July 18th - today.

In 2009, that is within two years of entering into force, member countries have to have completed an assessment of the core capacities in their country. In 2012, that is five years from entering into force, countries have to have achieved the core capacities, unless they are granted an extension which can be granted for a second time under exceptional circumstances. By 2016, all WHO member countries have to be fully compliant with the IHR. In the U.S. we aim to be fully compliant by the IHR - by the date the IHR is in force for us. Hence, today. Next slide.

This slide lists all the federal government's partners who are actively involved in the implementation of the IHR, just to give you a flavor of it. Next slide.

Finally, here are some references for further information about the revised IHR including the WHO web site with information about the IHR and all WHO languages, the web site of the Department of Health and Human Services, including also the acceptance of the IHR by the U.S. government, an article published in Emerging Infectious Diseases (a CDC journal) which had the simplified decision algorithm shown earlier, the CSTE Position Statement and a link to CDC's nationally reportable diseases web site. Thank you.

Jim Schwendinger: Great. Thank you Dr. McNabb and Dr. Kohl. That was a great presentation, very thorough. I have to say a couple of my questions were answered as the presentation went along. Carolyn, I think we would like to open it up to questions and answers at this point.

Operator: Thank you. We will now begin the question-and-answer session. If you'd like to ask a question please press star one, un-mute your phone and record your name clearly. Your name is required to introduce your question. To withdraw your request, please press star two. Once again if you have a question or a comment at this time please press star one. One moment please.

Thank you. We have a question from Arthur Masky. Your line is open and please state your organization.

Question: Dr. Kohl, I would just like to express my appreciation for the extensive program that you folks are obviously working very hard at a complex matrix of problems. We just want to ask one question. Hypothetical: if you had an airliner coming in from, say, the southern portion of Asia, with 300 people on

it, and during an eight or ten hour flight they found six, eight, ten people becoming ill and it was indicative of an airborne disease. What would the provisions be at the terminal? What would be the response? What would be the physical response? Thank you.

Katrin Kohl: Thank you for the question. Let me just clarify, in the context of this presentation, your question is almost more routinely of what we do in my division in response to airline investigations or reporting of the passengers on airlines. By default, this was not – would not yet constitute a Public Health Emergency of International Concern. So, this goes much more to our routine response to passengers on airlines, and in the case that we do get a response of one or more passengers on an airline, we do have a system in place that pilots do notify either our staff at quarantine stations or their medical directors who in turn contact us. And, we do have partnerships and efforts in place at all ports of entry in the United States who respond to these events, be it through EMS, if it's an airport there'd be staff, through our own quarantine stations staff, and so it's hypothetical I couldn't answer to you right now, it depends obviously on the disease, you know, it doesn't just depend on if its airborne.

But we do have the provisions in place to meet the airline upon arrival with our staff backed up by EMS and other medical staff, we make a quick assessment on the plane to see what follow up we would have to do on the ill passengers. We already give guidance to the pilot while the plane is still en route and also then what to do with potentially exposed passengers in terms of immediate follow-up depending on the incubation period and the contagiousness of the disease or follow-up once the passengers have arrived at their final destination including making a determination if the passengers are able to continue with further flights so those provisions are in place through our routine response to passengers on airplanes.

Question cont'd: Thank you Dr. Kohl. One more question, just an antidote. Would there be any provision for quarantine?

Katrin Kohl: The provisions for quarantine are actually not regulated in the IHR. They are regulated by each government itself and there is no consistent law to regulate quarantine around the world and so, we in the U.S. – our quarantine laws have a provision for several diseases which include TB, yellow fever, smallpox, etcetera, so we would be able to quarantine based on our quarantine law. Every other country would do it based on their quarantine law.

Question cont'd: You think it would be practical to have a temporary quarantine provision or provisional circumstance, a physical or you may want to take 200 or 300 people and just hold them off for a few hours until you learn more about the progress of the illness?

Katrin Kohl: We do have a provision for temporary quarantine to make assessment of the event. We have airline investigations almost every day in the U.S. and luckily what happens in most instances – it's really unusual that we have to hold a plane for long. As you know, time is key to any movement of people, particularly with large enterprises such as airports, so it's very rare that we actually have to hold a plane beyond the immediate assessment on the plane.

Question cont'd: Thank you, Dr. Kohl. I've taken enough of the people's time here and thank you, everyone.

Operator: Thank you and as a reminder at this time, if you have question or a comment, please press star one, un-mute your line and record your name. Again, for a question or a comment at this time please press star one. One moment please.

A question or comment coming at this time and please state your organization.

Questions: Patton State Hospital, California.

Operator: Please go ahead.

Question cont'd: I just need some clarification from Dr. Kohl. She talked about quarantine and isolation and respect for human life. Did I understand her to say she also needed consent?

Katrin Kohl: Yes, so bringing it you back to the IHR, it could be that WHO would require public health measures from many states involved in the public health emergency of international concern and what the - what governmental members, they feel strongly about when negotiating the obstacles in the IHR, that countries couldn't just at random implement any of the measures that may come forth and couldn't do so without respect to normal procedures and how we would apply public health measures. So, hence, for example, if there were a proposal from WHO to implement everybody coming from a polio endemic country into countries that no longer have polio, that we couldn't just forcibly immunize people, obviously we would do so, but by consent, usually in this country certainly applied good-best medical practices. And, so under our quarantine law, we also have a provision where we can temporarily quarantine exposed passengers, for example on an airline, but also passengers or any quarantined person certainly has the right to appeal to any of our quarantine provisions.

Question cont'd: So, if you found a situation where someone needed to be quarantined or isolated and the person was resistant, we could not do anything about it if they didn't consent - would that be effective?

Katrin Kohl: So, let me mention again - when I mentioned that public health measures need to be applied with consent and with good public health ethics, that applies to any kind of measure we would want to apply in a public health emergency and again it could be this medical screening, they could be interviewed, there could be immunizations, it could be the recommendation to wear masks. So when you get into the area of quarantine which is only one of the potential provisions, that is governed by each countries' quarantine regulations and so we could quarantine somebody against their will but that doesn't mean that there aren't measures in place and we have them in place in this country for the equitable and ethical implementation of our quarantine laws, which also include appeals by persons who are quarantined and then it would go through its regular appeals process here in force as etcetera.

Question cont'd: Thank you. I'm done.

Operator: Thank you and at this time I'm showing no further questions. Again, as a reminder if you have a question or a comment, please press star one, un-mute your line and record your name. Again for question or a comment at this time please press star one. One moment, please.

And we do have a question; your line is open and please state your organization.

Question: Thank you. Chester County, Pennsylvania Health Department. A request and a question I guess. In one of your slides you mentioned the letter that Secretary Leavitt sent to the governors and the support statement from the CSTE. Is it possible that you could post those so that we could get copies for our files? That's my request. My question has to do with the slide in which you talk about the responsibilities at points of entry, surveillance in response to points of entry and so on, and I guess I have a question since we tend to

have a fair number of migrant workers often times undocumented. People slip through our borders quite easily and only a small percentage of the food and products coming into our ports gets inspected, you know, for safety etcetera. I'm just wondering how effective that kind of thing can be and how one can mandate that. How do we put in surveillance in response at points of entry when we don't even know half the points of entries sometimes?

Scott McNabb: This is Scott McNabb. Thank you for your question. I think there were actually three questions. The first was about the letter that Secretary Leavitt sent to the governors and also the location of the CSTE Position Statement. On the next-to-last slide in this slide deck you'll see the IHR references and the second bullet lists the HHS global Web site, Global Health Web site, which has the letter from Secretary Leavitt and there is on the - looks like the sixth bullet is the Web site for the CSTE Position Statement.

Question cont'd: Thank you.

Scott McNabb: Now can you, would you please repeat the second question? I know the third question was about migrant farm workers but…

Question cont'd: That's really it, I mean, that's the main thing. We have a lot of people slip through our borders, we have undocumented workers coming in, etcetera, and I know from our experience in tabletop exercises at the ports and so on that port security or even the USDA can't inspect every product, every truck, every vessel that comes in, so you know, how we do this in a way that we can be pretty sure is going to be efficient and effective?

Katrin Kohl: Okay you're raising obviously a very complex question and so to the two parts, in terms of the migrant workers, I mean, short of, again outside of the contexts of the International Health Regulations which would come into play

with a Public Health Emergency of International Concern in terms of response, anybody coming to this country with any medical condition no matter legal, illegal, migrant, tourist or permanent resident or U.S. citizens, would go through our established health systems be it the local health department or be it their private physician and this is how we, certainly, at the federal level would hear about events. And, in terms of cargo and goods and food and animals, we do know that Customs and Border Protection (CBP) for all our international shipments do inspect the cargo vessels, obviously not so much for the content of the cargo, but for any other kind of security measure, but they do also do some inspection of cargo itself, and USDA would do the same for foods coming in. It does not mean that every single cargo container in this country does get inspected, but we do have provisions in place to do random checks, to do routine checks, and certainly also what the IHR governs is that they give us the right to want to implementing routines through our consistent inspections from certain countries if we feel there are risks associated with the goods coming in from this country. But, you do raise a good point and we are still improving every day through our partnerships with Customs and Border Protection, with USDA or with FDA, how we can further our inspections at the ports of entry.

Question cont'd: Thank you.

Operator: Thank you. And at this time I'm showing no further questions. Again, if you have a question or a comment, please press star one, un-mute your line and record your name. Again, for a question or a comment, please press star one at this time. One moment. And, at this time I am showing no further questions.

Jim Schwendinger: I think at this point we're going to wrap up, but Dr. Kohl and Dr. McNabb wanted to make one kind of clarification and then I think, you know, at the

end of that, Carolyn, I'll let you go ahead and talk about the replay and all that. Thanks everyone for participating. This was a great presentation and again we'll review the e-mail address for questions but I turn it back over to Dr. Kohl and Dr. McNabb.

Operator: We did have one person that queued up for a question at this time. Did you want to go ahead and take that?

Jim Schwendinger: That's fine.

Operator: Okay. Question cont'd, your line is open..(Arthur Masky)

Question cont'd: Dr. Kohl. Thank you for your patience. One more question. The quarantine facility that may or may not exist at the airports or whatever, are those the responsibility of the airport, the airline, or the government?

Katrin Kohl: The quarantine facilities are the responsibility of the federal government, in fact my division, but beyond the physical space at the airport we also have Memorandums of Understanding with numerous hospitals, 700 hospitals around the country, who would help us with the isolation of air passengers and also for quarantine purposes.

Question cont'd: Thank you Doctor.

Operator: And at this time I'm showing no further questions. Please go ahead with your closing comments.

Scott McNabb: This is Dr. McNabb. I think on behalf on Dr. Kohl we want to thank you for being a part of this call and we want to recognize and respect the critical and important role that you play in this process. We want to encourage you to

report to your local and state health authorities or to CDC, any of the circumstances which we've described today and we want to thank you for all of the work that you do in support of public health. The IHR web site, the web site locations are on the references slide that we've posted and there is an e-mail address if there are any further questions. Please send us an e-mail we'll be happy to respond you. Thank you very much.

Operator: Thank you, and as a reminder, I would like to repeat the replay number that is available. This call is recorded for replay. You may dial the replay number. It's 1-800-677-4609. Again to listen to the replay, it's 1-800-677-4609. And for further questions you may e-mail them to IHRQuestions@cdc.gov. Again that's IHRQuestions@cdc.gov. Thank you and that does conclude today's conference call. Thank you for your participation. You may disconnect at this time.

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