Centers for Disease Control and Prevention

CDC Telebriefing Transcript

Update on Severe Acute Respiratory Syndrome (SARS)

April 22, 2003

DR. GERBERDING: [In progress] 109 case of SARS internationally that meet the probable case definition, plus 39 cases in the US that meet the probable case definition. WHO is also reporting a total of 229 deaths and a case fatality rate of 5.9 percent. Looking at SARS from the international perspective we remain sobered by the ongoing transmission in Hong Kong, China, and probably Singapore. We also see countries where there has been at least some successful containment and looks like progress is being made in a number of fronts in that regard. Here in the United States we are continuing to cast a very broad net in terms of decisions about isolation. So although we have distinguished between probable and suspected cases in our reporting format, we are continuing to recommend the same standard of isolation for both suspect and probable case to be sure that we get everybody properly isolated as early as possible in the course of their illness and do everything we can to prevent transmission to others. And let me just review for you what the domestic priorities are for us at this point in time. First and foremost, case detection remains an extremely important componential of this. So we are continuing to alert inbound travelers to the United States from the areas of the world were ongoing transmission is still occurring and that includes travelers incoming from mainland China, from Hong Kong, from Taiwan, from Vietnam, from Singapore, and from Toronto, Canada. Specifically with respect to Toronto, we are working with the Health Canada officials to provide an alert to travelers coming into the country who have been in the Toronto area. This alert is being distributed at Toronto international airport and over the next week we anticipate beginning the process of providing this alert to people traveling by land across the major highways connecting US and Toronto, and are also be looking at if and when we need to be doing that for train passengers as well. This is the mechanism to simply alert people to the fact that that is a community where SARS is being transmitted and that if an individual becomes ill within ten days of their last point of contact they should contact their medical provider. So that's one very important component of identifying at the earliest possible moment people who might be coming down with SARS. And next very important component of our containment here in the United States is initiating the appropriate isolation of SARS patients as soon as they are suspected and we are specifically advising travelers or others who know they have been in contact with SARS patients to not just show up in the doctor's office, but to call ahead and alert the health care delivery system so that the infection control precautions can be ready for them when they arrive, and that health care workers will not be unprotected at the point of first contact in the medical care environment. This is working well. Already we are been hearing reports about medical care facilities that have put up large signs in the emergency room and immediately access patients with a travel history and institute the isolation steps prior to obtaining the full medical history so that they can be sure that the health care providers are afforded the best possible protections and that the individual patient is given the best possible timely care in the medical environment. Another very important component of our containment here is to make sure that household contacts or other face-to-face contacts with patients with SARS are in an active-monitoring program during the ten day period of time after their last exposure where they might possibly come down with the illness, and so we have asked health departments across the country to develop methods for actively monitoring exposed persons. We're not asking exposed persons to do quarantine, but we are asking that they participate in some kind of a regular evaluation so that if they develop any of the early symptoms of SARS they will contact a health care provider and then go through that process of coming in and getting seen.

The earliest signs of SARS include not only fever, but in addition other evidence of respiratory illness, including dry cough, headache, fatigue, muscle aches and so on and so forth, that those could be the earliest signs. And someone who's traveled to one of the affected areas, that would be an indication for further assessment or at least a call to a clinician.

We are also interested in getting some input from our expert advisory committees about whether there are any circumstances where additional quarantine measures or additional precautions need to be taken. For example, if a health care worker has unprotected exposure to a SARS patient, for example, while inserting a ventilator tube for mechanical ventilation, which would be a procedure that could involve direct face-to-face contact with infected body fluids, there may be additional steps for those health care workers to take during the period of potential incubation to be absolutely sure that they don't acquire the infection or don't have a risk of passing it on to others.

So we have already provided some advice for managing potentially exposed health care personnel, but we are going to be asking for input today and this week to see whether or not there are additional steps that should be taken to ensure that we're doing everything we can to limit any spread of this illness here in the states.

But also, I'd like to say that we talked a little bit about this epidemic. We still have no capacity to predict where it's going or how large it's ultimately going to be. I think the good news is that we do see effective containment in some areas and some measures do seem to be very successful. I think we're also very sobered by the ongoing transmission in parts of the world, including Hong Kong, where very, very appropriate public health steps have been taken, and yet the epidemic is continuing to evolve there. So it's too soon to predict where it's going to go.

We must remain vigilant here. The last thing that we can do at this point in time is relax and say, well, thank goodness we don't have very many probable cases in the United States, and therefore, maybe we're not ever going to have any subsequent spread so that we don't need to be doing the things that we're doing now. This is exactly the time where we need to continue to do what we're doing and learn our lessons from what we are observing in the other countries who are working on this problem.

And I would say, just not entirely parenthetically, that the Canadian health officials are doing an absolutely outstanding job in Canada. Today a team of experts from CDC have gone, at the invitation of Health Canada, to provide additional technical support for the efforts under way in Toronto, and these individuals will be specifically focusing on protection in the health care setting and looking at the kinds of isolation and safety precautions that would be most useful there.

We have also a large number of evaluations and assessments going on at CDC in conjunction with our state and local health partners across the United States, as well as in conjunction with the WHO teams in the various countries that are affected, and these projects are really trying to answer some of the really important questions that will help us understand where is this going to go and why is it unfolding the way it's unfolding.

Some of those questions include why are some patients apparently more infectious or more capable of serving as source of infection to others than most patients are? How long does a person remain infectious after they acquire the illness? What are the factors that determine who gets very sick and develops a full-blown pneumonia, and who has the relatively mild form of the illness? What's the long-term follow up of patients who have recovered from SARS? Do they fully recover? What is their health status on an ongoing basis? And I think also importantly, what are the things that we as a public health agency can do to be effective at communicating common sense and prudent recommendations from a public health perspective without causing

unnecessary fear and panic or over reaction in the public? And what can we be doing to address the stigma and the bias that's still ongoing in some of the affected communities?

So we are working very hard to get these questions answered. At the same time we're working with the private sector and our partners in the federal government to continue to test antiviral compounds and to initiate additional strategies for identifying a test protocol for the infection. A lot of progress has been made very quickly, but there still is a great deal to learn and a great deal to do, and unfortunately, we're not out of the woods yet, so we will be continuing to provide you updates on an ongoing basis as we move forward.

Let me take some questions now from the reporters on the floor.

AT&T OPERATOR: And ladies and gentlemen, again, if you do wish to ask a question, you would depress the 1 on your touchtone phone. Thank you.

QUESTION: [In progress] -- Hong Kong and in Toronto. First, Health Canada is saying today that they've been given results of a study conducted by CDC that indicates that the SARS virus survives on surfaces for up to 24 hours, and I'm wondering if you could address that study and tell us more about those results?

And secondarily, both Toronto Public Health and the Hong Kong Department of Health have said that they're seeing very high rates of diarrhea in their patients, 24 percent in Toronto and over 60 percent in the [inaudible] Gardens outbreak in Hong Kong. I'm wondering whether you are contemplating making any changes in your case definition or addressing that particular clinical--that [inaudible].

DR. GERBERDING: Right, thank you. Before I answer your question, I just wanted to alert the people who are trying to call in on the phone that we understand there's been some delay in reporters being able to access through the phone system, so we'll take that into consideration and do our best to make sure that they get a chance to queue in for Q&As.

With respect to your question about the longevity of coronavirus on surfaces, we've known for a long time that coronaviruses can survive on external surfaces for several hours, and I'll ask Dr. Hughes to amplify the data on that particular point from the NCID perspective. While he's preparing to do that, I'll take your other question which relates to diarrhea.

We have known that diarrhea could be a symptom of this illness from the very first cases that were presented. I think the initial report said something like a 10 percent prevalence of diarrhea in the early reports. Coronaviruses in many animal and bird species actually primarily cause gastrointestinal infection and diarrhea, so it's not surprising to see that in here.

The problem is, like some of the other symptoms, diarrhea is a very nonspecific finding, and I'm not aware that we've seen it as the only presentation, so it's part of the constellation of the fever and the respiratory illness. A variable proportion of patients have also had diarrhea, and I think that is worth noting and something that we'll be looking at in our case-controlled studies, to see whether that correlates with any clues about how it's being spread or what the risk factors for severe disease are. But for right now, it's not in and of itself an important component or an indication for changing the case definition.

Let me introduce Dr. Jim Hughes, the Director of National Center for Infectious Disease, who will provide some more perspective on the first question.

DR. HUGHES: Yes, thank you. The question relating to environmental survival of coronaviruses. There's been limited studies done over the years looking at other coronaviruses that cause colds in humans, and reports have indicated that one of those viruses has been able to survive on a surface for up to 3 hours and the other one for up to an hour. That was one study.

There's work now in WHO collaborating laboratories, and some of them looking at persistence of this(?) agent. We haven't done that yet here ourselves, but in one of the other WHO labs that work has been done that suggested perhaps a longer period of survival in the environment, but I understand that study is actually being repeated at the moment. So I would say stay tuned. We don't have definitive data yet, but it is an important question that needs to be addressed.

DR. GERBERDING: There's a question there.

QUESTION: Thank you, Dr. Gerberding. I'm John Sherrick with WXIH, Channel 11 in Atlanta.

Regarding your information about the notices that are going out to travelers at the airport in Toronto, what consideration have you had about giving notices to people who were traveling to some of the affected areas? For example, people here at Hartsfield Airport who might be going to Toronto or Singapore or Hong Kong.

DR. GERBERDING: There is a difference between the message that's for the outbound passengers as opposed to the message for the inbound passengers. The yellow alert card that looks like this is the standard format that we're using for arriving passengers, and this is the message that says you've been someplace where SARS is a problem, and if you get sick, see your clinician, and likewise there's a message to clinicians here.

In addition to that, CDC and the State Department routinely issue various kinds of advice to outbound travelers. One kind of advice is called a health alert, and that's just simply a heads-up. There's a health problem in the area where you may be traveling. You need to be aware of it. Perhaps there are some special things that you need to do to protect yourself if you're going there.

And we have issued a health alert to travelers to Toronto, Canada. And that health alert basically says, no reason to stay home, but if you're going there, be aware that SARS is present in some settings in the community and you may wish to avoid the hospital environment or the health care environment, for example, because that's one of the places where there has been transmission. So it is not advice to not travel, but it's simply information and some practical measures that people can do to protect themselves.

A different level of advice to outbound passengers is a travel advisory, and we also have travel advisories for SARS. These are now in effect for China, including mainland China as well as the Hong Kong Special Administrative Region, Hanoi, and Singapore. And these outbound advisories right now are saying, please avoid non-essential travel to these areas because there is ongoing transmission in the community that is not linked back to the initial cases.

We can't exactly predict where the cases are present or where the hazard might be, and therefore it's in your best interest to not go there if you don't need to.

Let me take a telephone question, please.

MODERATOR: We do have a question from the line of Helen Branswell [sp] with the Canadian Press. Please go ahead.

QUESTION: Thank you very much for taking my call. You sent a team of people to Toronto today, I guess. A couple of weeks ago, the Ontario health authorities were saying that they were asking, had made a request a couple of times to have assistance from the CDC and that that hadn't been acquiesced to. I'm wondering what's the difference now.

I'm also curious about the Coronavirus. We heard this morning from the head of the National Microbiology Laboratory in Winnipeg that they're only finding evidence of Coronavirus in about 40 percent of specimens from people who have probable and suspect SARS, and they're finding it in some people who don't have any signs of the disease. So I'm curious if you could give us an idea of what kind of figures you're finding in your labs and why you seem to really believe that the Coronavirus is the causative agent.

DR. GERBERDING: To answer your first question, which is the timing of the arrival of the CDC teams in Toronto. First of all, very early on Health Canada, from a national perspective, assigned a Canadian to the operations center at CDC and we in turn subsequently assigned a CDC employee to work in the operations in Canada, so that we would have a communications exchange and be able to share information rapidly.

In addition, there was, at various levels, some requests from Toronto for CDC technical assistance. But our system of exchanging scientists works through the federal government in Canada, and so Health Canada made the request to have additional technical assistance, and we are certainly willing to do what we can in any way that we can to assist.

So it's a difference between working through the province and working through the national system, and our responsibility at CDC is to work through the federal health officials in Canada.

With respect to the second question about the association of Coronavirus and the condition known as SARS, there are several reasons why not all patients have evidence of Coronavirus. First and foremost is probably because they don't have SARS and they don't have Coronavirus infection; they have some other respiratory illness that's caused by something else.

Another explanation is that although we have tests that can identify it when it's present, we don't know how sensitive they are. If they are not very sensitive, there may be patients who really have infection but the test is negative because it just doesn't have the sensitivity to pick it up.

Another reason is the timing of the specimens. We know, for example, even with influenza, which is an illness that we have very good tests for, if we don't do certain tests early in the course of influenza, the tests are too negative. They're just simply done too late.

So there are many reasons. And of course we want to get answers to those questions. One test that will probably help us out in the long run is the antibody test, because in general antibody tests are a good marker of actual infection with an agent. But these tests don't tell us that information until several weeks after the infection is already present. So it's going to take us awhile to get all those samples and put all of the different test results together with the clinical conditions of the patient and come up with a more precise understanding of the utility of the test, but also the spectrum of illnesses that present with the SARS syndrome, which may or may not actually be caused by this virus.

Let me take another telephone question, and then I'll come back to reporters on the floor.

MODERATOR: We have a question from the line of Kelly Patrick with the Toronto Globe and Mail. Please go ahead.

QUESTION: Would you tell me a little bit more about your plans to issue advisories at the land crossings as opposed to just the Toronto National Airport. If you could tell me where you intend to issue the handouts and when you intend to start doing it?

DR. GERBERDING: Yes, the question about the health alert for travelers coming to the United States from Ontario and Toronto. The airport has been doing this for some time, (Editor's Note: Distribution of health alert cards at U.S. airports receiving direct flights from Toronto is expected to begin by the end of the week.) and we will be initiating at land crossings a form of alerting that will utilize the same card and the same information. There are two very large bridges between Ontario and the U.S. I think those are in Detroit and Buffalo. And there are two smaller major thoroughfares where the majority of traffic back and forth moves. And so those will be--those four intersections between the two countries will be the primary place for distributing these health alerts. At least that's the plan right now. It's going to take a little while to get these organized and printed and moved and translated and get the mechanisms up in place to distribute them. But if all goes as we plan, we should be able to initiate that later this week.

I'll take a question here.

QUESTION: Thank you, Dr. Gerberding. [Inaudible] from the Wall Street Journal. I was wondering if you could update us on the question of treatment, just to give us a little more detail about what treatment options are being considered as an anti-viral, what, if anything, seems promising. Along with that question, there seem to be some reports from Hong Kong that the treatment of ribavirin and steroids may be harming some patients more than it's helping them. I just wondered if you could tell us anything you know about that.

DR. GERBERDING: Right now, we don't have any scientific evidence to suggest that any form of specific treatment for SARS is effective. There were initial reports, primarily from Asia, that seemed to indicate patients might do better if they received ribavirin and steroids, but in retrospect that was very anecdotal information and probably not supportable by the broader experience that they've been having there recently. And ribavirin is a drug that does have some serious side effects, including hemolytic anemia and other complications. We also know from the early results of the viral testing studies that there doesn't seem to be any activity of ribavirin in the methods that are being tested right now against this particular Coronavirus.

So, so far we don't have any leads on an antiviral compound, but the Department of Defense laboratory and NIH are working in partnership with us to look at as many compounds as we can very quickly. So if we get any clinically promising compounds, we will of course work hard to get them into a clinical trial or an investigational drug protocol so that we can check them out. This is not going to happen fast.

I think there was a question here also.

I have two questions. First of all, could you hold up the yellow card again so we can get a shot of that.

DR. GERBERDING: I can even give you one.

QUESTION: Okay, great. The next--

DR. GERBERDING: The yellow card looks like this. It comes in several languages and the cards that are in print right now have expanded from the various Asian languages that are on here to include Spanish and French as well, so that we're trying to get them out in as many different formats as possible.

QUESTION: Great. The other question I had was on Friday we learned that Emory University doctors had developed a blood test for SARS. Have you had a chance to look at that? Would you be using it, or is there another test that can be used to help identify patients?

DR. GERBERDING: Let me talk about testing generically because there is a lot of interest in getting good testing protocols available for the patient. We published, along with the Canadians, the sequence of the virus on the Internet, and once the sequence is known, just about anybody with a biotechnical capacity can create the reagents necessary to do one kind of test that's just called a PCR base test or a test that relies on finding little pieces of the virus genetic material and reproducing them in high volume so that you can easily detect it in your test system. And so my understanding is that's the basis of the Emory test. So the technology to create a test like this is pretty much recipe in many biomedical laboratories.

The problem is knowing whether the test you're using is accurate or not, and the only way you can really determine that is by using your test on a wide variety of clinical specimens including people that you're very confident have the infection, as well as people that you're very confident don't have the infection, and that takes time, but it also takes access to a whole panel of specimens.

CDC is working on this here in collaboration with the WHO partner laboratories, and we are sharing specimens and working very fast to try to understand the accuracy of the variety of tests that are out there so far, and I'm sure we will be able to have a good test available in the future. But now we're still in--let's check these tests out and try to interpret their accuracy before we use them to make decisions for individual patients, and then ultimately the FDA has to be involved. We need to get an exemption to use an experimental test just like we get approval to use an experimental drug, and those protocols are under way.

Let me take a telephone question, please.

AT&T OPERATOR: Thank you. And from the line of Christian Redd with the New York News. Please go ahead.

QUESTION: Good afternoon. How are you doing?

DR. GERBERDING: Good.

QUESTION: I wondered if--I have a couple of questions but they're all related so it should be pretty easy to answer. When was the first reported death in Canada, and is the CDCP doing anything different with regard to professional sports teams that are traveling to either Toronto or Canada? Are the warnings that these teams getting or the information they're getting any different from what you just described as far as the alerts to make them aware of what's going on there?

And then lastly, are the alerts that you're talking about--since I can't see what you're holding up--are they available on the CDCP website under this menu of "to the traveler" and it says "during your recent travel to SARS affected areas including Toronto," et cetera? Is the same as what you're talking about when you're holding up these cards?

DR. GERBERDING: Yes. All of the CDC materials are available on our website, including the alerting cards as well as the health alerts for the outbound passengers and the health advisory for the outbound passengers. So basically all of our material is available.

With respect to the date of onset and the date of death of the initial patients in Canada, I don't have that information here, but you can get that from our press office or better yet from the Canadian officials.

QUESTION: From Health Canada or someone?

DR. GERBERDING: Yes.

QUESTION: Okay.

DR. GERBERDING: But with respect to the question about advice sports teams and so forth, from a CDC perspective, we have generic advice to travelers generically. We don't have customized information for any particular class of travelers at this time, and there's no reason to think that sports teams, per se, would be at any different risk than others traveling to Toronto for whatever reason. So it's a generic, just a heads-up kind of advice at this point, and we would advise them not to visit the hospital or spend time visiting people who are in the hospital if they had that on their personal agenda.

I'll take another telephone question.

QUESTION: Sorry. Were there any recommendations against playing in Toronto or--

DR. GERBERDING: No, there are no advisories against participating in sporting events in Canada at this time.

QUESTION: Great.

DR. GERBERDING: Let me take another question from the phone.

AT&T OPERATOR: Thank you. And we do have a question from the line of Rob Stein with the Washington Post. Please go ahead.

QUESTION: Hi, Dr. Gerberding. Thanks for doing this.

DR. GERBERDING: I think we lost the question. Can we try again to get Rob back on the phone?

QUESTION: Hello?

DR. GERBERDING: Rob?

QUESTION: Yeah. Hi. Can you hear me now?

DR. GERBERDING: Yes, we can hear you.

QUESTION: Great, thanks very much. I'm one of the people who didn't get in early on the conference call, so I was wondering if you wouldn't mind just sort of recapping what it is you might have announced at the beginning?

DR. GERBERDING: Yeah. I'll just give a very quick recap. We provided the information on the updated numbers of cases in the WHO and the CDC, and we can refer you to the website to recapture those, but basically we're talking about 3,909 global cases, plus 39 probable U.S. cases at this point in time. Also discussed the importance of maintaining vigilance here

domestically, not to be lulled into any kind of false sense of security because we haven't seen large-scale community transmission here. We don't know the reason that we've been lucky so far, but we're not taking any chances and we just need to continuously work hard to isolate cases when they initially present, and to protect our health care workers from any exposures in the health care environment. And also we plan to continue to seek input and advice from our infection control experts to see if there are additional things that we need to do to protect health care workers or expand our monitoring of exposed people during the period of intubation for the illness.

Is there a question?

AT&T OPERATOR: Yes, ma'am, we do have a question. From the line of John [inaudible] with the Washington Facts. Please go ahead.

QUESTION: Yes. Thank you, Dr. Gerberding. I also got in late here. I'm hoping that you might be able to speak a little bit about what if any evidence there's been of a zoonotic connection with SARS. We've heard mixed reports.

DR. GERBERDING: We are very intrigued by the possibility of a zoonotic source for the SARS coronavirus. That's a speculation at this point in time based only on the fact that we know coronaviruses do infect a wide variety of animals and poultry, and that people in many parts of the world, including Asia, have contact with some of the animals that are sources of coronavirus in some of the poultry, so that it would be a biologically plausible possibility, but we absolutely have no data at this time to support it.

Unfortunately, sequencing the virus that we have has not yet pointed us into a direction of similarity with known animal or bird viruses to give us any hints about where to look. So this is part of the work that needs to go on in Guangdong Province and others areas where the very early cases occurred, to see whether or not by evaluating animals or birds in those regions or learning more about the first patients, we would be able to get some hints about any possible link between birds, animals and people that could have been one way this got started.

But I would stress that's only a speculation at this point in time and there are many other possibilities for how the strain of coronavirus we're dealing with right now may have emerged or evolved in people.

I think we had a question over here.

QUESTION: Elisa Gail, NBC Nightly News.

It's kind of a three-pronged question. It's all related. Should the U.S./Canadian border towns have any reason to be more worried about SARS coming up there than any other area of the country? And if so, should they be taking more precautions than other towns, and what should those precautions be? And then lastly, what is the CDC doing to monitor these towns?

DR. GERBERDING: There is no evidence at all right now that border communities are at any particular risk of SARS. Let me just stress again that the situation in Toronto is one where all of the known cases of SARS can be linked to the initial cluster of individuals who were infected from their travels to Asia. And so we can explain all the cases there by following the epidemiology of this person was exposed to that person, and then that person was exposed to this person. So we're not seeing evidence of unexplained cases of SARS anywhere in that community. It's very different from the situation in Hong Kong.

And right now there is no suggestion that people living in the borders or traveling through the border communities are at any greater risk, so we're not implementing any special monitoring in those regions other than what our local and state health officials are already doing, which is to support this whole enterprise around alerting early detection, casting a broad net, isolating presumptively until more information is available if someone is suspected of the disease, and then working that from that point.

Let me take a telephone question, please.

AT&T OPERATOR: We do have a follow-up question from the line of Rob Stein with the Washington Post. Please go ahead.

QUESTION: Yeah. Hi, Dr. Gerberding. I have a question about the genetic analysis of the sequence of the virus. I was wondering if you had seen any evidence of any mutations occurring yet?

DR. GERBERDING: I think it's important to first of all acknowledge that we have sequenced an isolate here, and we'll be able to sequence more isolates as we go forward. The isolate sequenced in the United States was not exactly the same from the same patient as the isolate sequence in Canada. Amazingly, these isolates were very close in their genetic composition, suggesting that there's high conservation as the viruses move from at least those early stages of transmission. In other words, they are very, very similar. They differ in just a small number of base pairs, and in fact, that could just be by small mistakes in the laboratory or just very small changes in the virus which is typical for an RNA virus.

So the sequence data is really not at this point allowing us to interpret anything about why some people are getting sicker than others, or is the virus evolving enough over time to account for differences in the clinical presentation or the epidemiology of spread. We need to sequence more viruses, and that will be a longer term aspect of our overall investigation.

Let me take another question from the phone. I apologize to the phone callers who were not able to get into the call, and if you contact our press office, we'll do everything we can to make the transcript and our introductory remarks available to you as quickly as we can.

If there's another phone question, I'll be happy to take it at this time.

AT&T OPERATOR: Yes, ma'am. Thank you. From the line of Linda Carroll with MSNBC. Please go ahead.

QUESTION: Hello, Dr. Gerberding. Are there any specific things that emergency rooms and hospitals should be doing to be prepared for possible SARS patients?

DR. GERBERDING: The advice to the health care delivery systems is, first of all, have a mechanism in place to isolate people in airborne precautions at the point of initial encounter in the system. But if a person unexpectedly shows up in a clinic or an environment where such an isolation room is not available, the next best thing is to ask the patient to wear a mask if they're coughing and can tolerate a mask, and if they are having contact with health care personnel, the health care personnel should wear an appropriate--95 or better--respirator until the evaluation is complete.

In most settings, especially if the patient can call ahead before they arrive in the health care system, our emergency rooms are equipped with this kind of isolation capacity because it's the same thing we would use for a patient with chicken pox or, say, with suspected tuberculosis. And

that simply means the patient is placed in a room that has a special ventilation system so that the air is not circulated, infecting other patients or clinicians, and the appropriate masks are worn by the health care personnel who have contact with the patient.

Some emergency rooms have implemented just as a matter of course a routine question on the triage form that asks have you returned recently from any of the following areas, are you a traveler and aware of at least one emergency, and it also has created a large billboard, and many facilities are providing additional information on patients at the point of initial contact just to make sure that they've screened and have looked at [inaudible]. This is a little bit like looking for a needle in a haystack right now because of the millions of people who are seen in emergency rooms, a very small number of them are going to fall into a category where they would be suspected of SARS. So I think it's a very remarkable effort and achievement on the part of the people involved in this from the clinical standpoint, that they've been able to gear up and do this so quickly. And I think it's one of the things that's really helping us --

Another telephone question, please.

MODERATOR: We have a question from the line of Miriam Falco of CNN. Please go ahead.

QUESTION: Hi, Dr. Gerberding. I have a couple of questions. One, can you tell us how many of the 39 probable cases in the U.S. are close-contact? And also, can you tell me how often are folks being taken off planes as suspected SARS cases, like we had a few weeks ago when we had the plane in San Jose, even though it turned out nobody had SARS on that plane? Is that a frequent thing, and we're not hearing about it? Or is it very rare that people are flying into this country and before they even get to the gate folks think that they might be sick and they're being put aside?

DR. GERBERDING: With respect to your first question, how many of the probable SARS patients are travelers and how many were infected through exposure once they've arrived, 37 out of the 39 probable patients were patients who had recently traveled to an affected area. One of them is a health care worker, and one of them is a close contact of a suspected SARS patient. I'll ask Dr. Cetron here, who is in charge of our quarantine operations for SARS, to answer the question about the frequency with which we're actually boarding planes or ships and assessing the presence of SARS among passengers.

DR. CETRON: Thank you. I would characterize it as a relatively rare event considering the number of flights that public health officials have been meeting arriving from affected areas, which is over 2000 flights in the month that we've been at this. And in probably less than a dozen instances have those encounters happened on flights that you saw in the air. And the other thing is, we should point out that more and more of the airports in the SARS-affected areas are implementing WHO-recommendations to do pre-boarding screening using questionnaires and questions, and this helps keep sick people off airplanes and helps that process as well. Whereas a combination of those two measures in place, I think we're seeing that much less frequently.

DR. GERBERDING: We have a question from a reporter here in the room.

QUESTION: Can you elaborate on the places of social containment and what that means, what the definition is? And also I was wondering about, can you elaborate on the fatality rate? Is that a little higher than what was previously announced?

DR. GERBERDING: With respect to containment, we're very careful not to label any particular area as "contained," meaning that it's over and no one needs to be concerned anymore. But there are places, such as Taiwan, where there were some patients with SARS evaluated and

diagnosed that were not seeing change of transmission on an ongoing basis and we're certainly not seeing new cases popping up in the community.

There are some parts of the world where we haven't heard about new cases, but you need to be confident that not only is the health care delivery system able to alert us and notify us when they have a suspected case, but also that we don't miss community cases, especially in areas where people don't have the same kind of access to more contemporary health care facilities.

So containment at this point in time is a relative term. It really means the absence of known ongoing transmission in the community. And you'd like to be optimistic about those areas, but time will tell whether or not the problem is truly abated in those regions.

With respect to the mortality rate, I mentioned earlier that the postulated mortality rate right now is 5.9 percent. Thankfully, we have had no deaths in the U.S. up to this point in time. You may see the mortality rate go up as we go forward, but it is in part because the definition of SARS will become more precise as we begin to utilize laboratory tests or as some of the people initially included in the definition are ultimately found through virus testing or other kinds of antibody testing to have something else. So the denominators shrink, and the number of deaths may stay the same, so obviously the number will get larger.

Other reasons for that may include that individuals that were not initially known or thought to have SARS right now being captured and included in the [inaudible] observation in China. So there are lots of aspects of the numerator and denominator in calculating the death rate, and there are lots of different ways to present that information. WHO is choosing a very simple method for accounting for the deaths, and will be, obviously, interested in, again, what are the factors that determine who has severe illness and what are the risk factors that seem to be associated with the people who die or have the worst outcomes.

But if you see the death rate going up, it's not necessarily because SARS per se is getting worse. There are other epidemiologic factors that are complicating that as well.

QUESTION: Dr. Gerberding, thanks a lot. This is John Linn from [inaudible]. I have two questions. Many Chinese people have tried to seek help from traditional Chinese medicine. And do you have some comment on the effectiveness of these, all kinds of treatments from traditional Chinese medicine? And the second question is some people in Beijing have tried to use vinegar for disinfection purpose. Do you have comment on the effectiveness of that?

DR. GERBERDING: Thank you. You know, I trained in an environment where many of my patients used traditional medicines, and I have a very healthy respect for the value that those alternative approaches can have. And I don't think we had formally discussed at CDC whether or not some of these compounds could or should be included in the antiviral compound testing that we're doing, but I think it's something we definitely need to look into, and I thank you for bringing it up.

Right now I don't have information from any source that tells us one way or another whether any of these approaches have scientific value, but Dr. Hughes and I will certainly suggest that.

With respect to vinegar as a disinfectant, that would really not be a recommended disinfectant. It's an acidic compound, as you know, and there are many things that wouldn't survive well in it, but a lot of things do. And I think soap and water is a very good disinfectant for most purposes, and if you need to have a specific antibacterial compound, there are other products that would be much more reliable including alcohol.

Let me just take one phone call question, please.

AT&T OPERATOR: And ladies and gentlemen, we now have a question from the line of John Lauerman at Bloomberg News. Please go ahead.

QUESTION: Hi. Thanks for taking my question. I also wanted to touch on the issue of masks. We see a lot of people wearing masks. I know that the N95 masks have a very good record, but what about other masks? Do you think the masks--is there any suggestion or evidence that the masks in use may be helping to slow down the spread of the virus? Do we have any knowledge about that?

DR. GERBERDING: It's very important to understand the two main kinds of masks that are relevant in this particular illness. The surgical masks, those simple, inexpensive square masks that you can buy almost anywhere and tie behind your head like you see in ER, those masks are useful in containing the droplets that you might disseminate if you talk, cough or sneeze. So they're very good at filtering out large, relatively large particles of moist materials from your respiratory system, and that's the reason why we recommend that those masks be used for patients with SARS because it contains their secretions and prevents them from being disseminated in the environment.

The N95 respirator that you're talking about is a much more efficient mask. And by that I mean it filters out particles that are much smaller than the kinds of droplets that are the source of infection. These masks protect the breather from very small dried-out particles that are airborne, and so their filtration is much more effective. And the designation N95 is the standard of certification from the National Institute of Occupational Safety and Health. That means basically they are capable of filtering out at least 95 percent of particles of a particular diameter under pretty stringent testing conditions, meaning they're very good masks.

But there are also N99 masks and N100 masks that are even more efficient than N95. So we know from the research that's been done in the health care environment and at NIOSH that N95 masks are an appropriate level for protection against airborne infections.

The only problem with them is they don't work well if they're not exactly fit to your face, because if you're breathing through them and air is leaking in around the sides, you might as well not have a mask on at all. And so one of the caveats about using an N95 mask is that you really need to know that it's properly fit and that's something that a trained professional really is in the best position to help you with.

We don't recommend N95 masks for the general public. We don't recommend N95 masks for patients. We are recommending surgical masks for patients if they're well enough to wear one, and we're using those N95 masks in the health care environment in hospitals where we've got sick patients most likely to be aerosolizing relatively high concentrations of infectious material.

I'll just take my last question here from the reporter on the floor.

QUESTION: Thank you very much, Dr. Gerberding. You said a moment ago, in discussing the mortality rates, that we may say the mortality rates calculations go up as the definition of SARS becomes more precise. Following up on that, can you say at this point when you expect laboratory confirmation to become a part of the case definition of SARS? Can you forecast how long it will be or how short a time it will be before the tests are out there widely enough to use that?

DR. GERBERDING: Getting laboratory confirmation of a case of SARS depends on us having very high confidence that we understand the accuracy of the test. And we are right now circulating some draft suggestions about what a laboratory confirmed case definition would look like. We need to get input from our partners in the public health laboratories, and some of the epidemiologist at the state and local level as well as the FDA just to make sure that everyone

agrees that this is the appropriate strategy. And it's just a little premature to use it that way, but we're pushing for that on the fastest possible track because we think that would add an additional element of accuracy to our understanding of the epidemic as well as the care and treatment of individual patients.

Let me thank you for your input and your attention. And again, for the callers on the phone, we regret that it was difficult to dial in today, and we'll do everything we can to get the transcript available to you as quickly as possible, and as we learn more, we'll tell you more.