National Jewish Health
Breathing Science is Life.

Transcript of Press Conference

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OPERATOR: Good afternoon and thank you all parties for patiently standing by. I would like to inform you that your lines will be on a listen-only until the question-and-answer session of today's conference. Today's call is being recorded. If you do have any objections, you may disconnect at this time. I would now like to turn the conference over to Mr. William Allstetter, thank you sir, you may begin.

WILLIAM ALLSTETTER: Good afternoon, ladies and gentlemen, welcome to National Jewish Medical and Research Center, not just to a Denver Hospital. We are about to have a press conference here. Let me lay it out for you. I'm William Allstetter. I'm the Director of Media External Relations. First on the podium will be Charles Daley. He is the head of our infectious disease division here at National Jewish. And then by phone, it will be Mitchell Cohen from the Centers for Disease Control. And then I will have a short statement afterwards from Andrew Speaker, and then we will open it to question-and-answer, first here in the room, and then we will take answers from the phone lines.

So without further ado, here is Dr. Daley.

CHARLES DALEY: Well, welcome back to National Jewish. We called today's press conference because we have some news that we would like to share with you regarding Mr. Speaker's case. Based on extensive testing of multiple isolates of the organisms that we have cultured from Mr. Speaker, we have been able to demonstrate that he does not have XDR TB or extensively drug resistant TB. He does have multi-drug resistant TB. However, this distinction is very important, for two reasons. Number one, it allows us to change the way we treat him in that regard. We have put surgery on hold for the time being, while we try to build a strong treatment regimen with drugs that we did not initially think we would have available for use. I think the second and very important point here is that if someone has become infected by Mr. Speaker, we hope that has not happened, but if it was to happen, we now have some drugs available to try treat them and prevent them from developing TB.

So there are two implications here. One is for Mr. Speaker and our ability to treat him. And second, for any potential contacts who could have become infected. We now have regimens available to also treat them.

I think it's very important for us to think about how this could impact those people who would have been - could have been infected. And so I wanted to say a couple of things about that. Many of the people who were out there, and may have been exposed to Mr. Speaker have been hearing that there are no drugs available, there's nothing that we can do for them. And I think this is a very important finding, in fact, we do have something that we can do for them. We can potentially treat them with oral antibiotics that are potent antibiotics to prevent them from progressing to disease. So I'm hoping that those who have been in contact or hearing me and know that there are some things that we can do for them, if in fact, they did become infected.

And then, finally, to reiterate, that for Mr. Speaker, we now have a regimen that is more potent, and therefore, we believe his prognosis is better. And we will now revisit the issue of whether or not he does indeed need surgery or not. And that will take us a little bit longer. I don't know when that decision will be made, but we will be continuing to revisit that over time.

So I would like to stop there, and let my colleague at the CDC comment.

ALLSTETTER: OK. And from the phone lines, can we bring on Dr. Cohen.

MITCHELL COHEN: Well thank you, and thank you Dr. Daley. I'm Mitch Cohen, I'm the Director of the Coordinating Center for Infectious Diseases at CDC. On behalf of CDC's Director Julie Gerberding who is away this week and could not be here, I'd like to thank Dr. Daley and the National Jewish Medical and Research Center, for inviting us to participate with them today.

CDC really values its partnership with Dr. Daley and his colleagues, who are committed as we are to finding better ways to diagnose, treat and control this serious but often underestimated infectious disease.

As Dr. Daley just described, recent laboratory test results from National Jewish Hospital and confirmed at CDC's laboratory show that MDR TB is the predominant bacteria in this patient. This is a positive development as was mentioned by Dr. Daley for the patient, suggesting that some of the second line TB medications may have effectively treat this disease. However, MDR TB remains difficult to treat. It will require approximately two years of medication and relatively toxic drug regimens to achieve the desired outcome, very different from drug-susceptible TB.

When different specimens from one patient are tested for their drug susceptibility and the results are mixed, the treatment regimen is chosen that is most likely to be effective on the most prominent TB bacteria. And in this patient, the prominent bacteria appears to be MDR TB. His physician must take all of this information together and decide what is the best course for treating the individual patient.

Now Dr. Daley has described the importance of these test results for the patient's medical care. I'd like to just briefly talk a little bit about the public health implications of the additional test results. There is a tendency to want to think about XDR TB and MDR TB as two different illnesses. In fact, they are only describing a level of drug resistance found in the bacteria attained from the patient specimen. It's important to remember that this patient has multi-drug resistant TB, which is a significant public health concern. MDR TB is a rare version of TB. It is resistant to the most commonly used drug therapies. This is a serious illness that can be transmitted to others, and thus put others at risk for getting a difficult-to-treat disease.

Therefore, regardless of the revisions of the patient's drug susceptibility at this time, the public health actions that CDC took in this case, and are continuing to case - to take are sound and appropriate. After all, the public health response to drug-resistant TB infections, either MDR TB or XDR TB is the same under the World Health Organization's TB and airline travel guidelines that were published in 2005.

CDC took public action when we were notified that the patient had drug-resistant tuberculosis and had traveled on the transatlantic commercial air flights. Without question, people with these infections should not be flying on commercial airlines and if they do, an effort should be made to notify and evaluate passengers who are seated near them. Therefore, CDC continues to recommend the follow-up and retesting of passengers and crew who traveled on the transatlantic flights with this patient. CDC will continue to ensure the well-being of patients who may have been exposed and infected by this patient.

Just a few words about the CDC laboratory and the particular test that we are talking about. On CDC's national TB reference laboratory drug susceptibility testing of mycobacterium tuberculosis is performed using a method that's called the augur proportion method, a method which is different than used at National Jewish. The augur proportion method is the approved standard of the Clinical and Laboratory Standards Institute. CDC acts as the TB reference laboratory not only for the United States but also internationally. And CDC continues and will continue to review its laboratory testing procedures. Anytime there is a concern or a conflict with the test result, we will automatically review those results and see whether or not there really are clear explanations as for the differences.

In this case, CDC performed drug susceptibility testing on a subculture obtained from a bronchoscopy, when we found resistance to both first- and second-line TB medications, meeting the definition of XDR TB. The original bronchoscopy specimen obtained by a hospital in Atlanta is no longer available for retesting. All subsequent specimens available for testing have shown MDR TB from the induced sputums.

CDC continues to believe that the ideal way to ensure the well-being of persons with XDR TB, MDR TB or susceptible active TB, their families, their communities and the traveling public is to enter into a cooperative partnership with the patient. CDC is grateful for the strong partnerships with state and local health departments and private healthcare facilities in addressing this important infectious disease concern. In closing, I would again, especially like to thank Dr. Daley and National Jewish Medical and Research Center, for their continuing collaboration with us. Although we wish this case of resistant TB had not been forced into the public domain, it does allow us the opportunity to discuss the limitation of current diagnostic tools and to remind the public that each year 14,000 cases of TB are diagnosed in the United States and an estimated 8.8 million occur annually around the world. Tuberculosis clearly remains a significant public health concern in need of attention, vigilance and action to mitigate health, suffering and death. Thank you.

ALLSTETTER: OK. And now I will read a statement from Andrew Speaker.

Andrew Speaker writes, I am incredibly relieved that the multiple test results made public show that I don't have extensively drug resistant tuberculosis. The truth is that my condition is just the same as it was back in early May, long before there was a huge health scare, and back when I was allowed to carry on with my daily life and was told I was not a threat to anyone.

My understanding is that the doctors here have tested my samples taken from Atlanta, New York and here at National Jewish going all the way back to April. They all have come up exactly the same. They all show that I do not have, nor have I ever had, extensively drug-resistant tuberculosis. It has been an incredibly long and difficult month, but today is a day of relief for both myself and my family. The international panic that was created - excuse me - let me start again. For the international panic that was created after my misdiagnosis and the way my case was handled, I can only hope that this news helps calm the fears of those people that were on the flights with me. However, it doesn't change the fact that one-third of the world has TB and it accounts for one-quarter of the world's preventable death. I hope that the attention TB has gotten lately results in more being done to help eradicate one of the world's deadliest killers. This is not a disease that is bound by socioeconomic status or geographic location and it must be addressed accordingly.

It is true that, at times, the government must act to protect the public's welfare and balance personal liberties with public safety. But a popular quote says it well that quote, With great power comes great responsibility, unquote.

In the future, I hope they realized the terribly chilling effect they can have when they come after someone and their family on a personal level. They can, in a few days, destroy an entire family's reputation, ability to make a living and good name.

On a personal note, thankfully my treatment will now be based on less toxic drugs than my earlier misdiagnosis dictated. While my road to treatment has gotten easier, I hope that this news doesn't quiet the serious attention that I have come to discover this disease deserves. I truly appreciate all of the kind thoughts and prayers that have been expressed. By being transferred to National Jewish, I was given something that every American should be entitled to, the best possible chance for treatment and recovery.

The fact is that we can now act to combat and treat this global killer, or be forced to react later. I believe that God has a purpose in everything, and I pray that out of this will come greater awareness and action now, when making a difference is still a choice and not a threat to our way of life. I will have more to say later, but for now I am just grateful to be at National Jewish and thank you again for your thoughts and prayers.

OK. I think now we'll open it up questions. Dr. Daley will take some and he will also hand some off to Dr. Cohen.

UNIDENTIFIED PARTICIPANT: How does this happen, that there was a test that CDC or Atlanta hospital (INAUDIBLE) XDR, yet all of your tests said MDR. Is it time for CDC to adopt your lab procedures and protocols, versus CDC's? And are we in a difficult place, if we are relying on the CDC test...

DALEY: So the way we do it, first of all, a point of clarification, we do use the augur proportion method which is the standard. In addition, we use another method, and in this particular case, we used three methods on at least three isolates because we wanted to make sure that we were getting consistent results. And so let me just point that out, that among all of the cultures

doing it three different ways the results were consistent. So we were very sure of our results that in fact, that this was multi-drug resistant and not X(DR).

So the method that was utilized at the CDC was the method that we utilize. As you heard from Dr. Cohen, this was repeated at the CDC in the same laboratory and they confirmed our findings of multi-drug resistant disease. So I think what you're getting at is, well number one, the CDC is a very good laboratory, it's a reference laboratory, just like our laboratory is a very good laboratory and a reference laboratory.

But one of the things that I think you have to understand is that this discrepancy among results are discordant between results. It happens all of the time in laboratories that are doing drug susceptibility testing including the reference laboratories. So this is not a new thing for us to have to deal with in terms of two laboratories having different answers. And it's a frustration that we have to deal with. And in this particular setting, I don't know why the first result showed XDR to CDC and the second result and our results did not. There are a number of things that you can read about in the literature that have been written about in terms of possible ways that you could get discrepant results. Most of these are quite technical and I don't feel confident going into the technical issues.

And I don't know if I think we should let Dr. Cohen from the CDC also to respond. But first, I would just tell you that this is a weakness and a diagnostic algorithm of TB, that even in reference laboratories the state of the art is such that there's variance in results.

UNIDENTIFIED PARTICIPANT: It really sounds like there's a significant dispute between the CDC and Mr. Speaker and (INAUDIBLE) all day with this statement and the statement from the CDC. Is it not true that that's going on behind the scenes?

DALEY: I'm not sure I understand what the words dispute, what - could you be more...

UNIDENTIFIED PARTICIPANT: Mr. Speaker sounds terribly unhappy that he was misdiagnosed, the CDC is saying this was not a misdiagnosis that it's absolutely a serious disease, it's not deadly, but it's absolutely serious. Is there not a dispute over that point?

DALEY: So let me - there are several things that you bring up there. One is yes, Mr. Speaker, of course, is not happy that he was diagnosed with XDR, when in fact, he has MDR and I think that's a natural reaction from him. There is no dispute in terms of the findings because the CDC has found the same thing that we have. So we believe we're all in agreement that we're going to move forward with treatment for multi-drug resistance. You said it wasn't fatal but it is fatal. Multi-drug resistant TB is very difficult to treat. And remember that XDR TB is just a subset of multi- drug resistant TB. So this is still a serious disease. The cure rate is not as - nowhere near what we would expect with just standard TB therapy. It's much more difficult, even if we do get to that cure rate.

So this is still a problem. I don't think there's dispute in terms of the diagnosis. I may be wrong but I - not from my conversations. Dr. Cohen, would you like to comment?

COHEN: Well I agree with everything that you said. I think that we have a very significant problem in not having the types of diagnostic tests that we truly need to be able to address the challenge from TB. And that different or discordant test results in different laboratories is an important issue. That if we could working together, develop a gold standard test, that could give us a definite answer, that would be a tremendous step in the right direction, but we do not have this at this particular point in time.

The patient does have MDR TB, which is a very serious illness. As you pointed out, there are a larger percent of people with MDR TB do die. So the varying reasons as could be different test results. It could be that there were different specimens that were obtained in different ways on different days. There were different tests applied to them. There could be differences in the bacteria, in the bacterial population. So there's a variety of potential explanations. We always try to base our public health actions on the best available data. And when we find the strain of TB that's multi-drug resistant, or XDR TB, we want to take the best public health actions to try to not only consider the aspects of the individual but also to protect the public.

UNIDENTIFIED PARTICIPANT: Just a follow to that question, would it be a good idea to do the three tests before you make an announcement nationwide about a particular case, versus the one test, would that be a good idea?

COHEN: Well let me say that in an instance where you have to make a public health decision, it is better to err on the side of caution where you can reduce potential exposures and risks to individuals. And with these tests, currently, it may take as long as three to four weeks to reproduce the test. And so once you have information from a validated recommended test, it really is mandatory to take the appropriate public health action as soon as you can.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE)... samples from Atlanta... (INAUDIBLE)

DALEY: So the original, you mean the diagnostic which was from March, that is now in our laboratory as of last week.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE).

DALEY: A subculture from that was meaning that you take a portion of it and that was shipped to us. So that is currently being tested. The initial tests that we have were from a specimen in April from Atlanta, a specimen from New York City, and a specimen that was obtained here the day after he got here. So those are the three that we have tested so far. We have tested those different ways, and again, consistent results. What is pending is the one that was considered the diagnostic specimen from March, from which this XDR diagnosis was initially made. However, the CDC, as you heard, have taken a subculture from that and repeated it and do not find XDR in the subculture that they took.

So we are currently analyzing that same specimen or a subculture of that specimen. We should have results within the next couple of weeks.

UNIDENTIFIED PARTICIPANT: Dr. Cohen, given the evidence you have before you today, would you characterize your initial diagnosis of Andrew Speaker as a misdiagnosis?

COHEN: The patient has multi-drug resistant TB. When we think of TB, there is an enormous difference between susceptible and multi-drug resistant TB. When we think about the difference between multi-drug resistant TB and XDR TB, there is a much smaller medical difference. But there is very little, if any, public health difference between XDR TB and MDR TB.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE)... change the quarantine situation? I mean...(INAUDIBLE)

DALEY: Mr. Speaker was removed from the federal quarantine the first few days (INAUDIBLE). He has been under an isolation order from Denver Public Health, which is a routine isolation order that all TB patients get. And he, like all TB patients, remains under that.

ALLSTETTER: And, I think we're going to go online for a minute. Any other - some phone questions that we can address?

OPERATOR: If you would like to ask a question, please press star, one. Our first question comes from Miriam Falco, CNN.

MIRIAM FALCO, CNN: Hi, thanks for taking the question. According to the statement from Andrew Speaker, it seems that he says he never had XDR TB and from the one test from the CDC it sounds like he did. To the public, it'll look like the CDC goofed, what can you tell and tell the public in layman's terms what happened here? Did he have both? Did he - does he just have one? It seems like the overwhelming majority of tests point to MDR only?

COHEN: Well, the specimen that was examined in the first - in the first half was a different type of specimen, by bronchoscopy and the results of that test identified strains of the bacteria that we would call XDR. Now, the possibility is that the patient has a few strains of that bacteria, but the prominent bacteria that he's coughing up at this point in time is what we would refer to as an MDR strain. As I pointed out, we used an approved test and from a public health perspective the difference from XDR and MDR is very, very small.

ALLSTETTER: OK, another question from the phone.

OPERATOR: Maggie Fox from Reuters, your line is open.

MAGGIE FOX, REUTERS: Thanks. I just want to follow-up on that. I mean, is it possible that he still has some XDR way down deep in there and that you're going to find out in two years that you're - no, and do you guys know anything about the - about the life cycle of these MDR and XDR bacteria? Is it possible that you'll, you know, he'll go through all this treatment and he'll still have some in there and will that become a problem down the road?

COHEN: Let me ask Dr. Daley to comment on that first.

DALEY: If you take any population of micro-bacteria and tuberculosis, there is a certain probability that you will find mutations in certain strains that confer resistance, but they're rare. And we know from decades of treating tuberculosis, that it's drug-susceptible or multi-drug resistance. We made decisions based on the predominance of evidence which is the predominant organism that we isolate. So in this case we have multiple cultures all showing the same thing, MDR, we have the initial one culture but we've never seen that pattern again.

So, if that was a mutant that was there, I don't know where it is now because we can't find it. Could there possibly be a few organisms or another strain in there? Possibly, but it's very, very few in number and we know that treatment success in tuberculosis is really based on the predominant organism, not any theoretical or potential mutate - mutant strains. So, we - but we always base our decisions - clinical decisions on that predominant organism, which right now is clearly MDR TB, in my opinion.

COHEN: Well, I think that Dr. Daley has answered the question. I think it certainly is possible that there could be a small proportion of strains in a specimen. In fact, we in specimens do occasionally identify patients who have more than one strain of TB in their specimens. So, it's - it is always a possibility and it's one potential explanation for the test results.

ALLSTETTER: OK, another question from the phone line.

OPERATOR: Mike Stobbe from Associated Press, your line is open.

MIKE STOBBE, ASSOCIATED PRESS: Hi, thank you for taking the question - two I guess. First, does - did - was Bob Cooksey involved in the analysis of the bronchoscopy? And also, I just want to clarify, did you say that the subculture of the bronchoscopy analysis that that was lost? What happened to that? Why can't you find that?

COHEN: The - the first question is that the - Dr. Cooksey was not involved in any of these assays that we're talking about today. The normal laboratory procedure is that when you receive a clinical specimen is that you do a subculture of it and you save the subculture and discard the original specimen. So that is what's happened here and what is being tested at this point is a subculture. Now, if you have a original specimen that has a small number of different bacteria and you obtain it at subculture you may or may not get an adequate representation that you have more than one strain.

ALLSTETTER: OK, another question from the phone line.

OPERATOR: Helen Branswell, the Canadian Press, your line is open

HELEN BRANSWELL, CANADIAN PRESS: Hi, thank you very much. I was hoping I could follow-up on this with a question for probably Dr. Cohen and then one for Dr. Daley. Dr. Cohen, you know, I think a lot of people listening to this are going to think that, you know, some of these susceptibility tests are like a pregnancy test, you know, where you get a pink, you get a blue, you get a yes, you get a no. It's not quite that simple, is it? And, if you're talking about clones did you say that the predominant representation in the specimen that you guys tested and came up with a diagnosis from was predominantly XDR? And, I guess my question to Dr. Daley would be, if you guys had done this test and come up with that, you know, perhaps aberrant reading, but at the same time a reading that you had to take very seriously, what action would you have taken at that time?

COHEN: Well let me - the nature of the test is that we examine the plates and compare the number of strains that are growing in the presence of the antibiotic with the number of strains that are growing in the absence of the antibiotic. And, in this case of two resistances, we had 25 percent resistance. So that means that the proportion of resistance - of resistance strains were primarily MDR and a smaller proportion were XDR. And, the definition for resistance is more than one percent. So by the nature of this test, the strains would be called resistant and the percentage of them was a smaller percentage than the MDR strains. So, you had an initial question if you would please repeat that?

BRANSWELL: Yes, my question for Dr. Daley was if your hospital had done the test on this original specimen and you had come up with a ruling or a test result that showed XDR clones, what would you have done?

DALEY: Well, so first of all, we do all our testing two different methods in parallel. So, I don't know, would we have found in what method we found MDR, the other method XDR, I don't know what we would have found. Assuming that both methods found the same thing and that we classified this as XDR, I mean our - we're reference labs so we call the referring physicians in public health and let them know that they have an XDR case. It could be that would - we're P (ph) testing the same kind of scenario would out - would play out. But, the standard approach would be this is XDR, and then it would be taken from that point on by public health and dealt with as such.

COHEN: Let me just respond because I remember now the other question which was the concept of the test itself. And, I think, you know, the issue of a pregnancy test is a good example of what this test is not. You do not get a yes/no answer from it, it's a very complicated test that's complicated by the fact that TB grows so slow and that affects many of the kinds of regular tests that we use to determine susceptibility and other kinds of bacteria. So TB tests by themselves are sort of in a world of their own which increases the complexity and difficulty.

ALLSTETTER: OK, why don't we take them from the room here?

UNIDENTIFIED PARTICIPANT: My question is - well it's actually two parts. How common is the MDR test and what are the test rates? You talked about the test rates being lower, what are they?

DALEY: When you say how common are MDR tests, you mean how many places can the run...

UNIDENTIFIED PARTICIPANT: Right.

DALEY: Oh, there are many places in the United States that do drug-susceptibility testing. Most of them do what's called testing to the first line drugs, those are the ones we typically use in drug susceptible disease. If in fact we find a drug that's resistant, then they go to another laboratory that does the second line testing, which is more complex, as we're hearing about and in terms of those reference labs, typically those are large public health reference labs, the CDC, ourselves is a not for profit reference lab. So there are a number of places to get first line, fewer places to get second line questions.

UNIDENTIFIED PARTICIPANT: ... question for probably the CDC but I'm curious whether or not any of the people who were exposed to the disease on the flight have come back tested positive?

DALEY: I don't know, Dr. Cohen, did you hear that question?

COHEN: Yes, I did. Let me - let me mention the other question that was asked about - there were about 125 cases of MDR each year in the United States out of the 14,000 or so that occur. If you have a fully susceptible strain of TB our chances of being able to cure you are somewhere between 95 and 97 percent. But, if you have a MDR screen of TB, the chances of being cured fall to about 70 percent and that affects DR. There are limited numbers of cases, but the chances of being cured probably are... 30 to 40 percent. We are still looking at the various people who had exposures and until the test results are completed, which will probably be the end of June, July or early August we won't be able to determine whether or not anyone has actually converted their skin test. We would anticipate that we might find as many as four percent of people who have a positive skin test anyway that did not relate at all to the exposure.

So, on that one flight alone there might be anywhere between say eight to 12 people who have a positive skin test. That was one of the reasons why it was so important for people to get two tests, one very early after the exposure and then one eight to ten weeks later to determine whether or not their positive test was a new phenomena, not something that they had had happened to them a long time ago.

DALEY: I want just to clarify something about those tier rates. When you look at the literature, the literature is describing patients that are not like Mr. Speaker. These are patients almost all of whom have been previously treated in... therapy, they also have an extensive disease, smear positive disease and those tier rates really don't reflect what we would expect in this setting. Even in San Francisco, before we came here, we had cure rates of 90 percent in MDR TB. But, I just - because we had patients who were more attentive than Mr. Speaker and not what most of the reference centers see who reports their results, including us. So, I just want to - I think we're much more optimistic in terms of response rates than some of the numbers that have been published.

UNIDENTIFIED PARTICIPANT: For example, at National Jewish, when your MDR cases what is your success rate on your MDR cases over the last few...

DALEY: So those are in the 70 percent range, which is what he was probably referring to. But - but again, these are patients that are - that are the worst of the worst in terms of drug-resistant disease.

UNIDENTIFIED PARTICIPANT: Dr. Daley, has the patient been able to leave the hospital at all and with this new diagnosis...

DALEY: The patient has not been able to leave the hospital. He is still on an order of isolation from Denver Public Health. And, until they remove that he cannot leave the hospital grounds. He has been able to leave the hospital building and walk the grounds, but not leave the premises. In terms of his - this really is the question I don't think we answered fully earlier about infectiousness. We have multiple sputum cultures pending, specimens that are pending, we deem someone with MDR TB not infectious when those cultures are negative. So we're still waiting to find out if he's infectious. We don't - we don't yet know, we will hopefully know though in the coming weeks whether or not these cultures are positive or have they already turned negative.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE)... protocols as a result of this incident?

DALEY: Dr. Cohen, did you hear that?

COHEN: No, I did not.

DALEY: Has the CDC been contemplating changing its protocols after this incident?

COHEN: If you're asking about the laboratory protocols, we obviously will be reviewing these as we do anytime there's any conflict. But, the protocols that we're using are the recommended and accepted protocols for this particular test. So, unless we find something that in review indicated need for the change, we would probably continue. You know, again with respect to using this information, we use this information with abundance of caution to try to be considerate of the individual but protect the public because a disease that is difficult to treat is one that we want to prevent people from getting exposed to in the first place.

UNIDENTIFIED PARTICIPANT: I just had a question to make sure I understood what happened and (INAUDIBLE) but XDR with a minority (INAUDIBLE) there's no XDR has been done in that...(INAUDIBLE)

DALEY: Not quite what he said, but Dr. Cohen, could you hear?

COHEN: No, I couldn't.

DALEY: Let me try to rephrase and answer it. The question was back to that original specimen, and regarding the culture of that and the question was, was XDR and MDR found in that specimen with XDR being the minority of the organisms? And, I'll answer but let him clarify - the - no, so in the original specimen that was obtained in March from bronchoscopy, a subculture was sent to the CDC which was - underwent testing, that is that specimen that was shown to have XDR TB. They did not find XDR and MDR really in the specimen. I think his description of how you interpret the test, it's a very technical and complicated test and in trying to simplify it, I'm not sure that happened.

So, they found XDR TB, the way if you follow the protocols that are in place that the CDC here and elsewhere, that was deemed an XDR isolate and they did not and could not with what they did say whether it was a mixture of infections or not.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE).

DALEY: They could not tell you that without doing something called genotyping which is when you look at different strains and you look at the genes. And, to say it's a mixed strain, either they have different genes or you were able to clearly separate different cultures and repeatedly grow them up into direct susceptibilities over and over and they're always the same results. That can't be done in this setting, we don't have the original specimens because that was - that was thrown away at the health facility, which was perfectly OK for them to do that.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE)... was that? Which test was...(INAUDIBLE)

DALEY: Since that first test by the CDC, all subsequent cultures have in different laboratories have found multi-drug resistant disease, not XDR. And again, just make sure you understand the difference between multi-drug resistant and XDR. Multi-drug resistant TB means resistance to isoniazid and rifampicin, our two best drugs. You could also be resistant to six, seven, eight, nine more drugs but still not be called XDR TB. They're called X - your strain is called an XDR TB strain if you have MDR TB, meaning isoniazid rifampicin resistance plus resistance to at least two other drugs. Fluoroquinolones, which are very potent drugs that are very helpful in treating these patients and one of three injectibles that are also potent and very useful in treating these patients. I think if you get down to these kind of subtleties it's important to understand that the difference between MDR and XDR is it can be quite subtle in terms of the number of drugs.

So you could have six-drug resistant TB and not have XDR or you could have four-drug resistant TB and have XDR. The point is that there - as we've heard already, there's not a lot difference between XDR and MDR TB in the sense that the public health response is the same no matter what. It makes a big difference to me, as a clinician, however, because I can pick a number couple of drugs up and actually add them to the treatment regimen and improve the chance of cure.

So, from a clinical perspective this is important, from the public health perspective, no, there's no real difference between MDR and XDR. Dr. Cohen, anything?

COHEN: I couldn't have said it better, thank you.

UNIDENTIFIED PARTICIPANT: OK, we'll go to...

UNIDENTIFIED PARTICIPANT: (INAUDIBLE).

DALEY: The first sample was tested again by the CDC and their results confirm our results that there was MDR present, but not XDR levels of resistance.

ALLSTETTER: OK, I think we're going to go to the phone lines, questions from the phone callers.

OPERATOR: Anita Manning, USA Today, your line is open.

ANITA MANNING, USA TODAY: Hi, thank you. I am still a little confused about the public health response to this because earlier we were told that it was on May 10th that Mr. Speaker was informed that he had multi-drug resistant TB, but the CDC

and the public health machine didn't go into operation until May 22nd when the XDR TB result came back. If these are both public health threats, why wasn't the action taken sooner to try to trace him and keep him off airplanes?

COHEN: You know why, I think the probable correct date is May 18th when we were informed that there was a patient who had multi-drug resistant TB who had traveled internationally. And, that was the point in time where we became engaged in this. Prior to that, both the local health department, the county health department, the state health department and his healthcare providers were involved in discussions with the patient. But, the CDC became involved formally on the 18th of May.

ALLSTETTER: OK, next call - next question from the phone lines.

OPERTOR: Larry Altman (ph), New York Times, your line is open.

LARRY ALTMAN, NEW YORK TIMES: Yes, several questions come out of this. First of all, someone described Mr. Speaker now has coughing, in the past he's been described as asymptomatic. So, has his condition changed and number one. Number two, have you been able to match his strain with any others found elsewhere? Earlier you said that there had been no way of matching - that there had been no match between Mr. Speaker's (INAUDIBLE) at CDC but how about a more extensive testing? And, how would you - given what you said earlier, how would you now treat a contact if such a contact was found to have been infected by transmission?

DALEY: Dr. Cohen, I'll answer the first and maybe third and give you the second?

COHEN: That would be fine.

DALEY: No, he is not coughing. I don't know where that came out, he is not coughing and he has never coughed. We have induced cough just to get sputum specimens because we can't get them otherwise. So, we have to induce coughing to be able to collect the specimen to test. In terms of the third question regarding how would we treat someone who had been infected? Well, see we now know we have the fluoroquinolones and by definition XDR TB meant there was resistance to the fluoroquinolones. The fluoroquinolones are all drugs easily available, well tolerated that have significant potency against tuberculosis. So that opens up the ability to use a fluoroquinolones, preferably one of the more potent ones to treat patients - people who may have been infected. I think that we would want to discuss potentially other options and some of these people we might try two drugs. But again, we now have a list of drugs available that were reportedly resistant initially that we now know are susceptible. So, we have multiple options, even if someone didn't tolerate one, we would have a second option available.

COHEN: I think this is - it really accurately reflects one of the public health's dilemmas of a person with multi-drug resistant TB because it raises all of these questions about what kind of medicines can you give to prevent them from becoming ill which is a critical both clinical and public health intervention and truly complicates it. It certainly indicates our need for better tests to be able to differentiate what people are infected with the nature of the strains and its characteristics and better ways of treating it.

As has been pointed out, this is a fairly rare disease, and so there is not a great deal of information about the effectiveness in prevention with many of these agents. With respect to the strain, we've looked at about 25,000 isolates from the United States and find no match to it. And, so far we have not had any reports from colleagues abroad that there has been a match. It is related, but not a match to a strain that is distributed in different parts of the world. But, so far we've not found any exact matches.

ALLSTETTER: OK, shall we take another call - question from the phone lines?

OPERATOR: Allison Young, the Atlanta Journal, your line is open.

ALLISON YOUNG, ATLANTA JOURNAL: Hi, I have a couple of questions, one of them is for Dr. Cohen. Hindsight obviously is 20/20 and I'm wondering if you can talk a little bit about knowing what is known now with current tests, would CDC have been

as public as it was holding an international press conference, sending out the alerts in such a public way as it did, if it knew what it knew now and using the federal isolation order for the first time in 40 some years? And then my question for Dr. Daley is what impact has it has on Mr. Speaker's treatment that he was on a course of treatment in Atlanta, stopped that course of treatment, and that you all began this other form of treatment and now are being able to use some of these drugs you thought weren't available to you?

COHEN: Well, let me - let me start first. I think that we always will have to act on the very best information that we have available at that time. A person with multi-drug resistant TB would be treated the same way as a person with extensive drug-resistant TB. So, the same measures would be indicated in addressing this type of a problem.

DALEY: Regarding his management, when Mr. Speaker arrived in May, the direct acceptability (ph) data showed that he was susceptible to two drugs, two of the drugs that were available to treat tuberculosis. So, that was a difficult challenge. We began a treatment regimen, some of it was guesswork based on our experience here because we were going to be testing some other drugs that are not typically tested in even reference laboratories. We did that, and in fact we were right - we guessed right, he was susceptible to those drugs.

So the initial regimen was put together based on the two drugs we knew he was susceptible to on the first report plus our guesswork that turned out to be correct of additional drugs that we were testing. And now, what we have - our new data that had been really been compiled over the last few weeks, because this takes a long time to do these tests, but we now know that we have multiple other drugs to work with. So, we went from the end of May two drugs to basically all but three or four, a total - a very big change in terms of our ability to treat him.

So the - as I pointed out early on, this has had significant impact on our ability to put together a regimen with more standard TB drugs, with known toxicities as opposed to doing what we thought we were going to have to do was just to use drugs that are more toxic and we're not sure how...(INAUDIBLE)

ALLSTETTER: OK, another phone question?

OPERATOR: David Brown, Washington Post, your line is open.

DAVID BROWN, WASHINGTON POST: Yes, thank you. Can you also identify yourselves by name because it's hard for us on the phone to tell the difference. I have a whole bunch of questions but I thought the dogma is that if you have a highly susceptible strain that you don't kill, it will in fact grow - a highly resistant strain and if you don't kill it, it will grow out and become the dominant strain.

So, how does that dogma square with your statement, Dr. Daley, that you treat for the majority strain rather than some of the minority ones? And then, someone else - I guess it was Dr. Cohen mentioned that there was present in some sample and I guess it was the original CDC sample, both XDR and MDR but in some sample the XDR didn't get to - there wasn't enough of it or it wasn't - there weren't enough - it didn't count for a large enough percentage to be classified as X

And then my other question is, the original sample that was thrown away, was that done by the Fulton Health Department? And I take it they found MDR but didn't have the capability to test for XDR?

DALEY: Dr. Cohen, do you want to take those last two and I'll take the first?

COHEN: Yes, I think that that is one possible explanation of what transpired. I think this concept of having XDR and MDR in the same specimen is logical extension of having an initial test which gives you an XDR response, and then in repeat and identify it as being M(DR) So that is one possible explanation of how this occurred.

I would actually have to check in to see who was actually responsible for the care and handling of the specimens, but in many laboratories it is routine to do a subculture and to discard original specimens and only to save the subcultures because there may be other things present that could overgrow and ruin the specimens and a lot of other issues as well.

DALEY: This is Dr. Daley regarding the first question. Again, any population of mycobacterium tuberculosis there are going to be mutations. And there will be mutants that have some underlying resistance. We do not always treat for all of those possible combinations, but yet we cure our patients in almost all circumstances. So we just know clinically that we don't have to target every possible strain of TB. We target the one that grows in the laboratory and in predominance. And again, remember, that most of the time, whatever we grow, if we take three cultures it's the same three. The same drug susceptibility pattern. So this is an unusual incident to have one that shows one pattern, and all subsequent done in multiple labs are different. So this is an unusual circumstance.

But as we've said the fact that we know that mutations exist in these populations, and as you just heard from Dr. Cohen it is possible that if you sample one area of the culture you should get a result that varied the next time you sample.

ALLSTETTER: OK. We're going to take one more phone question and then one more question here from the room. So last phone question.

OPERATOR: Richard Knox, National Public Radio, your line is open.

RICAHRD KNOX, NPR: Thank you very much. A couple of quick things, I hope.

ALLSTETTER: Speak up Richard.

KNOX: Yes, sorry. The timing of the tests, I'd like to, if you can give us when the three additional samples - I mean when the samples from March and from New York City and June were tested at National Jewish and when you got those results? And then secondly, about the public health assertion that there really is no difference between MDR and X(DR) I'd like to explore that a little bit further because it seems as though if there is someone out there, who's potentially infecting somebody with an XDR strain that that does have different implications for public health. Yes, neither should be riding on planes, but it seems as though it's wrong to say that there's really no public health difference.

COHEN: Well let me - this is Mitch Cohen. Let me just say that I think that the issue is what interventions - what public health interventions do you have? And the public health interventions for MDR and XDR would be the same.

I think, clearly, with respect to a message for individuals I think we would be concerned that there are fewer options to treat people. But the public health interventions would be the same, and we would take the same steps.

DALEY: The timing - this is Dr. Daley. The timing of the cultures so we received - and it was an April culture, April collection date, around the time that Mr. Speaker arrived and that was the first culture that we set up for susceptibility and it was the first culture that documented MDR TB. We requested and received a specimen from New York, which we received several weeks ago. Again, it takes a couple of weeks to do these tests.

We also requested additional isolates from the CDC, including the March isolate which I mentioned earlier in the press conference we now have and are testing, plus we had our own, and that became available the day after he got here. So the timing of this is basically since he got here, we have been able to get these specimens, not only here, but from other places, set them up, do them multiple ways and get these results out.

We are announcing this now, because we wanted to make very, very sure that we, in fact, had consistent results and that this was, in fact, MDR TB. As I said earlier, testing multiple cultures, multiple ways, same results, we believe he has multi-drug resistant TB.

ALLSTETTER: OK. Let's take the last question here.

UNIDENTIFIED PARTICIPANT: I just still find it a little hard to believe that the MDR and XDR public health protocols are so exactly the same. Are you saying then that no one has ever traveled internationally with MDR, because Andrew Speaker

certainly was treated differently than I have ever seen someone treated? Are you saying that he also would have been told to stay in Italy and to not leave that country because he had MDR, and everything would have been precisely the same?

COHEN: Yes, that's correct. If were aware of a person with MDR, we would have recommended the same steps, that they do not travel because the would have been potentially been able to expose individuals on the plane, as if, you know, if they had XDR or M and those are the recommendations of the World Health Organization.

UNIDENTIFIED PARTICIPANT: But you've never had an MDR patient travel internationally had you...

COHEN: I'm not aware that we've been notified. If we were notified that a person intended to travel, we would look into what potential steps we could take.

ALLSTETTER: OK. Folks, thanks a lot. Last question for CDC.

UNIDENTIFIED PARTICIPANT: I'm just confused by the conversation about using a subculture that is not really a good representation, because you might just sort of not give a whole spectrum there. So why - how can you really make the decision on whether someone has (INAUDIBLE) in the first place?

COHEN: Well what you have is that you have a growth of bacteria that are millions and millions and millions of bacteria on some sort of a media, whether it's a tube or it's on a plate. And you essentially take a wire loop and you touch it perhaps in different places, or take a streak of it. So you are not taking a sample of all of those millions of bacteria. You are only sampling a small part of them. So it is possible if your specimen includes a large number of one strain, and a small number of another, you might only get the specimen to show that you grow that contains the large number of islets.

ALLSTETTER: OK.

UNIDENTIFIED PARTICIPANT: (INAUDIBLE).

COHEN: I'm sorry, I couldn't hear. Could someone repeat that please?

UNIDENTIFIED PARTICIPANT: Is it a - I mean if I was going to conduct a survey I wouldn't just talk to three people, I would talk to 100. Is this a fair way to test for XDR? Or is it just the only way you can do it right now?

COHEN: Well, I think as we develop more sensitive tests, I think we'll be able to address some of those issues. The ability to, you know, to identify sub populations in cultures has not always been, you know, the high priority. The priority is to determine whether or not the drugs that will need to be used to treat the patient will work. So I think, you know, we're always concerned, do we get a representative sample by what other method we do, or whatever test we use, and that's always a consideration.

ALLSTETTER: OK guys. Thanks a lot. Thank you. Dr. Cohen, Dr. Daley, and goodbye.

COHEN: Bye-bye.

OPERATOR: This concludes today's conference. You may disconnect at this time. Thank you.

END

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