NATIONAL PRESS CLUB LUNCHEON WITH CDC DIRECTOR TOM FRIEDEN

SUBJECT: THE ZIKA VIRUS

MODERATOR: THOMAS BURR, PRESIDENT OF THE NATIONAL PRESS CLUB

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THOMAS BURR: (Sounds gavel.) Good afternoon, and welcome to the National Press Club. My name is Thomas Burr; I'm the Washington correspondent for the *Salt Lake Tribune* and the 109th President of the National Press Club. Our guest today is Tom Frieden, Director of the U. S. Centers for Disease Control and Prevention. I would like to welcome our C-SPAN and Public Radio audiences. And I want to remind you that you can follow the action on Twitter using the hashtag NPCLive. That's NPCLive.

Now it's time to introduce our head table. I'd ask each of you to stand briefly as your name is announced. Please hold your applause until I have finished introducing the entire table. From your right, Dr. LaQuandra Nesbitt, Director of the D.C. Department of Health; Paul Shinkman, national security correspondent for *U. S. News & World Report*, and a third generation Press Club member; Carolyn Bloch, publisher of Federal Telemedicine News; Ferdous al-Faruque, medical device reporter for The Gray Sheet; Silvana Quiroz, owner of ZoomLatino.com; Dr. Ed McCabe, Senior Vice President and Chief Medical Officer for the March of Dimes; Donna Leinwand-Leger, breaking news editor for *USA Today* and a past President of the National Press Club.

Skipping over our speaker for now, Doris Margolis, President of Editorial Associates Medical and Health Communications and the Press Club member who arranged today's event. Thank you, Doris. Dr. Ed Ehlinger, President, Association of State and Territorial Health Officials, and the Commissioner of the Minnesota Department of Health; Alison Fitzgerald Kodjak, health policy correspondent for NPR and the Chair of our Board of Governors; Jared Rizzi, White House correspondent for

Sirius XM Satellite Radio; Dr. Charles Sniderman, health and science reporter for Audio Video News; and Mike Smith, contributor to Becker's Hospital Review and Washington representative for Pacira Pharmaceuticals. Thank you all. (Applause)

Today, we welcome to our podium an expert in safeguarding the health of the American people, Dr. Tom Frieden, Director of the U. S. Centers for Disease Control and Prevention. Frieden is especially concerned these days about the growing threat that the zika virus poses for the health not only of Americans, but also for the world population. As many of you know, the zika virus can now cause severe birth defects. Microcephaly, did I say that right? All right, I'm getting there. That results in babies born with abnormal, small heads and underdeveloped brains, as well as other problems. The virus has also been linked to Guillain-Barre Syndrome, a neurological disorder that can result in paralysis and death.

Three months ago, the World Health Organization declared the zika outbreak a public health emergency of international concern. There is no vaccine or cure. As of mid-May the CDC reported it is monitoring 279 pregnant women in U. S. states and territories for possible zika infection. And the agency has increased its testing capacity for the zika virus in the U. S. as the summer mosquito season begins.

Frieden has been the Director of the Centers for Disease Control and Prevention for the past seven years. A physician with training in internal medicine, infectious diseases, public health and epidemiology, I'm just going to go with that one, he has worked to control health threats from infectious diseases, respond to emergencies and battle the leading causes of suffering and death in our nation and around the world.

Among the priorities he has tasked the agency to do are improving health security globally by preparing for, detecting, rapidly responding to, and preventing health threats such as disease, antimicrobial resistance, food borne diseases and healthcare acquired infections. Reducing the leading causes of death and illness among Americans due to tobacco use, uncontrolled blood pressure, diabetes, obesity, physical inactivity, motor vehicle safety, prescription drug overdoses and HIV and AIDS. Strengthening the public health collaboration by integrating public health and healthcare.

Before being appointed to head the agency, Frieden was a CDC disease detective. He conducted epil (sic), I'm just going to go with that, investigations including outbreaks of measles, typhoid, cryptosporidium and multi-drug resistance tuberculosis. While working in India for five years as a CDC assignee to the World Health Organization, Frieden assisted with tuberculosis control efforts. The program in India has treated more than 10 million patients and has saved more than 3 million lives.

Before joining the CDC, he was the Commissioner of the New York City Health Department, where he directed that effort by reducing the number of smokers by 350,000 and cut teen smoking in half. Frieden is a graduate of Oberlin College and received both his medical degree and master's of public health degrees, from Columbia University. He completed infectious disease training at Yale University. Today is the fourth time that Dr.

Frieden has spoken at the National Press Club Speaker Luncheon. Ladies and gentlemen, please welcome to the National Press Club podium Dr. Tom Frieden. (Applause)

DR. FRIEDEN: Thanks so much, Tom. Thanks so much, Doris, for arranging this, and thanks to the National Press Club for this venue. It's great to be back.

When an earthquake hits, we understand the need to respond. Now, imagine if you had the power to stop an earthquake. We together using the tools of public health have the power to stop the health equivalent of many earthquakes that happen around the world. The latest challenge we're dealing with is zika. This is unprecedented and tragic. It has been more than 50 years since we've identified any pathogen that can cause a birth defect. And we have never before identified a situation where a mosquito bite could result in an infection that causes a devastating birth defect. It is unprecedented, it is tragic, and it is now proven.

We know that zika causes microcephaly and other birth defects, but there's an enormous amount that we still don't know. We're still learning more literally every day about what zika causes and how to prevent it. The top priority is to protect pregnant women, and that focus has to be our guiding principle for our work everywhere there is risk for zika.

Memorial Day weekend heralds the start of mosquito season in the U. S. We have a narrow window of opportunity to scale up effective zika prevention measures and that window of opportunity is closing. I want to spend a moment to recognize a remarkably generous donation by Bayer to the CDC Foundation to support a comprehensive program to confront the zika threat in Puerto Rico. Bayer is making a very substantial donation that will enable us to do a number of things that control mosquitoes, to support women who choose not to become pregnant during this time with effective, modern contraception.

They also were one of our sponsors of the zika action plan summit at CDC where Ed was present, along with 30 other state health officials accelerating the work to protect people in this country. It's an example of the public sector, the private sector, the philanthropic sector, coming together effectively and doing together what none of us could do as effectively alone. So I'd like a round of applause for Ray Kerins and our foundation CEO Judy Monroe for their wonderful work supporting this effort. (Applause)

It has been less than five months since we first saw conclusive evidence that zika may be the cause of microcephaly. In those five months, we've learned an enormous amount, and I'll take you through ten things that we've learned in these five months. First, it is an extraordinarily complex response. In fact, of all the responses I have overseen, it’s probably the most complex. We have involved almost every single part of CDC. We've had more than a thousand of our staff involved, whether it’s mosquito control or virology or sexual transmission or obstetrics or newborn care. Many, many parts of our agency are fully activated to support the response.

Second, it's now clear that zika causes microcephaly and other birth defects. I vividly remember sitting with Dr. Sherif Zaki, our chief infectious disease pathologist, and having him show me the very special stains that he had done to show the zika virus actually invading the neural tissue of newborn infants and destroying it. This is a horrible thing to see. It is just the kind of thing you would never want to see, and yet to understand that when a child is born with microcephaly, it's not because the skull was malformed, it's because the virus destroyed the brain cells and the skull collapsed around the demolished brain, or the devastated brain. It's a horrible situation.

Third, we've now seen clear evidence that even asymptomatic infection with zika during pregnancy can result in microcephaly. And we know from past studies about four out of five zika infections appear to be asymptomatic. The person feels fine, they have no way to know if they've been infected.

Four, zika almost certainly causes Guillain-Barre syndrome. This is the temporary paralysis. This isn't so surprising. We've seen it with other infections. It is generally treatable, so that's not what's so unusual about zika. What's so unusual about zika is the threat to pregnant women.

Five, diagnosing zika is hard, but we've made enormous progress. CDC laboratory scientists have optimized tests so we now have a rapid, highly sensitive test that can be used in urine or blood that can detect the virus in someone who's acutely infected pretty accurately. We've also made them and disseminated them to a hundred labs around the U. S. and nearly a hundred countries around the world.

We've also improved the CDC IGM MAC-ELISA to try to test for recent infection. It's not perfect, but it's the best test out there. And we've also gotten that around, as well as a more rapid test, or a more complex test, to try to determine which of several similar infections the person may have had. It's a neutralization assay and we've provided more than a million of those tests. So, testing is hard, but we're making progress.

Six: controlling this mosquito is really hard. Aedes aegypti is the cockroach of mosquitoes. It lives indoors and outdoors. It bites during the daytime and the nighttime. Its eggs can last for more than a year. They can hatch in a drop of water. In parts of the U. S., actually Puerto Rico, they're highly resistant to certain insecticides. They prefer people so they generally spread disease among people and when they take a blood meal, they will often bite four or five people at once. So they're capable of rapidly spreading the infection.

There is no example of effective control of this mosquito in the modern era. And I vividly remember in a trip to Puerto Rico, our lab team had set up a laboratory, they'd hatched the mosquitoes and they were testing them for resistance. And we put them in a bottle coated with insecticide and we see whether they're knocked down or not. And to see them in a bottle that had been coated with what should be a very effective insecticide

happily flying around minute after minute, hour after hour, shows us how important it is that we improve the methods we have of controlling mosquitoes.

Seventh, there are also other routes of transmission. We did not expect that sexual transmission would be as common as we've seen it. We've had ten documented cases in the U. S. We've never had a sexual transmission of dengue or West Nile as far as we know, or chikungunya. But in zika, it can spread sexually and that adds a new level of risk and a new message that if your partner is pregnant and you've been in an area with zika, use a condom.

Also, blood safety. Theoretically, it's possible there could be transfusion associated zika. That's why we're so grateful for Roche and the FDA. They've come out with a terrific, highly sensitive test that's already being used in Puerto Rico to screen out the blood supply so we can keep the blood supply safe.

Eighth, Puerto Rico has a particular challenge. They were dealt a bad had by nature when it comes to mosquito-borne disease and we need to do everything we can to reduce the risk there. The risk is still to pregnant woman. It’s not a broader risk, but it is an enormous challenge in Puerto Rico. And we're continuing to see women infected with zika in Puerto Rico and very concerned about what the coming months will hold.

Ninth, the role of globalization and urbanization is crucial. We have at least 40 million visits from the U. S. to places around the world where zika is spreading. We're not going to stop the world because we want to get off. Globalization and global travel has a lot of benefits in economic productivity, in interchange among people, in the ability to do what we do in the world. But it does also have the inevitability of bringing risks closer to home. A disease threat anywhere in the world may be just a plane ride away. And the greater urbanization of the world is also facilitating outbreaks of yellow fever, in the ebola epidemic. It was the first time we had seen urban spread of ebola, which was enormously challenging to control.

Finally, I'd like to say a word, tenth, about the remarkable innovations going on through CDC scientists, doctors and other researchers. We often think of CDC as the agency with boots on the ground working 24/7 to protect you, and we are that. But we also have developed new tools, new diagnostics, using cutting edge technologies of virus-like particles and chimeric viruses to do testing better and faster.

We've developed new traps that are effective and actually can knock down the spread of diseases that spread like zika by half very simply at a low cost. And now we're going to see if that can be implemented on a broad scale. And we've been working for many years on a new class of insecticide that appears to be nontoxic, food grade, smells a little bit like grapefruit, and may be as effective as Deet and we’d like to see how quickly we can get that to the market.

So, rapid cycle approaches in innovation are going to be crucially important to protecting ourselves because the microbes are changing and we need to adapt also. We

are learning more each day. We still don't know what proportion of women who are infected with zika will give birth to an infected child. We don't know what proportion of infants born without microcephaly will have some impact later in life. It may be months, years or even decades before we know that.

We don't know the risk factors of why certain women are more affected, but we're working very closely with Colombia, Brazil, and Puerto Rico in the U. S. to learn more. The quicker we learn, the better we can protect American women.

In a public health emergency, speed is critical. A day, a week, a month, can make all of the difference. When ebola was getting out of control in July of 2014, I said that we needed 300 ebola beds in West Africa, a hundred in each country, and we needed them within 30 days. It didn't happen, and within a few months, we needed 3,000 beds. The fact that we can today potentially prevent dozens or hundreds or even thousands inters for disease control and prevention and we have the National Center for Birth Defects and Developmental Disabilities, and the experts there tell me that in their 30 years of working on birth defects, they have not had a situation this urgent.

I want to particularly thank Dr. McCabe from the March of Dimes and his colleagues for all they're doing to really make clear how extraordinarily unusual and urgent this situation is. We now know that there are more than 300 women in the U. S., including the territories, who have evidence of infection with zika. And that number will only increase.

We need to insure that we have the resources needed to treat this emergency as it should be treated. And if you just look at the definition of what an emergency is for a supplemental funding request, it has three categories. It has to be unexpected. Well, this is not only unexpected, it's completely unprecedented. It has to be catastrophic, and if you talk to any family of a child who's been born with a severe birth defect, there could be no better or more exact definition of a catastrophe. And it has to be permanent damage, and sadly damage to the developing brain is as permanent as anything.

When we began preparing the emergency supplemental request, it was a high level meeting that I was at and there was some discussion, what would be in it and how would it go, and what it would do. And I asked, "Well, how long is this going to take?" And they said, "Oh, it's moving very quickly, probably three months." And my jaw dropped, literally. Three months in an epidemic is an eternity.

Zika threatens that too many parents will have to have the experience of not seeing their child grow to their full potential, graduate, get married, go to school. And we need to make sure that all of us are doing everything in our power to minimize the number of families affected. We're not going to eliminate zika in the near future. It's going to be a challenge. But we can reduce risk, we can protect women. And to do that, government funding is essential, private funding is essential, philanthropic funding is essential. Congress did the right thing with ebola, and I hope in the end they will do the right thing with zika. And they'll do that without making us stop a battle in one part of the

world to fight a battle in another part of the world. You don't stop fighting terrorism in the Middle East to fight terrorism in Africa.

One of the things we had to do because when we found out it would be at least three months for a supplemental, was to borrow money from other parts of CDC. That includes emergency preparedness dollars that go out to Ed and all the other states to deal with things like leading the response, doing lab testing, tracking for outbreaks, responding to the health effects of natural disasters, dispensing countermeasures. We had to take nearly $50 million of that money and put it to zika. The states weren't happy about that, but we had no choice.

We also had to take money that was programmed for fighting ebola in West Africa and use it temporarily trusting that we'll get it back from Congress because we had no alternatives. And ebola is not over. I'll tell you that the most recent cluster emerged when a man who had survived ebola 15 months earlier had sexual relations with a woman, she developed ebola as a result and she died. Her family members died, it ended up spreading to two countries. We had to start five command and control centers. We had to upgrade 50 healthcare facilities so they'd be able to diagnose ebola. We identified over 1,500 contacts, all emerging from one case. We vaccinated 1,750 people. We made 30,000 interactions with contacts to see if they were sick so they could be rapidly isolated and the outbreak wouldn't spread.

And we were able to stop the outbreak. But if we let down our guard, it could come roaring back. And that same dynamic of letting it spread for a few days or weeks, and then it takes months or years to control, could have occurred.

We're also with the funding that Congress provided for ebola making excellent progress on a critically important initiative called the Global Health Security Agenda. This is about stopping outbreaks there so we don't have to fight them here. I was on the phone with my team in Uganda a few days ago, and really encouraged to hear the kind of thing that's going on.

They have had an outbreak of yellow fever in Uganda. A few years ago, they had an outbreak of yellow fever, it spread widely, it killed a lot of people and it was a huge problem. Now, they identified it quickly, they controlled it quickly, and they were even able to do whole genome sequencing and rapidly realized it's not related to the Angola outbreak. So we're in a new world of being able to find and stop threats where they first emerge. And the better we do that, the safer we'll be at home. And that's another part of the ebola supplemental dollars that need to be protected. We can't be letting down our guard in one place to fight another battle.

We also need to make sure that there is enough money in a supplemental so that we can do the projects that are going to be hard but have to start now. Understanding all of the effects of zika on women and the infants who are born. Developing better diagnostic tests so we can figure out if someone's been infected in the past. We don't currently have the ability to do that. Using our current mosquito control tools in a mix

and match way to figure out how we can knock down the mosquito enough to protect women and infants. And developing new vector controls, as well as a new vaccine. None of these are easy, none of them are going to be quick. But the sooner we start, the sooner we can have an answer.

I also do think that we have to be very clear about what we can and can't do in zika. At CDC, we always try to tell it like it is. We don't sugar over the truth. We will tell you what we know, when we know it, we'll tell you what we don't know and what we're trying to do to find it out. Within literally days of reviewing that slide that showed the zika virus invading the fetal and also infant tissue, we issued the first travel advisory on January 15th, saying that pregnant women should not travel to places where zika is spreading.

I can't tell you exactly how many pregnant women didn't travel for that reason. I can tell you that of the 300 women who we know of with zika infection, the great majority traveled before that time. So, we believed that that public health action has prevented cases of zika. That means that babies whose names none of us will ever know, will grow up healthy because we took the duty to warn seriously and we did it promptly as soon as we had sufficient information to take public health action.

Now, it's been pointed out that just in recent years, we've had H1N1, ebola, zika. We've also had MERS, H5N1. We don't know where the next health threat will come from. We don't know when it will come. We don't know what pathogen it will be. But we are 100 percent certain there will be a next one. And it's our responsibility to be as ready as we possibly can be and the two key areas for that are the Global Health Security Agenda, building up the capacity of countries to find, stop and prevent health threats and putting in place an accountability framework so that the whole world can know which countries are ready, what they're not ready for, and help for those countries that don't have the resources. It's in all of our interests to help them build up those resources.

And for those who are providing the assistance to know if our assistance has actually been effective with an objective accountability framework. And we also need to insure that we can surge in when country capacity is overwhelmed. At CDC, we've scraped together existing resources to create what we call the GRRT, the Global Rapid Response Team. We currently have more than 300 staff rostered for this. We have 50 people on call at any one time. We've already deployed them at least five times to deal with ebola, zika, polio, yellow fever. And they've spent more than 600 days in the field helping out with local response. So we've begun doing things.

But we lost time fighting ebola because we couldn't immediately move rapidly. And I fear that we're losing time with zika because we can't move as rapidly as we'd like to. Congress did the right thing with ebola. I hope they will do the right thing with zika, and they will do it soon. There's been talk that some of this should happen in the 17 process, and this isn't an either/or issue. The Senate bill doesn't fully fund the administration request. If some of that were rolled into the 17 process, that would be a

good thing, too. But we need to insure that we pay back the money we borrow, that we have enough money to respond effectively.

Now, interestingly, I've been hearing from both sides of the aisle, both Houses of Congress, interest in thinking about new ways to do things including having some form of public health disaster rapid response resource. This has sometimes been called a FEMA for public health. It would need to cover both domestic and global. It would need to have not only some resources available, but authorities. Authorities make a big difference. There's good reasons for the administrative procedures that we follow in the government. But they don't always match with emergencies. In the zika response, for example, we've been authorized to use what's called direct hiring authority. As a result, we have more than 70 people who've joined CDC to work full time on this. That makes a big difference. One of our lessons very internally from ebola is that we really wore our staff out. We had 4,000 staff work on ebola, 20 staff work on the ebola unit in the regular time.

Fourteen hundred people went to West Africa. They spent 75,000 work days there. We didn't have any serious injuries, we didn't have any ebola infections, but it was exhausting to staff. So we need to bring new staff on board. Zika's not going to be a one month or one year problem, and we need to get people working on it now who will be able to work on it long term.

So there are administrative authorities as well as funding. Kevin McCarthy in the House, Dr. Cassidy in the Senate, have both spoken about this issue. I don't know whether it will happen, how it will happen, but I do know that if we have money and mechanisms in advance, it minimizes the need for us to run to Congress for a supplemental and do something outside of the usual process. It allows us to put our focus where it should be, on adapting rapidly to the response.

And one of the key characteristics of responding to infectious disease threats is that you have to adapt the response. With ebola, for example, we rapidly realized that we needed a phased response when it was out of control. We needed to deal with safe and dignified burial first, better care next, then rigorous contact investigation and tracing. And that phased response allowed us to, first, break the back of the epidemic and then mop it up, clean it up, protect communities and keep it in check.

There is the ability to change the shape of the epidemic curve in public health. But the sooner you get there, the more dramatic impact you can make saving lives and ultimately reducing cost. Now, it is, as some have noticed, near the end of a second term of administration. I've had the incredible privilege to lead CDC for the past seven years. That marks about 20 years I've been working at CDC, and I'm still learning the great things that our dedicated staff do. They continue to inspire me and to humble me with their sense of mission, their expertise, their creativity, their hard work, their intelligence.

CDC is a great buy for the federal dollar. The taxpayers really get their money's worth. People work hard and are committed to what they do. And we have made a lot of

progress, not just stopping ebola but in other areas as well. And I thought since I'd given an earlier list of ten, I'll give a list of ten things that we've done that have kept Americans safer and healthier.

One, we've made progress-- and in all of these, I would say not successes, but progress, because there's still more to do. One, we've made progress reducing the number of healthcare associated infections. One of the most serious of these, MRSA in intensive care units, is down by half. More to go, but Americans are alive today because we along with CMSS, hospitals throughout the U. S., doctors, have improved practice.

Second, we've begun using whole genome sequencing, what's called advanced molecular detection, to find and stop outbreaks faster. This is exciting, new technologies. It allows you to trace the path of a pathogen in a way we never could before. We did a proof of principle with listeria sequencing every islet in the country. As a result, we found contaminated food before we would have found it otherwise. We got it off the shelf and today, there are Americans alive who would have died if that hadn't happened. We went to Congress three years ago saying this is our top priority ask, they funded it and Americans are alive today as a result of their foresight in doing that.

Three, tobacco use. Just announced this week, smoking is at an all time low in the U. S., 15.1 percent. Still a leading preventable cause of death, but millions of Americans don't smoke who smoked just seven years ago. The tips from the former smokers campaign that CDC ran, the first ever national paid campaign against tobacco, has been incredibly effective. It has helped about 400,000 Americans smokers and helped change the conversation about smoking. It has saved hundreds of millions of dollars in healthcare costs. And the cost per life saved is a tiny fraction of what's usually used as a benchmark.

Four, motor vehicle accidents, or injuries I should say, motor vehicle deaths, dropped sharply until 2013, where you'd have to look at more recent trends which are concerning. But motor vehicle crashes are an example of what we can do when we come together as a society and we think about how we attack a problem from all angles; law enforcement, community action, design, road design, industry, coming together can make driving much, much safer.

Five, teen pregnancy; the lowest rate ever, down 42 percent since 2007. And all too often teen pregnancy perpetuates poverty in a community. So, the decline in teen pregnancy has many positive ramifications throughout society.

Six, HIV. We've been promoting testing and now a greater proportion of people with HIV know they have it. It used to be that only about one in five people living with HIV didn't know they had it. Now it's about one in eight; progress.

Polio, number seven. We're closer to eradication than ever. When I began, when we began the effort in 1988, there were 350,000 children disabled each year by polio. Last year, there were 74; this year, so far there have been 17. When I began as CDC Director, it didn't look like we could get over the finish line in India. We surged into

India and we got to zero, India got to zero. Incredible effort. They put in a billion dollars to polio eradication.

Then we said, well, if India can do it, Nigeria should be able to do it and we surged into Nigeria. And that polio eradication infrastructure in Nigeria stopped ebola in Nigeria as well. So it has great, great benefits for all. Now the challenge is getting over the finish line in Afghanistan and Pakistan, and we're close. Whether or not it will happen this year hangs in the balance, but it can.

Eight, Haiti. You don't often hear Haiti and progress in the same sentence. But little known since the earthquake we have indeed helped them build back better. They have introduced new vaccines that will save more than 40,000 children's lives. And though you wouldn't naturally think of the word elimination of a disease and Haiti in the same sentence, they're on the path to eliminate three terrible diseases; malaria, which we think can be eliminated from the island of Haiti and Hispaniola, infant HIV, and filariasis, which is a terribly disabling condition.

Nine, PEPFAR, a wonderful program started in the previous administration, continued and expanded in this administration, is saving millions of lives around the world and CDC is honored to be a key implementer in that program. And the Global Health Security Agenda, which I've already mentioned, where we have now more than 70 countries involved in making the world a safer place.

Imagine what CDC could do if we were fully funded; how many earthquakes and hurricanes we could stop. There are still major unfinished pieces of business, and I'll mention four of them. Opiate overdose continues to be on the rise and is devastating families and communities. Cardiovascular disease is still our leading killer and yet we could control it for very little money. We should be able to do much better than we do preventing and treating high blood pressure and other leading causes of heart disease.

Three, antibiotic resistance. We risk being in a post-antibiotic world. And that wouldn't just be for infections that you think of as bad infections, pneumonia and urinary tract infections, that's bad enough. That could be for the 600,000 Americans a year who need cancer treatment for whom we just assume we'll be able to treat infections. We may lose that ability.

Just a few hours ago, the Department of Defense released information about a woman with no travel outside of the U. S., who is the first documented human case in the United States of having a urinary tract infection, or any infection, with an organism resistant to every antibiotic including the last one we had, Colistin. It was an old antibiotic but it was the only one left for what I've called nightmare bacteria, carbapenem resistant enterobacteriaceae, or CRE. What the Defense Department did at Walter Reed is they took organisms that were resistant to-- that had CRE, it had extended resistance, and they tested them for Colistin resistance.

And in the first six that they did, one was resistant. And this patient hadn't traveled, they'd done just three weeks of testing. And we know now that the more we look, the more we're going to find. And the more we look at drug resistance, the more concerned we are. We need to do a very comprehensive job protecting antibiotics so that we can have them and our children can have them. We need to make new antibiotics but unless we have better stewardship and better identification of outbreaks, we will lose these miracle drugs. The medicine cabinet is empty for some patients. It is the end of the road for antibiotics unless we act urgently.

Fourth, we need to do better at building and openly assessing rapid response capacity around the world, again that Global Health Security Agenda. Where countries aren't prepared, we are at greater risk. So the work is far from finished. But one thing that will bring us further along are connections; connections between the healthcare system and public health. Between global and U. S. health. Between the immediate needs and the long-term needs. Between the public, nonprofit and private sectors.

And in all of those connections, what's going to drive progress is the fundamental concept of accountability, never being afraid to ask how much difference are we making? Are we succeeding? Are we getting the results we need? In the private sector if you don't, you don't make a profit, you change your business model. In the public sector, unless you have an accountability framework, you may not be able to correct what you're doing fast enough to protect people well.

Now, I'm often asked how I feel as CDC Director dealing with things like ebola and zika. And, of course, in the heat of the moment, you're mostly concerned about getting the job done, concern about something or fear about something getting out of control, worry about being able to get the support, the inspiration of dealing with staff who are so focused on what they do.

But for me, when faced with emergencies like this, the greatest emotion has been frustration. Imagine that you're standing by and you see someone drowning and you have the ability to stop them from drowning, but you can't. Now, multiply that by a thousand or a hundred thousand. That's what it feels like to know how to change the course of an epidemic and not be able to do it for any reason because of challenges in implementation, or funding, or administrative details, the challenges of working in partnership with other organizations.

Right now, the current crisis is zika. We need a robust response to protect American women and reduce to the greatest extent humanly possible the number of families affected. We don't know who those children will be, we don't know where they will grow up, but anything we don't do now, we will regret not having done later. And if we don't take this opportunity to learn the lessons and establish some sort of facility whereby we can respond immediately and surge in when there's a problem, we won't be fully prepared for the next emergency. And we know there will be a next emergency.

Most of the times in public health, we do our work silently. We're in the background. All of us are here healthier today, many of us are here alive today, because of things that public health did that we may not think about. Whether it's a vaccination or safe water or a safer environment, public health keeps us safe, healthy and productive.

Now, imagine that you could stop an earthquake. In public health, we have the ability to stop many of the health equivalents of earthquakes. You have that ability. You in the media, you in the philanthropic sector, you in public health, you in the corporate sector. In fact, public health is everyone who protects the public health. Thank you very much. (Applause)

MR. BURR: Thank you, Doctor. Got a lot of questions. We're going try to get through these as quickly as possible. But I wanted to follow up on something you said as you started to speak. You said that the microbes are changing. Is there a concern that the zika virus is mutating in ways that will make it even more concerning than it already is?

DR. FRIEDEN: We don't understand why we're seeing this with zika for the first time. There are at least four different possibilities. Maybe the virus changed. We've looked at the genome, it hasn't changed much, but we don't understand the genome fully. So even a small change could result in it.

It may be that it was happening in Africa for years and we weren't looking, so we didn't realize it. It may be that it was so rare that it didn't occur often. Or, it may be that it was so common that women were infected before childbearing and therefore you didn't see it. So we just don't know. And these are some of the things we need to find out going forward.

MR. BURR: Thanks. Given the forecast for a fairly hot summer and as you might have seen a lot of recent rain. What are your current expectations of how many pregnant women in the United States might get zika this year, and how many zika related cases of fetal defects might we see in the U. S.?

DR. FRIEDEN: For zika, we will look at how two other viruses, dengue and chikungunya have spread. They're spread by the same mosquito, so we can't guarantee that zika will behave as those two viruses behave. But if it does, then we would expect to see several different patterns.

First, zika associated with travel, virtually everywhere. We've already had more than 500 such cases in the continental U. S. Those are generally symptomatic cases, so many more infections that we haven't recognized. There are 40 million visitors, so you do expect a lot of travel associated cases.

In Puerto Rico and the U. S. territories where dengue and chikungunya spread very rapidly, unfortunately the likelihood is that within a year, we will see hundreds of thousands of infections. So that is a real concern.

In other parts of the U. S. including Hawaii, we've seen yet a different pattern of zika spreading-- I'm sorry, of dengue spreading, not zika spreading, of dengue spreading. And if zika spreads that way, it could spread for months and be very difficult to control, but at a very low level.

In parts of the southern U. S. like Florida and Texas, we've seen clusters of dengue and chikungunya. In the past, they have not been widespread, they've been quite focal. And the local governments, local areas, have been very effective at doing mosquito control to prevent widespread transmission. That is the most likely scenario in terms of zika. We do expect there will be some spread through mosquitoes in some parts of the continental U. S. We do work very closely with the state and local entities there to try to keep that to the absolute minimum. That's one reason we need robust resources, so we can insure that we are doing everything in our power to minimize the risk to American women.

MR. BURR: Still on the scope of the epidemic, there doesn't seem to be much news, if any, about zika infected people in Europe or even Asia or Africa. Could you please help me understand what's going on there?

DR. FRIEDEN: We have seen, for example, sexually transmitted zika in parts of Europe. We're really not sure what's happening in Asia. It may be that zika's been around for so long that people are immune to it. Or, it may be that they're going to have a large outbreak. Only time will tell, and that's one reason we need really good monitoring systems in place to track what's happening.

When we improve monitoring systems, it's like civil aviation. If the whole world does it together, the whole world is safer and that's one thing that we have to continue to strengthen in global health.

MR. BURR: There's a large event happening in Brazil this summer. If you were in charge of this year's Summer Olympics, what would you do? Would you cancel it? Would you move it to a safer place, postpone it?

DR. FRIEDEN: There is no public health reason to cancel or delay the Olympics. Our recommendation from CDC about travel is a recommendation regardless of why you travel. We say if you're pregnant, don't go somewhere where zika is spreading. If you have to go to somewhere where zika's spreading and you're pregnant, be really careful about mosquito bites. And if you're a male in a place where zika is spreading, and your partner is pregnant, use a condom.

So I think there is the risk to delegations going, athletes is not zero. But the risk of any travel isn't zero. But the risk is not particularly high other than for pregnant women. And some have said, well, so much travel to the Olympics, it might spread the disease. We've looked at this, travel to the Olympics would represent less than one-quarter of one percent of all travel to zika affected areas. So even if you were to say the Olympics

weren't to happen, you'd still be left with 99.75 percent of the risk of zika continuing to spread.

The fact is, we are all connected by the air we breathe, the water we drink, the food we eat and the planes we ride on. It is a world where interconnection is the new normal and rather than try to stop the world because we want to get off, let's take steps to make as much of the world as safe as possible for all of our sake.

MR. BURR: Thank you, sir. From what I understand, it seems there are only six states in the United States that are still zika-free, having not reported any cases; Alaska, Idaho, North Dakota, South Dakota, Washington and Wyoming. What do those states have that the others lack?

DR. FRIEDEN: Fewer travelers from zika infected areas. And just a matter of time before they also have some cases, I think.

MR. BURR: Let's get to funding for a second. Have you been prevented from doing anything as a result of Congress not yet acting on emergency funds for zika?

DR. FRIEDEN: We've been able to get a start on things that are needed immediately for the zika response. What we haven't been able to get started on are some of the longer term projects that we have to start now that are going to take time. You know, there's the old saying the best time to plant a tree is 20 years ago. The second best time is today. And we haven't been able to plant those trees. We haven't been able to begin the really important work to come up with better diagnostics, to come up with better mosquito control strategies, to do that in the robust way that we're going to need.

MR. BURR: Thank you. So keeping on the funding, though, for a second, how do you respond to claims, especially by many congressional Republicans, that the administration's $1.9 billion request is vague, incomplete or could result in a blank check, or some called it, a slush fund?

DR. FRIEDEN: For the CDC component of the administration request, it was $828 million. We have a line item. It is our best, most honest estimate of what we need to fight the epidemic. And it may be under for some areas where the drug resistance results came back, insecticide resistance results came back. Some of the alternative insecticides cost two or three times as much, so we might need more than that.

If other communities do things in different ways, it might be less than that. But that's our best estimate of what we need for the CDC. The Senate compromise bipartisan proposal funds nearly all of what CDC requested and would allow us to have a really great start. And really, the two things that are key are please reimburse the money we borrowed because it's still needed to fight emergencies, including in the U. S. and overseas. And second, make sure we have enough resources and authorities to protect women as effectively as we possibly can.

MR. BURR: Still on funding for a second. Other than the public health emergency preparedness fund, what specific programs has the CDC had to cut in order to pay for zika?

DR. FRIEDEN: Well, there are a couple of things that are going on. One, as you mentioned, we took about $50 million from the public health emergency preparedness program, not because we don't like that program or it isn't important, it was one of the only places we could go where we were allowed by Congress to redirect 10 percent of it. So we took 10 percent of it and we put it to zika. That meant that states like Ed's got less money, or are getting less money, and they have to deal with can they pay their staff that are doing emergency preparedness? Can they respond to outbreaks? Can they track systems? So that's one piece that we very much hope will get restored.

The second, that we use at CDC, we had some dollars that were programmed to fight ebola in Liberia, Sierra Leone and Guinea, in '17 and '18, because it's five year money. So we said we have nowhere else to go, so we're going to take the money from there, but we need it back so we can prevent ebola from coming roaring back.

MR. BURR: Let's talk about prevention here. What's your view on the use of mosquito repellants with Deet, especially by pregnant women? Are there other side effects of using Deet? And what mosquito repellants would you actually recommend?

DR. FRIEDEN: Deet, when used as directed, is effective and safe including in pregnancy. So one of the things we've done in Puerto Rico with support from some of the companies that are here is to distribute zika prevention kits, or ZPKs. We've already distributed almost 10,000 of them. There are about 32,000 pregnancies in Puerto Rico per year so we're getting pretty close to really reaching a very large proportion of the at risk women. And we're finding a great interest.

The challenge is not so much are they safe, but are they effective? Because you've got to apply it multiple times in a day. You've got to apply indoor and outdoor. So what we're really looking at is a comprehensive program that deals with screens and killing larvae and getting rid of breeding sites, killing adult mosquitoes. It's what I call the four corners approach; inside, outside, adult mosquitoes and larval mosquitoes.

We have some new tools that are very exciting; one I mentioned earlier, the auto gravidal trap which kills female gravid mosquitoes. There's some other products which EPA has rapidly approved which we'd like to get into field trials in Puerto Rico in the next few weeks.

So the challenge is that there's no magic bullet to get rid of this mosquito. It's really tough, and we need to try a comprehensive approach drawing together the different tools that we have and figure out what works.

MR. BURR: Speaking of-- what's the timeline, is there a timeline, for a vaccine for genetically modified mosquitoes for an effective anti-zika viral drug?

DR. FRIEDEN: I think for all of these research priorities, you have to, one, go full steam ahead in developing them, seeing if the work. But two, not assume they're going to be here and be here soon. So the most promising is a vaccine, immunity to zika appears to be long-lasting and potentially lifelong. So in theory, making a vaccine against it should work. And the vaccines that are being tried are killed vaccines so they're not going to result in an infection.

Initially, we weren't quite sure if the microcephaly caused by zika might be an immune response, in which case a vaccine would have the potential to make it not be protective. But now it's very clear that it's a direct virus attack. So a vaccine could work, should work. But it's going to be at least a year or two before we know if it's safe and effective. And that's often optimistic in terms of vaccine. But NIH is doing terrific work. They've got five different potential vaccine candidates. They expect to be in phase I trials in September, phase II trials beginning early next year. And depending on how those go, we could have a vaccine in the next couple of years, but we can't count on it.

And even if we do, we're still going to have other mosquito borne diseases. So we still need new classes of insecticide. We still need new ways to control this mosquito.

MR. BURR: You talk about repellants and insecticide. Aren't there other health effects of using those as well?

DR. FRIEDEN: So it's very important to use any product safely, whether it's insecticides or repellants, larvicides or pesticides that kill adult mosquitoes. There has been important technological advancement in recent years. We now know more about ultra low volume spraying, about the particle size that's most effective for mosquitoes and will minimize toxicity. About how to apply and where to apply. There are parts of the U. S. that are doing really excellent work on this, and we're all learning from there. So there are technological advances.

There is nothing that is risk free in life. So it's always going to be a balancing act. But applying things effectively is going to be a way of minimizing risk, especially in a place that has a high risk in Puerto Rico.

I think you'll find that in any community that there are some people who want more spraying and some people who want less spraying. So, part of that is a community discussion, and part of that is trying to get the facts out there of what are the potential risks and what are the potential benefits.

MR. BURR: You just talked about Puerto Rico. What has the impact of the debt crisis there had on fighting this?

DR. FRIEDEN: It hasn't made it easier. Puerto Rico is faced with a very challenging situation, not just economic and political, but also in a healthcare context. Their Medicaid program has deep problems and is unable to pay physicians. One of the

things that the CDC foundation is working on is a way to reimburse physicians for the care they provide for women who choose not to become pregnant during this time. It's making an incredibly difficult situation even harder.

MR. BURR: Well, what level of confidence do you have that the virus persists in blood and semen for weeks and/or months and/or years?

DR. FRIEDEN: There are a few things that we know. Virus persists in blood for only about a week. It persists in urine for about two weeks. It persists in saliva for about a week. That's been studied. Semen is an unknown. There have been reports of virus persisting not necessarily live virus, but at least parts of virus, for up to two months. We've seen the long persistence in ebola. Those studies need to be done. They take six to twelve months to do, at best. And we still may not know of the outlier situations where there may be someone who has a different course of infection, as occurred with the recent ebola cluster in West Africa.

So, we have to recognize that we have many, many things that we don't yet know in zika. We give the best available advice based on the most recent and best available information.

MR. BURR: Could you have zika and not develop symptoms? I'm sorry, could you have zika and not develop symptoms? Should anyone who has been in a risk zone get tested?

DR. FRIEDEN: About four out of five people infected with zika, we believe, don't recognize any symptoms. The challenge with testing is that we don't have widespread, widely available testing for past infection. In fact, past two or three months, we don't have any testing to see if you've been infected. So we need industry to come to the table and develop new tests. We need basic science to advance, so we try to develop those tests. They're not easy. This is not an administrative or operational problem, this is a scientific problem that is very, very difficult to do.

There have been efforts to do this for many years that haven't been successful. So we have scientific challenges and that's also one of the areas that we want to begin that long-term work. The sooner we begin it, the sooner we'll have answers.

MR. BURR: Thank you. Before I ask the last question, I have a few announcements. A reminder, the National Press Club is the world's leading professional organization for journalists. We fight for a free press worldwide. For more information about the Press Club, please visit our website at Press.org. I would also like to remind you about some upcoming programs. On June 13, Girl Scouts of the USA CEO Anna Maria Chavez, will speak at the Press Club luncheon. On June 20, we'll have the Federal Communications Commission Chairman, Tom Wheeler. The next day, Michael Middleton, the University of Missouri's interim president, will speak here. And the next day, June 22nd, Labor Secretary Tom Perez will cap off for me what will be a 40 hour 3 day work day, work week.

Now, I'd like to present our guest with the National Press Club mug. This is your fourth visit, I believe, so you now have a full set.

DR. FRIEDEN: Thank you. (Applause)

MR. BURR: For my last question, sir, your job is to protect the health of Americans, but we all have our vices. So my question is what is your guilty pleasure; Netflix, chocolate?

DR. FRIEDEN: Well, desserts, I have to say. I love sweets and, you know, it's okay to like things that are unhealthy. Everything in moderation, including moderation. Sometimes, people think that public health is about telling people not to do things that are fun. But actually, I'd rather think of public health as helping people identify the sweet spot, identify things that you love doing, whether it's walking or dancing or walking the dog or playing basketball, that are healthy and help you to live a longer, healthier life.

We're about empowering. Empowering means that if you go about your business, you don't have to worry about getting killed by a resistant bacteria. Or having a child with a terrible birth defect. Public health is about helping all of us live healthier when we just go about our business and do what we want to do. Thank you all very much.

MR. BURR: Thank you, we are adjourned. (Sounds gavel.) (Applause)

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