**CENTERS FOR DISEASE CONTROL & PREVENTION**

**Moderator: Georgia Dominey**

**May 11, 2016**

**3:00 pm CT**

Operator: I thank you all for standing by. At this time all participants are in a listen-only mode until the question and answer session of today’s call. At the time you can press star 1 to ask a question. I would also like to inform all parties that this call is being recorded; if you have any objections, please disconnect at this time. I would now like to turn today’s call over to Mr. Brant Goode. Thank you sir, please begin.

Brant Goode: Thank you and good afternoon. This is Brant Goode. I’m the acting State Coordination Task Force Deputy. Welcome to the second in a series of six teleconferences that we’ve planned to follow-up on topics that we discussed during the April 1 Zika Action Plan (or ZAP) Summit held here at CDC. During the ZAP Summit, we obtained feedback from participants, not only on the summit itself, but also on challenges and issues that merited follow-up discussions. Based on those results, CDC has planned this teleconference series in which our subject matter experts will address and provide updates on your top six areas of interest. In addition to today’s focus on pregnancy and birth defects, the teleconference series will address vector surveillance and control on May 17, sexual transmission and pregnancy planning issues on June 2, epidemiology and surveillance on June 8, diagnostics, lab capacity and testing interpretations on June 13.

Before we get started with today’s topic I would like to invite everyone listening who attended the ZAP Summit to email us any success stories or challenges you’ve had so far in implementing the ZAP action plan you created at the summit. Please send that information to us at preparedness@cdc.gov. I’m going to read learning objectives for today’s teleconference. Following today’s teleconference on pregnancy and birth defects, learners should be able to review what we know and don’t know about Zika virus infection in pregnancy and Zika-related pregnancy and infant outcomes, they should be able to review specific considerations regarding monitoring and response to Zika associated infant outcomes. And they should also be able to describe CDC’s response to the threat posed by the Zika virus including monitoring pregnancy and infant outcomes and what CDC is doing to support rapid case findings and referral to services for affected families. Today you’ll hear from two presenters, Dr. Janet Cragan, who is a medical officer with the National Center on Birth Defects and Developmental Disabilities; and Dr. Sonja Rasmussen, who is the Editor in Chief of the MMWR series. Dr. Rasmussen.

Dr. Sonja Rasmussen: Thank you. It’s a pleasure to be here today to talk about Zika virus and pregnancy. And we can go to first slide please. So this really is a historic response, and I want to begin by emphasizing that. Never before in history has there been a situation where a bite from a mosquito could result in a devastating malformation and birth defects. And we know that previous infections have caused birth defects; for example, rubella, cytomegalovirus, (histoplasmosis), but it’s been more than 50 years since there was an epidemic of birth defects related to an infection, and that was in the 1960’s with rubella. And so this really is a historic situation. So now I’m going to review some of the basics on Zika virus, especially those related to pregnancy.

Next slide. So first, to review Zika virus clinical disease course and outcomes, I think as most of you know, clinical illness with Zika virus is usually mild, in fact, maybe infection may be as high as four and five infections are asymptomatic. And when symptoms do occur, they last several days to a week. And people who really require hospitalization is pretty uncommon and fatalities are rare, although they do occur and you may have heard recently of a fatality in Puerto Rico. Guillain–Barré syndrome has been reported in patients following suspected Zika virus infection. That relationship isn’t entirely clear. It’s not proven the Zika virus causes Guillain–Barré syndrome, but we’re concerned about that association, and there are studies that are underway to study that better.

Next slide. Of course the real reason why we care about Zika, given that it’s a mild illness otherwise, is because of the effects that we see on pregnant women and their fetuses and their babies. As you know, pregnant women can be infected. The primary ways of being infected are through a mosquito bite and through sex with an infected male. And that’s why our prevention guidelines focus on decreasing mosquito populations, avoidance of mosquito bites, and concerns about sexual transmission.

So we know that if a woman is infected around conception that Zika might present risk to the fetus. And that’s really based on what we know from other infections. We don’t know that right now about Zika, but we know from other infections if someone gets infected with a virus around the time of conception that the fetus can have some effects. We do know for certain that if a woman is infected during pregnancy or at around the time of birth that Zika virus can be passed to the fetus during pregnancy across the placenta and then at the time of delivery that perinatal transmission.

Next slide please. So as I said, we know that Zika virus in a mom can be passed across the placenta to her fetus. So there are several pieces of evidence that tell us that. We’ve seen evidence that Zika virus in amniotic fluid, in the placenta, in the brain in particular… in the brain of babies that have had microcephaly who have died and then in products of conception when women have had miscarriages.

And you can see here on this slide, studies from a CDC lab that had found evidence that Zika virus in brains of newborns with microcephaly. And here you can see areas where there’s damage. The circle indicates where there’s some damage to the brain. And then let deep pink color, if you’re looking at it in color, is a sign of the Zika virus. So you can see that the Zika virus is seen in areas where there’s specific brain damage. Next slide please. Zika virus was first seen in the Americas in early 2015 in Brazil. And a few months’ later Brazilian health authorities began to note an increase in the number of babies born with microcephaly. And of course that’s why we’re all concerned about Zika virus now.

In this slide you’ll see pictures of babies with microcephaly that have been born to women who were infected with Zika during pregnancy. And this of course microcephaly means a smaller head, and Dr. Cragan is going to talk to you more about microcephaly and how it’s diagnosed, but you can see this is a very severe form of microcephaly. This isn’t just a baby who has a head that’s a little bit smaller; this is severe microcephaly. And here you can see we believe that what is occurring here is something called fetal brain disruption sequence. And you can see on the right side the wrinkling of the scalp the skin on the top of the baby’s head that’s called scalp rugae. And it’s seen with a condition known as fetal brain disruption sequence, and again Dr. Cragan will talk to you more about that.

But what we believe happens here is that in utero the brain is growing fine. The woman becomes infected with Zika virus, which then infects the brain tissue. The brain tissue calcifies, because oftentimes we are seeing calcifications in the brain on CT or MRI. And then though brain has almost classes of skull classes on and that’s what you see on the left side the skull x-ray where there’s that prominence in the back of the head. And that’s because the front part of the brain has actually kind of collapsed in. So this is a very serious form of microcephaly. And until the Zika virus outbreak this condition -- this fetal brain disruption sequence -- was very rare, and we have no evidence that it was occurring in large numbers in Brazil before Zika, but now it is a frequent occurrence.

Next slide please. So on April 13, building on the hard work of many scientists, CDC concluded that Zika virus is a cause of microcephaly and other serious brain anomalies. And to reach this conclusion CDC conducted a systematic evaluation of the evidence using defined criteria which shows that a causal relationship exists between prenatal Zika virus infection and microcephaly and other serious brain abnormalities. Next slide please. However, many questions remain. We know that Zika virus causes microcephaly and other serious brain anomalies, but we don’t know how often. And of course that’s one of the things that women want to know when they’re infected with Zika virus, what’s the likelihood that my baby is going to have these problems? What is the level of risk? From some studies, it appears that it might be as low as 1%; other studies suggest that it could be much higher than that.

Another question that remains is when during pregnancy is Zika virus infection causing the highest risk to the fetus? We know that babies that have had microcephaly have been infected- it looks like in the first trimester or in the early second trimester but what about later in the second trimester or even in the third trimester? Babies that were infected at that time -- do they also have problems? We don’t know the answer to that question right now.

Another question that remains is what is the full range of potential health problems that Zika virus infection may cause? It appears like so far most of the effects are on the brain or things that the brain impacts. So babies can have contractures where they’re - they have tight hands and feet but that is believed to be part of the brain. So we don’t know, are there other defects, other birth effects that could occur if the baby is infected with Zika virus during the pregnancy or not? Another question is, are there other problems with the brain? So, for example, can a baby have developmental delay later on because of being infected during pregnancy? We know from previous types of infections that what we see first is usually the tip of the iceberg. And so we have to do a lot more work to understand the full range of health problems that are associated with Zika virus.

And then the final question is, what other factors could affect the risk for birth defects? So there’s a number of those that have been hypothesized. Could women maybe have another infection at the same time? Could it be that they had an infection in the past, a similar infection like dengue infection in the past and that effects the way that they react- their immune system reacts to the Zika virus or could it be that women who have symptoms are more likely to have babies with problems, with microcephaly, versus women that don’t have symptoms? We don’t have answers to any of those questions right now. And that’s critical information that’s needed to counsel women and their families that are infected with Zika virus.

Next slide please. So answering these critical questions is a focus of our ongoing surveillance and research. Our goal is to protect pregnancies and to discover how to minimize the effects of Zika virus during pregnancy. So this slide summarizes the actions we’re taking now. We’ve established a system to collect information about women who have been infected with Zika, and then we have plans to be able to follow those babies.

With our partner health -- our health partners in the United States and the Americas -- we have three systems in place. First, the US Zika Pregnancy Registry, which is to collect information about women infected with Zika during pregnancy in the United States and their infants. Then there’s the Zika Active Pregnancy Surveillance Systems or ZAPSS, and that’s in Puerto Rico. And we have established enhanced surveillance for pregnant women with Zika in Colombia with our collaborators there to monitor pregnancy outcomes in women with Zika virus disease. And our CDC staff is on the ground in Brazil, Colombia, US Virgin Islands, American Samoa, and Panama to support public health investigators learning more about the effects of Zika virus during pregnancy.

Next slide. So now I’m just going to go into a little more detail about the US Zika Pregnancy Registry. Next slide. So the purpose of the registry is to try to help answer some of those questions that we raised earlier. And it really is to monitor the pregnancy and infant outcomes following Zika virus infection during pregnancy and to inform clinical guidance and public health response.

And we’ve even as early on as we are in this response, we’ve already learned a lot from the pregnancy registry, which is going to be helpful as we update our guidelines. And, as you know, our guidelines are always written as interim, because as we get more information, we want to update those so that they include the latest information that we have. So how does the pregnancy registry work? It’s a supplemental surveillance effort coordinated by CDC. And it’s dependent on the voluntary collaboration of states, tribal, local, and territorial health departments.

Next slide please. So who is included? We’re including pregnant women who have laboratory evidence of Zika virus infection so symptomatic or asymptomatic and exposed infants born to these women. And then sometimes if mom might not have been infected, but if we have a baby who has laboratory evidence of congenital Zika virus infection, we would include those babies and their mothers. So how can you in states support the registry? It’s important to spread the word about the Zika Virus Pregnancy Registry and assist with health department follow-up to report cases and collect clinical and follow-up information. And of course we’re really wanting to support you in any way that we can in helping to try to collect that information, because we realize how important it is for women and their families.

Next slide please. So what is CDC doing to respond to the Zika virus? We’re monitoring the spread of Zika virus through public health surveillance. We’re working to increase laboratory capacity for testing, testing done at CDC and then working with states and local health departments so they can provide testing to identify Zika virus infections. We’re assisting with the development of tests that can improve detection of previous infection with Zika virus antibody tests. We’re working with partners to improve mosquito control efforts. We’re providing recommendations for prevention, for promoting effective health communication strategies. We’re focusing on supporting state, local, tribal and territorial response efforts. And finally we’re building state capacity to identify babies with birth defects.

So now I’m going to go to the last slide. The last slide is more information about Zika and pregnancy. There is information about the US Zika Pregnancy Registry on the Zika Pregnancy Registry website. And if you want to contact our registry staff, you can call the Emergency Operations Center at the Watch Desk, and they’ll put you through, or you can email us, and the email address is on the slide. And for more information on caring for pregnant women, infants, or children was Zika virus infection, there’s lots of information on the CDC Zika Web site. Next slide. Now I’m going to turn the presentation over to Dr. Janet Cragan, who is going to be talking about Zika and birth defects.

Dr. Janet Cragan: Thank you, Sonja. Can I have the next slide please? So I think most of what we hear all about the infants in Brazil certainly in the media has to do with microcephaly. And in reality microcephaly is just a clinical finding of a small head compared to other infants of the same age and sex. It’s measured by measuring the circumference of the head or the occipital frontal circumference. And it’s felt to be a reliable estimate of the volume of the underlying brain. But it’s really that underlying brain that we want to focus on as the effects of Zika here not just the measurement of the size of the head. Children with microcephaly often have cognitive and neurologic issues throughout their lifetime.

One of the things that makes it difficult to monitor microcephaly and to study it is that there’s not really an excepted single definition. Clinicians use different cut-off points for it depending on the child’s presentation and any other symptoms that are going on. And some will say, well, it’s microcephaly if it’s less than a third percentile for that child’s age and sex ;others will use a cut off of less than then fifth percentile or sometimes even less than the tenth percentile. So when you look at medical records it really is a clinical diagnosis not just a measurement of the head.

Next slide please. So this just shows you the range of severity for microcephaly. The baby on the left has a normal head size, the baby in the middle has a moderate level of microcephaly, and the baby on the right has quite severe microcephaly. Next slide please. There are also different types of congenital microcephaly. So you can have disproportionate microcephaly where the head is small but the way and the link for the child are normal for their age and sex. You can have proportionate microcephaly where the head is small but the weight and the length are small also but they’re in proportion to each other so that’s basically just a very small baby.

And then you can have relative microcephaly which is where the head circumference by measurement is within the normal range but it’s smaller than the weight and the length and out of proportion to them. So for example if you had a baby whose weight and length are at the 60th percentile and the head circumference was at the 20th percentile that’s an indication that there’s something wrong even though the head doesn’t measure as small as your definition might have.

Next slide please. So for the purposes of the Zika investigations and so that we can compare data across populations and across studies we developed a definition of congenital microcephaly for Zika related studies. And this includes definite microcephaly in a live born infant is when the head circumference at birth is less than the third percentile for gestational age and sex or if you don’t have a head circumference measurement at birth but the head circumference is less than third percentile within the first six weeks of life and that’s six weeks adjusted for gestational age for preterm infants. Among stillbirths and elective terminations it’s a head circumference at delivery that measures less than third percentile for gestational age and sex.

But then we define possible microcephaly in a live birth is when the situation is that you don’t have a head circumference measure - measurement within the first six weeks you have one later the measures less than third percentile for age and sex. And the reason that’s considered possible is that you can also have acquired microcephaly where the head is normal at birth and the brain grows fine and then there’s an insult to the child. Maybe there’s an infection or a trauma to the head and the brain is damaged and from that point on it doesn’t grow properly.

So it’s sometimes a little hard to be sure when you have a - an older child whether the microcephaly was truly congenital or is acquired from some other cause. And then for all pregnancy outcomes if the head circumference measurement the only one you have is on a prenatal ultrasound then we would also consider that possible, because there’s no actual measurement of the infant or the fetus. And those don’t always correlate exactly. So that might be the situation with the stillbirths for example.

Next slide please. So this just provides suggested reference charts for measuring head circumference and plotting it by gestational age and sex. These are from the INTERGROWTH-21st studies. They have a very nice website. And they have charts for head circumference and for weight and length as well by sex one for boys and one for girls. For newborn infants, 33 to 43 weeks’ gestation they have a separate set for very preterm infants. And I apologize there’s a typo on this slide: that should be for gestational age “24 to 32 weeks” instead of “34 to 32.” And then for fetal measurements in utero for gestational ages is less than 24 weeks there are separate charts as well.

Next slide please. So when you’re looking at the occurrence of microcephaly in a population of children, there are a couple of different ways to look at the data to really kind of monitor what’s going on. One is as we’ve talked about the severity of microcephaly. So you have everyone who carries a clinical diagnosis of microcephaly. And if you have head circumference measurements at birth or soon after birth then you can subdivide those into how many - what proportion are less than third percentile, what proportion were between third and fifth, what proportion were more than fifth to get a look at what’s going on.

You can also look at them in terms of what are the known causes that have been documented in these children? So chromosomal abnormalities are often associated with microcephaly, there are genetic syndromes, and single gene disorders for which microcephaly is a characteristic. There are in utero infections where microcephaly has been well described such as Sonja mentioned cytomegalovirus, herpes, toxoplasmosis, and we can now add Zika to that group. And then there are some teratogens, which can result in microcephaly as well if they’re exposed in utero. So microcephaly is one feature of the fetal alcohol syndrome, for example. And then you’ll have a proportion where you don’t have a cause, and you don’t know what is underlying the problem. And so you can kind of look at those relative proportions of the different groups over time as your monitor a population.

Next slide please. So as I said it’s really the brain underlying the microcephaly that we’re concerned about. And there are a number of brain defects that have been described in the infants in Brazil who have had congenital Zika infection. Certainly there’s a decrease in the total brain tissue, which results in the microcephaly, but there’s also been described calcium deposits in a variety of places in the brain, which are basically just scar tissue where the brain has been damaged.

There’s – they’ve described excess fluid in the brain cavities, which is known as hydrocephalus and excess fluid surrounding the brain within the skull. There has been descriptions of a variety of poorly formed or even absent brain structures and those really have been described throughout the brain. So you can have abnormalities in the cerebral hemisphere, there have been abnormalities in the cerebellum, there’s been absence of the corpus callosum, abnormalities in the thalamus, and even in the brainstem. And then many of these infants have abnormalities in the development of the eyes also which are closely related to the brain. Next slide. So as Sonja mentioned the fetal brain disruption sequence is a very rare condition. It was first described in 1984, though it had been referred to in the literature before that. And we think this is what is happening with these babies in Brazil. There’s infection and damage to the brain, the skull collapses, the skin kind of folds and you see these children with this severe microcephaly and these folds in the scalp.

Next slide please. There are a number of other outcomes that have been described in these babies. As I said there can be abnormalities of the eyes, many of them have hearing impairment, they can have seizures, difficulty swallowing, hypertonicity or posturing of the limbs, contractors muscles that are tense, some of them have club foot, many of them have severe irritability, some developmental delays have been described and then there can be just overall growth abnormalities. There has been described intrauterine growth restriction as I talked about where all of the measurements are small the baby is just a very small as well as those that are normal except for the head size.

Next slide please. So Sonja has described how we are tracking the pregnancies that - where there’s been a Zika infection and following those outcomes. The other thing that we want to do is look at the population of children that have these kinds of abnormalities to learn more about them and see how frequently these occur and watch over time. And so there is a draft funding opportunity announcement that’s been posted on the Health and Human Services Grants Forecast website. It’s not final yet. It’s not published but we hope it will be in about a month’s time.

And this is to fund state programs to conduct surveillance, prevention and intervention activities with infants with microcephaly and other adverse outcomes that are related to the Zika virus. The intent is to establish, enhance and maintain rapid population based surveillance of microcephaly and other outcomes especially central nervous system abnormalities that are possibly linked to virus infection during pregnancy using an active case finding methodology. The programs would participate in centralized pools, clinical, and surveillance data projects. The intent would be to ensure that affected infants and families are referred to the services that they need and to assess the health and developmental outcomes of these children.

Next slide please. So these children could be identified from a number of settings. Certainly where deliveries occur so birth hospitals but also birthing centers, midwife practices. We need to not forget about home births when they happen and also where elective terminations are performed after pre-natal diagnosis of defects. These children can also be identified through those settings where they’re seen and evaluated clinically. So pediatrician’s offices, family practice clinics, also subspecialty clinics, pediatric neurologists and geneticist, developmental clinics and early intervention programs many of these infants may - could end up there as well. And then we really need to encourage reporting by healthcare providers and programs as rapidly as we can. And we need to make that as simple a process as possible.

Next slide. So this would be to have states educate the healthcare community about Zika related outcomes and why the reporting is so important. One suggestion is that you may want to provide a letter from the state health commissioner or someone in authority at the state health department that outlines why this is important, the need for the reporting, the circumstances that allow physicians to report to them. We suggest that you may want to collaborate with state professional societies, so the state chapter of the American Academy of Pediatrics, and the American Academy of Family Practice, and the American College of Obstetricians in Gynecology and the State Hospital Association all can help inform providers who care for these children about the need to report and follow them. And that it’s important to provide feedback and ongoing updates to the community to maintain reporting and ascertainment going forward.

Next slide please. So a couple of other places you can get information. For clinical questions, there is an email at zikamch@cdc.gov where you can send clinical inquiries. And I promise will be answered. There is information about microcephaly, including a webinar on how to conduct surveillance for microcephaly. Some of the things that we’ve talked about today that’s available from the birth defects website, CDC website. And I gave you the link there. And then the National Birth Defects Prevention Network is an organization that works with state birth defect programs and supports them, collaborates, produces guidelines and publications and such. And that may be a source of information about kind of how to address these outcomes in your community.

Next. And so with that I want to thank you and thank everyone who has collaborated with us throughout this outbreak and putting this information together. And I think we’re ready now to take questions.

Operator: Certainly. If you’d like to ask a question, please unmute your phone first, press \* 1 and record your name. I do require your name to introduce your question. If you’d like to withdraw your question, you can press \* 2, but again to ask a question please unmute your phone first, press \* 1 and record your name. It does take a few moments for the questions to come through however, so please stand by.

Dr. Sonja Rasmussen: So we received some questions by email in advance so we thought while we were waiting for you all to ask us some questions we’d start with those questions we got by email. So the first one is something I have seen from at least two different sources is the theory that microcephaly cases in Brazil are caused by exposure to toxic chemicals rather than Zika virus.

And so to address that concern I want to say yes that we have seen those rumors as well. That concern is particularly related to a pesticide that’s been used for decades, and it’s never been linked previously to microcephaly. And it also wouldn’t explain the Zika virus that’s been seen in the brain of some of the babies with microcephaly. It also wouldn’t explain the Zika virus and the microcephaly that’s been seen in some travelers. In fact there has been microcephaly seen in travelers who have been in one of the countries in as short as a week and so as toxic chemical of exposure of less than one week seems unlikely. And then also we’re beginning to see microcephaly in other countries. It’s been seen retrospectively following the outbreak in French Polynesia. And then there are beginning to be cases seen in Colombia and other countries. So that’s that first question. Janet do you want to…

Dr. Janet Cragan: Sure. Another question we had says it seems pretty clear that Zika is causing damage to developing brains and that it can cause neurologic effects in adults, has there been any research on Zika infection in young children whose brains are still developing to determine if infection can cause damage even if it is at a lesser extent than for fetuses? And so I’m not aware of any studies looking at long term outcomes in development in children who have acquired Zika virus not congenital, but they acquired infection. There was a study from the outbreak in Yap that looked at short-term outcomes in children who had Zika virus and did not show any long-term any abnormalities once they had recovered.

I do know that data are being collected and analyzed in Brazil and Colombia to look at children who have Zika infection, but I think that’s mostly at this point focused on the acute infection and describing that. So we don’t have any real data on long term outcomes following childhood Zika infection, but we do have some precedent from other viruses. So, for example, cytomegalovirus, which we know causes damage to the fetus during pregnancy if the mother’s infected. I mean CMV infection also is very common in young daycare preschool age children. And there’s - no never been any reports of long-term problems following CMV. So we don’t have the exact data to answer that. We don’t think there’s any long term problem. We don’t have any evidence yet to show it but we’re still looking into it.

Dr. Sonja Rasmussen: Another question that we got we have two more and then we’ll be able to take yours. In the event of local transmission in the United States and the fact that a high percentage of Zika infections are asymptomatic, it is likely that worried while pregnant women in jurisdictions with local transmission will react to any mosquito bite with request for Zika testing. Is this scenario anticipated? What is the testing policy for exposed asymptomatic pregnant women? And can laboratory capacity surge in the event that there is a big demand in local areas? So to answer that question, yes, this is anticipated, and it actually is already occurring in the United States and Puerto Rico. In the US territory of Puerto Rico, there’s already a significant outbreak, and we do have guidelines in place. They were published in the MMWR in February I believe that are guidelines for during pregnancy for people living for women living in endemic areas people who reside in areas with active Zika virus infection.

What those testing recommendations are is that testing can be offered. And it would be offered at the initiation of prenatal care and then in the mid to second trimester or if women have symptoms. So it’s not every time somebody gets a mosquito bite of course because that could - that would not - that would be a lot of testing. The recommendations also state that local health officials should determine when that testing should begin. So we’re recognizing that there are local issues that need to be considered and that includes the levels of local transmission and the laboratory capacity in that local area, so both of those are really important. We know that all of the health departments are working hard to get their lab capacity up. And so hopefully that will be less of a concern but the levels of local transmission need to be taken into account.

Dr. Janet Cragan: And then we have another question in. And this one says how long does the Zika virus stay inside the body, for example in an infected male or in a non-pregnant woman? After someone heals two to seven days after the infection is it safe to become pregnant? And what would you suggest the lifetime of the Zika virus inside the body to be? And we can give a little bit of information on that, but I want to emphasize that there’s going to be another webinar conducted on Thursday, June 2, that deals with the topics of sexual transmission and pregnancy planning. And that will go into much more detail about this. The recommendation for males, for example, for a male who has traveled to a Zika area comes back and has an infection, the recommended waiting period at this point is six months. For a woman who’s had infection, it’s just eight weeks.

We really don’t know for certain how long Zika virus stays in the body. It stays in different fluids different amounts of time. And so we - it has been detected in the semen for months following infection. And that’s why the longer recommendation for males. But I encourage you to call into the upcoming webinar, which will go into more detail about this.

Man 1: Great. Operator, can we go to the lines for questions?

Opoerator: Yes certainly. We do have one question queued up from (Elizabeth Talbot). Your line is open.

(Elizabeth Talbot): Hi, (Elizabeth Talbot) from the state of New Hampshire. I’d appreciate it if you’d share your rationale for the inclusion to your pregnancy surveillance system? I noticed that of course pregnancy and infection are important components of defining those who will be part of the surveillance system but it’s not necessarily concurrent. It may follow nicely on previous questions but to ask if a woman has traveled, she acquires infection, and she conceives even at eight weeks after it sounds like you want to include such a woman in the surveillance database? Can you help us understand the temporality of inclusion?

Dr. Sonja Rasmussen: So I’m going to refer you to Dr. (Katie Arnold) who is our US Zika Pregnancy Registry expert, it looks like your phone is on the screen.

Dr. (Katie Arnold): Hi. This is (Katie Arnold), with the Registry. We are accepting women who have been exposed to Zika virus within the periconceptional period as well. And I believe that the period of time in the care conception that is accepted is two weeks but I can verify that and send that back out.

Dr. Sonja Rasmussen: Are there other questions, Operator?

Operator: Our next question comes from (Hope Tranberg). Your line is open.

(Hope Tranberg): Hi. I’m sorry I think you guys already answered my question. I was just curious how long like if a woman is infected and she’s not pregnant does she have a chance later on like if she does conceive a child is she still at risk but I’m assuming that’s just still not known it sounded like?

Dr. Sonja Rasmussen: Yes. What we believe is that the risk is when the virus is in her blood. And so we need to wait for a time for that virus to clear her blood. And we believe based on what we know from other viruses and what we know so far from Zika virus that once it’s clear from her blood which should be in the first week to ten days that she would not be at risk of having a baby with problems. However our recommendations are set to be as safe as we can be as we could possibly be and so the recommendations are to wait eight weeks.

(Hope Tranberg): Got you.

Dr. Sonja Rasmussen: We expect after that that she would not be at risk of having a baby with problems.

(Hope Tranberg): I see, okay. Thank you.

Operator: Our next question comes…

Brant Goode: And is there something from…

Operator: The next question comes from (Carlos Plascencia). Your line is open.

(Carlos Plascencia): Yes, I was wondering if you’d found Zika virus in breast milk?

Dr. Janet Cragan: Zika virus RNA has been detected in breast milk I think in pretty low levels. But there’s no - there haven’t been any reports or evidence of actual transmission of active virus infections through the breast milk. You can find, you know, bits and pieces of the RNA there. So at present we really feel like the benefits of breastfeeding, you know, really outweigh any very small risk of infection that might be there but we haven’t seen that yet.

Dr. Sonja Rasmussen: Next question.

Brant Goode: Operator, do we have more questions?

Operator: Yes. The next question comes from (Julia Stephanski). Your line is open.

(Julia Stephanski): You answered my question. Thank you.

Operator: And we have one more queued up here from (Steve Englander). Your line is open.

(Steve Englander): Thank you. Is there anything known about the duration of immunity after Zika infection that might reassure women who were infected in endemic areas for subsequent pregnancies? Are there any - is there anything that’s looking back in French Polynesia to try and gather data on what might be an important topic?

Dr. Sonja Rasmussen: There is really limited information about that right now. We would expect that there would be long lasting immunity based on other infections, but we really don’t have that information right now. It’s going to be another one of those many questions that we’re working to answer.

Brant Goode: That would be also a reason to tune in to some of the later teleconferences.

Operator: And we have one more question queued up from (Mary). Your line is open.

(Mary): Yes. Where can we find the slides for this presentation? We’re on a telecast.

Dr. Sonja Rasmussen: They’re posted on the Zika (unintelligible) follow-up website. You’ll have difficulty probably finding that on your own but it was in the invite that went out. And it’s also in all of the email reminders if you got any of those. You can respond to the preparedness box; its preparedness@cdc.gov, and we’ll send you the link to find it on our previous emails.

Operator: And I have no further questions in queue.

Brant Goode: Okay. Well I’m going to take the prerogative and ask a question just regarding follow-up for infants who were born with microcephaly. We heard about the serious adverse outcomes, but let’s talk a little bit about services that we might expect need to be planned for some of these children. Are there lessons from other parts of the world where microcephaly has been a much more pressing issue that we might learn from here as we’re…

Dr. Sonja Rasmussen: Sure. I think these infants are going to need the same kind of care that infants with similar type of neurologic abnormalities from other causes would need. And actually there are guidelines on the CDC website for evaluation and testing of infants of mothers who had Zika during pregnancy or infants who have microcephaly and brain anomalies. And it also walks through some of the evaluations that these children need to have.

So, you know, but it really is guided by their clinical presentation and how severe the abnormalities are and what kind of problems they are having. But we feel like, you know, all of the children absolutely need to have a hearing evaluation, you know, their regular screening but then a follow-up evaluation for that as well. They all need to have an eye - good eye exam and, you know, assessment of their vision. They may need to be seen by a pediatric neurologist if they have severe problems. They should all have close follow-up of their growth and their developmental milestones as they grow.

And then depending on what those things show if they have other, you know, dysmorphic features or other things that make you think there may be something genetic going on than a genetics evaluation absolutely is important. But based on those kind of evaluations then they need to be referred to whatever early intervention programs or services are available services for children with special healthcare needs. So I think it’s important to, you know, really look into what services are available in your state because they vary state to state. Look at the legislation and what are the conditions that allow children to qualify for those services.

At the present there are not any special programs set up for children with Zika virus infection congenital infection so you have to work through the existing programs that are there. But I would get in touch with the Maternal Child Health Services in the health department. If you have – if your state has a birth defects program existing one part of what they often do is make sure that children with birth defects get into the care and the services that they need so if that existing infrastructure is there try to build on that for these children as well.

Dr. Janet Cragan: So for the person that asked about the website with the slides I do have that website. It’s kind of long so it’s www.cdc.gov/zika/public-health-partners/ZAP Z-A-P-teleconferences (plural).html.

Dr. Sonja Rasmussen: And then we have one more question that says, are babies born with microcephaly still contagious? And I don’t think so. It depends on the timing of the infection in the mother and how long that is between that and the delivery. And, you know, I don’t think we really know whether they are still infectious or not. But they - but, you know, it’s that same thing of how long does the virus circulate in the blood. And one of the issues is that we are now just really learning the Zika virus tends to stay in the urine for a longer period of time then in the blood. And so whether infants may still have positive urine that has active virus particles in it that’s a possibility. We certainly see that with cytomegalovirus where the infant can shed the virus for months or even years later and be infectious to people who have never been exposed to that virus before. So whether that’s going to happen with these infants we’ll just, you know, we’re going to have to figure that out.

Man: Proper follow-up and lab monitoring (unintelligible) okay?

Brant Goode: Operator do we have any other questions in the queue?

Operator: We did get a couple more. This first one comes from (Darren Will). Your line is open.

(Darren Will): Yes. Mine has to do with the carrier mosquito in regions where we’re seeing this as a possible epidemic. We live in a northern climate. We’re in North Dakota. And, you know, we’re just kind of wondering do the mosquitoes that tend to live in the northern climates, are they a possible carrier down the road or do we not know that yet?

Dr. Sonja Rasmussen: The information that we have looks like North Dakota we wouldn’t expect to see to see a lot of cases in North Dakota due to a mosquito bite. But of course even in North Dakota there is a chance for sexual transmission so although it may not be as widespread - and travelers of course - travelers returning from places. And of course if there is widespread transmission in the United States there would be a lot more places where you could see - could have people traveling from that could be returning to North Dakota. But the mosquito areas does not - for the two types of mosquitoes the *Aedes aegypti* and the *Aedes albopictus* do not extend from - based on information we know now do not extend to North Dakota.

Brant Goode: We’d also refer you to the call next week on May 17 about vector surveillance and control.

(Darren Will): Okay, thanks.

Operator: And our next question comes from Dr. (Sarah Conte-Lohan). Your line is open.

Dr. (Sarah Conte-Lohan): Hi. This is Dr. (Conte). So two things I’m very interested in the grants and was just wondering, I see towards the bottom the federal agency contact information. Are you all helping to support some technical assistance and putting the applications together or something?

Dr. Janet Cragan: Yes. The actual announcement has not been announced - not been published yet. We’re still waiting for that. So this is a forecast to let people know that it’s upcoming. And I think there will be additional information about the application once it’s published and they’re accepting the applications to come in.

Dr. (Sarah Conte-Lohan): Right. But I just know that I guess the application the estimated application due date of June 21 or is in the stone right now?

Dr. Janet Cragan: It’s not written in stone. At this point we are hoping that the announcement will be published in the early part of June. So I suspect that may be delayed a week or two. But once it is published then the definite dates will be there.

Dr. (Sarah Conte-Lohan): Oh great. And the other thing I noticed on slide 29 your suggestion of collaborating with state professional societies what I would I guess ask you to add is here in North Carolina we have also reached out to our state Board of Nursing because we have mid-level providers.

Dr. Janet Cragan: Oh that’s a great suggestion, thank you yes.

Dr. (Sarah Conte-Lohan): So thank you very much for the Webinar and everything that you’re doing for us.

Brant Goode: Thank you.

Dr. Janet Cragan: Thank you.

Operator: And I have no further questions in queue.

Brant Goode: One more question from the room here which is what are states doing to prepare? It’s a broad question but do you want to talk about that a bit more?

Dr. Sonja Rasmussen: Perhaps maybe our state and local…

(Harald Pietz): Right. So really that was not a question -- Hi this is (Harald Pietz) from the Division of State and Local Readiness, and the example from North Carolina, thank you, was just really sparking that kind of question, is the extra level of effort and other thing the states are doing within their state to prepare for Zika in the upcoming increase in temperatures and the likelihood for active mosquitoes in these zones that will have *albopictus* and *aegypti* mosquitoes.

So not to pull it out and delay this call longer, but if you have specific activities that you’re doing in there, and you want to present those to CDC, we really want to make sure that we have a good understanding of what the needs are in the field, what the activities are occurring in the field, and how we can better support or provide guidance to meet your practical applications out in the states and the local health departments and out on the reservation. So if you have things that you’d like to share with CDC, we would love it if you would give us a shout to the CDC, preparedness@cdc.gov email address. Thank you. And we have an evaluation question? Not for this?

Man 2: Not for this one. Did you have anything you wanted to add (Laura) about CE?

(Laura): Continuing education credits are available for a wide variety of professions. If you go to the website that was previously mentioned, you will find that there’s a file that you can download that has information about how you can go to the training and continuing education online Web site hosted by CDC. If you already have a login, terrific; if not, you’ll need to create a login. And at that point you will need to complete a post check; it’s very short very brief based on the content that was presented today on the slides and that you heard from the presenters. And you’ll also need to complete a brief evaluation. And once you do both of those things, you’ll be able to immediately download a certificate with your continuing education credits.

Man 2: Thank you (Laura).

Brant Goode: Okay. Well if we have no more questions in the queue or in the room, I’d like to thank Doctors Cragan and Rasmussen for their presentation today. Thank you so much.

Dr. Janet Cragan: Thank you.

Dr. Sonja Rasmussen: Thank you.

Brant Goode: Operator, thank you. We are done.

Operator: And that does conclude the call for today. Thank you all for participating. You may disconnect at this time.

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