CDC’S Response to Zika

Delight Satter, MPH
Tribal Liaison/SME, SCTF, Zika Response
Senior Advisor, Tribal Research and Program Integration, OSTLTS

Enrolled tribal member: Confederated Tribes of Grand Ronde, OR

IHS Clinical Rounds - Zika Provider Update

Webinar

June 29, 2017
Tribal Zika Response
Background

- Tribal communities have heightened concern
  - Historic experience with infectious disease
  - Higher burden of risk, health consequences, access to care barriers
- Available resources
  - Tribes have limited resources
  - Complex state – tribal relationships
  - Tribes have not been able to directly access opportunities such as Public Health Emergency Preparedness (PHEP) cooperative agreement
Government-to-Government Relationship

• CDC/ATSDR recognizes its special commitment and unique relationship with Indian tribes and is committed to fulfilling their critical role in promoting the health and safety of Indian tribes.

• CDC will
  » Honor the sovereignty of Indian tribal governments
  » Respect the inherent rights of Indian tribal self-governance
  » Continue to work on a government-to-government basis

• Government-to-government consultation will be conducted with elected Indian Tribal Leaders or their designated representatives, to the extent practicable and permitted by law, before any action is taken that will significantly affect Indian tribe(s).

*Reference: Revised CDC/ATSDR Tribal Consultation Policy (rev. 2013)
Indian Tribes and Estimated Range of *Aedes aegypti* in the United States, 2016*

- **Red**: Indian tribes
- **Light blue**: Estimated range of *Aedes aegypti*

The estimated range of *Aedes aegypti* on this map represents:
- CDC's best estimate of the potential range of *Aedes aegypti* in the United States.
- Areas where *Aedes aegypti* mosquitoes are or have been previously found.

*The estimated range map has been updated from a variety of sources. This map represents CDC's best estimate of the potential range of *Aedes aegypti* in the United States. This map is not meant to represent risk for spread of disease.*


**DATA SOURCES:**
- Estimated range of *Aedes albopictus* and *Aedes aegypti* in the United States, 2016: Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Vector-Borne Diseases (DVE), April 7, 2016.
Partnering and Collaboration

- Across Zika response, CDC, HHS
  - Established Tribal Liaison role in State Coordination Task Force
  - Task force engagement and efforts
  - Extensive collaboration and co-planning with IHS
  - Technical Assistance for HHS Regional Offices, Secretary
  - Multiple national and regional Zika calls, presentations, webinars
  - Briefings - Dr. Friedens’ meeting with Rep. Tom Cole regarding Zika tribal specific activities, etc.

Alaska Native Mosquito Mask Image:
Partnering and Collaboration

- **External**
  - Tribal Advisory Committee (TAC) members and representatives from NIHB and AAIP attended the Zika Action Plan (ZAP) Summit
  - Cooperative Agreement with the National Indian Health Board (NIHB)
  - Technical assistance for tribes
  - States encouraged to work w/ tribes to coordinate Zika planning and response through PHEP
  - Listening sessions
  - Academic partners
  - Others
Efforts in Progress

- Tribal pre-CDC Emergency Response Team deployment
- Tribal Zika summits (AZ, FL, AK)
- Webinars and trainings
- CDC Public Health Law Program News
- Inclusion of tribal expertise in future
- IHS and Tribal Epi-Center trainings and activities
- And more…..
CDC Zika Educational Materials, Tools, and Resources

http://www.cdc.gov/zika

Click on Communication Resources
Non-federal resources

- International resources
- State resources
- CDC funded partners
  » NIHB resources
  » Academic resources
- Tribal resources
State and local resources (examples)

- Arizona Department of Health Services
  - Fight the Bite Toolkit, etc.
  - Link: http://azdhs.gov
Academic resources (examples)

• **The American Academy of Pediatrics** Zika page
  » Resources for pediatricians

• **Mountain West Preparedness and Emergency Response Learning Center**
  » Various resources
Zika virus

Zika Virus 101 and Current Domestic and International Situation

Dr. Maleeka Glover
Director, Medical Investigations Team (MIT)
CERT/Clinical Inquiries

June 29, 2017
ZIKA VIRUS EPIDEMIOLOGY
What is Zika?

- Zika virus is spread to people primarily through the bite of an infected Aedes species mosquito (*Ae. aegypti* and *Ae. albopictus*).
- Many people infected with Zika virus won’t have symptoms or will only have mild symptoms.
- Zika virus infection during pregnancy can cause microcephaly and other severe brain defects.
Where has Zika been found?

- Before 2015, Zika outbreaks occurred in Africa, Southeast Asia, and the Pacific Islands.
- Currently outbreaks are occurring in many countries and territories.

SPREAD AND SYMPTOMS
How is Zika spread?

- Zika can be spread through
  - Mosquito bites
  - From a pregnant woman to her fetus
  - Sex with an infected person
  - Laboratory exposure
- Zika may be spread through blood transfusion.
- No reports of infants getting Zika through breastfeeding.
How does Zika affect people?

- Many people with Zika will not have symptoms or will only have mild symptoms.
- Symptoms last several days to a week.
- People usually don’t get sick enough to go to the hospital.
- People very rarely die of Zika.
What are the symptoms?

• For people with symptoms, the most common symptoms of Zika are
  » Fever
  » Rash
  » Headache
  » Joint pain
  » Conjunctivitis (red eyes)
  » Muscle pain
Zika virus clinical disease course and outcomes

- Clinical illness is usually mild.
- Symptoms last several days to a week.
- Severe disease requiring hospitalization is uncommon.
- Fatalities are rare.
- Research suggests that Guillain-Barré syndrome (GBS) is strongly associated with Zika; however only a small proportion of people with recent Zika infection get GBS.
Incubation and viremia

- Incubation period for Zika virus disease is 3–14 days.
- Zika viremia ranges from a few days to 1 week.
- Some infected pregnant women can have evidence of Zika virus in their blood longer than expected.
- Virus remains in semen and urine longer than in blood.
TESTING
How is Zika diagnosed?

- A doctor or other healthcare provider will ask about any recent travel and any signs and symptoms.
- A blood or urine test can confirm a Zika infection.
Who should be tested for Zika?

- Anyone who has or recently had Zika symptoms
  - And lives in or traveled to any area with risk of Zika, or
  - Had unprotected sex with a partner who lives in or traveled to any area with risk of Zika
Who should be tested for Zika?

- All pregnant women (regardless of symptoms) who
  - Live in or recently traveled to an area with risk of Zika that has a CDC Zika travel notice, or
  - Had unprotected sex with a partner who lives in or traveled to an area with risk of Zika that has a CDC Zika travel notice

- Pregnant women who live in or recently traveled to an area with risk of Zika but **without** a CDC Zika travel notice
  - If they develop symptoms of Zika, or
  - If their fetus has abnormalities on an ultrasound that may be related to Zika infection
Testing babies for Zika

CDC recommends laboratory testing for

- All infants born to mothers with laboratory evidence of Zika virus infection during pregnancy
- Infants who have abnormal clinical or neuroimaging findings suggestive of congenital Zika syndrome and a mother with a possible exposure to Zika virus, regardless of maternal Zika virus testing results
WHAT TO DO IF YOU GET INFECTED
How is Zika treated?

• There is no specific medicine or vaccine for Zika virus infection.

• Treat the symptoms
  » Rest
  » Drink fluids to prevent dehydration
  » Do not take aspirin or other non-steroidal anti-inflammatory drugs (NSAIDS)
  » Take acetaminophen (Tylenol®) to reduce fever and pain
What to do if you have Zika

• Protect yourself from mosquito bites. During the first week of illness, Zika virus can be found in blood.
• The virus can be passed from an infected person to a mosquito through bites.
• An infected mosquito can spread the virus to other people.
SURVEILLANCE
Reporting of Zika in the United States

• Healthcare providers should report cases to their local, state, or territorial health department.

• State and territorial health departments are encouraged to report confirmed cases to CDC through ArboNET, the national surveillance system for arboviral diseases.

• Pregnant women with any lab evidence of possible Zika virus infection should be reported to the US Zika Pregnancy Registry.

For the most recent case counts, visit https://www.cdc.gov/zika/geo/united-states.html.
PREVENTION

Protect from mosquito bites
Control mosquitoes outside

• Here’s what you can do to help control mosquitoes outside your home
  » Once a week, empty and scrub, turn over, cover, or throw out items that hold water.
  » Tightly cover water storage containers.
  » Use larvicides to kill larvae in containers of water that cannot be emptied and will not be used for drinking.
  » Use an outdoor insect spray made to kill mosquitoes in areas where they rest.
  » If you have a septic tank, repair cracks or gaps.
Control mosquitoes inside

• Here’s what you can do to help control mosquitoes inside your home:
  » Use window and door screens.
  » Use air conditioning when possible.
  » Once a week, empty, scrub, turn over, or throw out items that hold water.
  » If you have mosquitoes inside your home, use an indoor insect fogger or indoor insect spray.
• When using insecticides, always follow label directions.
Wear insect repellent

- Use Environmental Protection Agency (EPA)-registered insect repellents.
  - Use a repellent with one of the following active ingredients: DEET, picaridin, IR3535, or oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone.
- Always follow the product label instructions.
- Do not spray repellent on the skin under clothing.
- If also using sunscreen, apply sunscreen before applying insect repellent.
Create a barrier between you and mosquitoes

• Cover up exposed skin
  » Wear long-sleeved shirts and long pants.

• Treat clothing and gear
  » Use permethrin* to treat clothing and gear or buy pre-treated items.
  » See product information to learn how long the protection will last.
  » Do not use permethrin products directly on skin.

* Permethrin is not effective in Puerto Rico.
Protect your family

• For babies and children
  » Dress your child in clothing that covers arms and legs.
  » For children older than 2 months, use insect repellent on exposed skin.
  » Cover crib, stroller, and baby carrier with mosquito netting.
**Protect your family**

- Applying insect repellent on children
  - Do not apply repellent onto hands, eyes, mouth, and cut or irritated skin.
  - Adults: Spray onto your hands and then apply to a child’s face.
  - Do not use insect repellent on babies younger than 2 months old.
  - Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old.
INFECTION CONTROL IN HEALTHCARE SETTINGS
Infection control

- Standard Precautions should be used to protect healthcare personnel from all infectious disease transmission, including Zika virus.
  » Body fluids, including blood, vaginal secretions, and semen, have been implicated in transmission of Zika virus.
  » Occupational exposure that requires evaluation includes percutaneous exposure or exposure of non-intact skin or mucous membranes to any of the following: blood, body fluids, secretions, and excretions.
Labor and delivery settings

- Healthcare personnel should assess the likelihood of the presence of body fluids or other infectious material based on the condition of the patient, the type of anticipated contact, and the nature of the procedure or activity that is being performed.
- Apply practices and personal protective equipment to prevent exposure as indicated.
WHAT CDC IS DOING
What is CDC doing?

• Activated Emergency Operations Center (EOC) to level 1
• Alerting healthcare providers and the public about Zika
• Posting travel guidance
• Monitoring infections among pregnant women to identify the long-term consequences of congenital Zika infection.
• Working with clinical experts and organizations to update guidance
• Researching factors that might affect birth defects in fetuses and babies, including the timing of Zika infection during pregnancy.
• Improving laboratory testing for Zika and providing state, tribal, local, and territorial health laboratories with diagnostic tests.
CDC is working with partners to

- Monitor and report cases of Zika.
- Conduct studies to learn more about the potential link between Zika and Guillain-Barré syndrome.
- Create action plans for state and local health officials to improve Zika preparedness.
- Publish and disseminate guidelines to inform testing and treatment of people with suspected or confirmed Zika.
- Working with partners to better understand the risk and spectrum of birth defects from Zika infection during pregnancy and risks for sexual transmission.
Cumulative Zika Virus Disease Case Counts in the United States, 2015-2017

- **US States**
  - 5,296 symptomatic Zika virus disease cases reported
    - 5,024 cases in travelers returning from affected areas
    - 224 cases acquired through presumed local mosquito-borne transmission
    - 48 cases acquired through other routes, including sexual transmission (N=46), laboratory transmission (N=1), and person-to-person through an unknown route (N=1)

- **US Territories**
  - 36,595 symptomatic Zika virus disease cases reported
    - 143 cases in travelers returning from affected areas
    - 36,452 cases acquired through presumed local mosquito-borne transmission
    - 0 cases acquired through other routes

Data cumulative provisional data reported to ArboNET for January 1, 2015 - June 21, 2017
Zika in the United States

• Local mosquito-borne spread of Zika virus was identified in Miami-Dade County, Florida, and Brownsville, Texas.

  » Pregnant women should consider postponing travel to Brownsville, Texas (currently a yellow area).

  » CDC lifted the yellow area designation for Miami-Dade County on June 2, 2017.
CDC’s Response to Zika

Zika, Pregnancy, and Congenital Zika Virus Infection

Indian Health Service Clinical Rounds
Zika Virus Update for Providers

D’Nyce Williams, MD, MPH, MPA
Contractor, Chickasaw Nations Industries
Clinical Team, Pregnancy and Birth Defects Task Force
June 29, 2017

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Zika Virus infection in Pregnant Women

- **Pregnant women can be infected with Zika virus**
  - Infection can occur in any trimester
  - No evidence that susceptibility or severity of infection is different in pregnant women compared to non-pregnant women
  - Zika virus has been detected in amniotic fluid, placenta, fetal brain and products of conception

- **If infected during pregnancy**
  - Zika virus can be passed to the fetus during pregnancy or around the time of birth

- **If infected around the time of conception**
  - Zika virus might present risk to the fetus
Zika Virus Infection is a Cause of Microcephaly

Criteria for Proof of Human Teratogenicity
Items 1-3 OR 1, 3, 4 are essential criteria, 5-7 are helpful, but not essential

**Update**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Criterion Met?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Proven exposure to agent at critical time(s) during prenatal development</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Consistent findings by ≥2 high-quality epidemiologic studies</td>
<td>Partially Yes</td>
</tr>
<tr>
<td>3. Careful delineation of clinical cases</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Rare environmental exposure associated with rare defect</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Teratogenicity in experimental animals {important but not essential}</td>
<td>No Yes</td>
</tr>
<tr>
<td>6. Association should make biologic sense</td>
<td>Yes</td>
</tr>
<tr>
<td>7. Proof in an experimental system that the agent acts in an unaltered state</td>
<td>NA</td>
</tr>
</tbody>
</table>
Congenital Zika Syndrome

- Distinct pattern of birth defects in fetuses and infants of women infected during pregnancy
- Associated with 5 types of birth defects not seen or rarely seen with other infections during pregnancy
  - Severe microcephaly (small head size) resulting in a partially collapsed skull
  - Decreased brain tissue with brain damage
  - Damage to the back of the eye with a specific pattern of scarring and increased pigment
  - Limited range of joint motion, such as clubfoot
  - Too much muscle tone restricting body movement soon after birth
Congenital Zika Syndrome

- Associated with five types of birth defects:
  - **Severe microcephaly (small head size) resulting in a partially collapsed skull**
  - **Decreased brain tissue with brain damage**
  - Damage to the back of the eye with a specific pattern of scarring and increased pigment
  - Limited range of joint motion, such as clubfoot
  - Too much muscle tone restricting body movement soon after birth
Congenital Zika Syndrome

• Associated with five types of birth defects:
  » Severe microcephaly (small head size) resulting in a partially collapsed skull
  » Decreased brain tissue with brain damage
  » **Damage to the back of the eye with a specific pattern of scarring and increased pigment**
  » Limited range of joint motion, such as clubfoot
  » Too much muscle tone restricting body movement soon after birth
Congenital Zika Syndrome

- Associated with five types of birth defects:
  - Severe microcephaly (small head size) resulting in a partially collapsed skull
  - Decreased brain tissue with brain damage
  - Damage to the back of the eye with a specific pattern of scarring and increased pigment
  - Limited range of joint motion, such as clubfoot
  - Too much muscle tone restricting body movement soon after birth
Many Questions Remain

• What is the range of potential health problems that Zika virus infection may cause?
• What is the risk for later health problems in an infant who is without abnormalities at birth?
• What are other factors (e.g., co-occurring infection, symptomatic vs asymptomatic) that might affect the risk for birth defects?
Collecting Data
Surveillance of Pregnant Women, Fetuses, and Infants

US Zika Pregnancy Registry

Zika Active Pregnancy Surveillance System (Puerto Rico)

US Zika-Related Birth Defects Surveillance
US Zika Pregnancy Registry

- Established in early 2016
- Collects information about pregnancy and infant outcomes following laboratory evidence of Zika virus infection during pregnancy to inform clinical guidance and public health response
  - Estimate the proportion of fetuses and infants with birth defects
  - Provide information to inform the phenotype of congenital Zika syndrome
  - Facilitate referral to care for infants with possible congenital Zika virus infection
Zika Active Pregnancy Surveillance System (Puerto Rico)

- Developed by The Puerto Rico Department of Health and Centers for Disease Control and Prevention
- Same purpose as US Zika Pregnancy Registry, but tailored to the specific needs of Puerto Rico
- Medical record abstraction of pregnancy and infant records
- Follows infants to 3 years of age
Pregnant women with any laboratory evidence of possible Zika virus infection in the United States and Territories

1,963*

Pregnant women with any laboratory evidence of possible Zika virus infection in the 50 US states and DC

4,107**

Pregnant women with any laboratory evidence of possible Zika virus infection in US territories

*Includes aggregated data reported to the US Zika Pregnancy Registry as of June 13, 2017

**Includes aggregated data from the US territories reported to the US Zika Pregnancy Registry and data from Puerto Rico reported to the Zika Active Pregnancy Surveillance as of June 13, 2017
Potential Risk of Birth Defects Related to Zika Virus

Nearly 1,000 US pregnant women with laboratory evidence of Zika completed their pregnancies in 2016*, and some had infants with Zika-related birth defects:

- **5%** with *possible* Zika had birth defects
- **10%** with *confirmed* Zika had birth defects

*Data from US Zika Pregnancy Registry (50 states and DC)

Zika-Related Pregnancy Outcomes in US Territories

- 2,549 women in the US territories with laboratory evidence of recent possible Zika virus infection completed their pregnancy
  - 122 (5%) had fetuses or infants with Zika-related birth defects
- Among pregnant women with positive nucleic acid test results confirming Zika virus infection
  - 8% infected in the 1st trimester had a fetus or infant with birth defects
  - 5% infected in the 2nd trimester had a fetus or infant with birth defects
  - 4% infected in the 3rd trimester had a fetus or infant with birth defects

Symptomatic Versus Asymptomatic Infections

- Similar proportion of pregnancies with birth defects among symptomatic and asymptomatic pregnant women
  - Two reports from the US Zika Pregnancy Registry: about 6%
  - Data from US territories: about 5%
Referral to Services – Infants with Birth Defects

Infant & Child Follow-Up for Prenatal Zika Virus Exposure

Pregnancy Registries (USZPR / ZAPSS)
Pregnant women and infants with laboratory evidence of possible Zika virus infection

Birth Defects Surveillance
All infants with Zika related birth defects, with and without congenital Zika exposure

US Zika Pregnancy Registry and Zika Birth Defects Surveillance Complement Each Other

Referral to Services – Infants with Birth Defects
Baseline Prevalence of Birth Defects Observed with Zika

- Used data from birth defects surveillance systems in Massachusetts, North Carolina, and Atlanta, Georgia, during pre-Zika outbreak years (2013-2014)
- Compared with data from US Zika Pregnancy Registry
- Prevalence of Zika-related birth defects before Zika outbreak in the Americas:
  - 3 out of every 1,000 births
- Proportion of infants with birth defects among completed pregnancies with possible Zika infection (2016):
  - 58 out of every 1,000 completed pregnancies

Researchers estimate a 20-fold increase in Zika-related birth defects in pregnancies with possible Zika infection compared with pre-Zika years.

Prevention
Do Not Travel to Areas with Active Zika Virus Transmission

• Pregnant women should not travel to areas with Zika virus

• If a pregnant woman must travel, she should
  » Talk with her healthcare provider before she goes
  » Strictly follow steps to prevent mosquito bites during the trip
  » Take steps to prevent sexual transmission
  » Talk with her healthcare provider after she returns, even if she doesn’t feel sick

CDC Domestic Guidance

• Zika active transmission (red) areas
  » Area where confirmed, multi-person local mosquito-borne transmission has been identified and the intensity of transmission presents a significant risk to pregnant women.

• Zika cautionary (yellow) areas
  » Areas where local transmission has been identified, but evidence is lacking on whether the intensity of transmission is widespread.

Prevent Mosquito Bites

If a pregnant woman lives in or travels to an area with Zika, she should:

• Wear long-sleeved shirts and long pants
• Stay and sleep in places with air conditioning or that use window and door screens
• Use insect repellents with one of the following EPA-registered active ingredients:
  » DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone
• Once a week, empty and scrub, turn over, cover, or throw out items that hold water, such as trash containers, tires, buckets, toys, planters, flowerpots, birdbaths or pools
Prevent Sexual Transmission of Zika Virus

A pregnant woman whose partner lives in or has traveled to an area with Zika virus should

• Use condoms correctly every time they have sex, or
• Not have sex

For the duration of the pregnancy, even if the pregnant woman’s partner does not have symptoms or feel sick.
Counseling Women and Men of Reproductive Age

- Recommendations for key issues
  - Travel plans
  - Signs, symptoms, treatment and prevention of transmission
  - Pregnancy plans
  - Possible adverse outcomes of Zika infection during pregnancy

Counseling Women and Men of Reproductive Age Who Are Considering Travel to Areas with Risk of Zika

This guide describes recommendations to providers for counseling women and men of reproductive age who are considering travel to areas with risk of Zika. This material includes recommendations from CDC’s interim guidance and talking points to cover while discussing recommendations.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Key Issues</th>
<th>Talking Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess risk of Zika exposure and prevention</td>
<td>Environment</td>
<td>Discuss whether the planned area of travel is an area with risk of Zika. (See CDC Zika Travel Information website.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ask couples who are considering conceiving in the near future to postpone non-essential travel to areas with a CDC travel notice.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss environment in which patient will be staying. Advise traveler to stay in insect-proofed rooms or other accommodations that are air conditioned or have good windows and door screens to keep mosquitoes outside.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss mosquito bite prevention, including mosquito repellent, clothing (including pants and sleeves), and bed net use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss how to prevent sexual transmission during and after the trip.</td>
</tr>
<tr>
<td>Discuss Zika infection</td>
<td></td>
<td>Many people infected with Zika won’t have symptoms or will have only mild symptoms. The most common symptoms of Zika are fever, rash, arthralgia, and conjunctivitis. Other common symptoms include myalgia and headache.</td>
</tr>
<tr>
<td></td>
<td>1. Signs and symptoms of Zika virus disease</td>
<td>Illness usually lasts about a week.</td>
</tr>
<tr>
<td></td>
<td>2. When to seek care</td>
<td>Zika infection during or just before pregnancy may cause poor pregnancy and infant outcomes, including birth defects.</td>
</tr>
<tr>
<td></td>
<td>3. Treatment</td>
<td>Guidelines on Zika virus disease are based on limited data.</td>
</tr>
<tr>
<td></td>
<td>4. Preventing transmission after returning home</td>
<td>People who have possibly been exposed and developed symptoms consistent with Zika should see a healthcare provider and report their illness to their local health department.</td>
</tr>
<tr>
<td>Discuss Zika infection and pregnancy</td>
<td>Possible adverse outcomes of Zika infection during pregnancy</td>
<td>Zika can be passed to the fetus during pregnancy or at delivery if a woman is infected during pregnancy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zika infection during pregnancy can cause miscarriage and other severe fetal brain defects.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Children with microcephaly often have serious problems with development and can have other neurological problems, such as seizures.</td>
</tr>
</tbody>
</table>
| | | Zika has been linked to other problems in pregnancies and among fetuses and infants infected with Zika before birth, such as premature birth, small for gestational age, infants born with microcephaly, and impaired growth.

www.cdc.gov/zika

Testing of Pregnant Women and Infants
Pregnancy Testing Algorithm

Initial Evaluation of Infants with Possible Congenital Zika Virus Infection

• Comprehensive physical exam
  » Head circumference, weight, length measurements
  » Neurologic assessment

• Standard newborn hearing assessment

• Head ultrasound

• Zika virus laboratory testing

https://www.youtube.com/watch?v=HWV1JdAhsSo
Laboratory Testing of Infants with Possible Congenital Zika Virus Infection

Current Interim Guidance

Testing for Zika virus infection is recommended for infants

- Born to mothers with laboratory evidence of possible Zika virus infection
- With clinical or neuroimaging findings suggestive of congenital Zika syndrome and a maternal epidemiologic link*

Additional Considerations

Testing for Zika virus infection should be considered for infants

- Born to mothers with an epidemiologic link for whom
  - There is concern about infant follow-up care
  - Maternal testing was not performed before delivery and exposure was >12 weeks before delivery, or
  - Maternal testing was negative but was performed on a specimen obtained >12 weeks after maternal exposure

*An epidemiologic link includes travel to or residence in an area with risk of Zika, or sex without a condom with a partner who traveled to or lived in such an area

Testing Babies for Congenital Zika Virus Infection: New Considerations

- Testing of cerebrospinal fluid
  - Consider obtaining CSF for Zika virus RNA and IgM antibody testing in infants with clinical findings of possible congenital Zika infection but whose initial laboratory tests are negative on serum and urine.

- Testing beyond 2 days of life
  - Test specimens collected from infants within 2 days after birth
    - Testing specimens collected within the first few weeks to months after birth may still be useful in the evaluation for possible congenital Zika virus infection, especially among infants born in areas without risk of Zika.
Supporting Healthcare Providers

• Guidance and recommendations
  » Travel, testing, and other recommendations for pregnant women
  » Published updates to clinical guidance and algorithms for healthcare providers caring for pregnant women and infants (www.cdc.gov/zika)

• Website Resources
  » Videos, Patient Handouts, and more

Clinicians: Protect your patients!

Scientific Resources
- MMWR Zika Reports
- Resources & Publications
New Tools for Healthcare Providers

CDC's Response to Zika
ZIKA SCREENING TOOL FOR PREGNANT WOMEN

Assess for Possible Exposure to Zika Virus Infection

- Do you live in or do you frequently travel (daily or weekly) to an area with active Zika virus transmission? YES NO

- Have you traveled to an area with Zika during pregnancy or within 8 weeks before conception? YES NO

- Have you had sex (anal, oral, or oral sex) without a condom or shared sex toys with a partner who lives in or has traveled to an area with Zika? YES NO

If Pregnant Patient Answered “Yes” to Any Question, Assess for Signs and Symptoms of Zika Virus Disease

- Do you currently have or have you had in the last 12 weeks: Blisters, rash, joint pain, or conjunctivitis (red eyes)? YES NO

- If your pregnant patient answered “YES” to any of these signs or symptoms, she might have asymptomatic Zika virus infection. Test in accordance with CDC guidance for asymptomatic persons.

- If your pregnant patient answered “NO” to having any of these signs or symptoms, she might have asymptomatic Zika virus infection. Test in accordance with CDC guidance for asymptomatic pregnant women.

Pregnancy & Zika Testing

CDC’s top priority for the public health response to Zika is to protect pregnant women because of the risks associated with Zika virus infection during pregnancy.

Recently, CDC updated its interim guidance for healthcare providers caring for pregnant women with possible Zika virus exposure. This web tool is intended to help healthcare providers apply the updated recommendations for Zika virus testing, interpretation of results, and clinical management for a pregnant woman with possible exposure to Zika virus.

- This tool is intended for healthcare providers and public health officials in the United States.
- CDC continues to evaluate all available evidence and will update recommendations as new information becomes available.

Start

IMPLEMENTING CDC GUIDANCE FOR INFANT NEUROIMAGING AND INFANT AND PLACENTAL ZIKA VIRUS TESTING

Based on national Zika virus exposure and laboratory test results.
Telephone and Online Support

- **24/7 Clinical Inquiries Hotline (Providers and health departments)**
  - Call 770-488-7100 and ask for the Zika Pregnancy Hotline
  - or email ZIKAMCH@cdc.gov*

- **Providers and the general public can also ask questions through CDC-INFO**
  - Call 1-800-CDC-INFO (1-800-232-4636)
  - or visit www.cdc.gov/cdc-info

*Emails may not be responded to after-hours
Thank you!

- More information on Zika:
  - [https://www.cdc.gov/mmwr/](https://www.cdc.gov/mmwr/)

- For questions about CDC’s work related to Zika and Pregnancy, contact CDC-INFO at 1-800-232-4636 or [www.cdc.gov/cdc-info](http://www.cdc.gov/cdc-info)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Post Yellow Area Guidance

• There are no longer travel recommendations for Miami-Dade County
• CDC recommends people living in or traveling to Miami-Dade County continue to protect themselves from mosquito-borne illnesses
Post Yellow Area Guidance: Prevent Sexual Transmission

- Women and men with exposure to these areas from August 1, 2016 to June 2, 2017, should consider taking steps to prevent sexual transmission for the following time periods:
  - The duration of pregnancy
  - At least 8 weeks after yellow area lifted, if female
  - At least 6 months after yellow area lifted, if male
- Continuing risk for sexual transmission because Zika virus can stay in semen longer than in other body fluids

August 1, 2016 Earliest date testing recommended
June 2, 2017 Yellow area lifted
July 28, 2017 (+8 weeks) if female
December 2, 2017 (+6 months) if male
Updated Guidance: Testing as Part of Preconception Counseling for Women Living in or Frequently Traveling to Areas with a CDC Zika Travel Notice

“Prolonged IgM Antibody Response in People Infected with Zika Virus: Implications for Interpreting Serologic Testing Results for Pregnant Women”
May 5, 2017

- Consider IgM testing to determine baseline Zika virus IgM levels as part of preconception counseling
  - Testing before pregnancy can provide information that may help interpret test results in the future.
  - Antibody test results before pregnancy should not be used to determine whether or not it is safe for a woman to become pregnant.

https://emergency.cdc.gov/han/han00402.asp
Pregnancy Planning

• Preventing Zika infections during pregnancy
  » Includes supporting women who want to delay or avoid pregnancy to reduce Zika-related pregnancy complications

• If a woman decides to wait to conceive, HCPs should discuss
  » Strategies to prevent unintended pregnancy
  » Use of the most effective contraceptive methods that can be used correctly and consistently
  » Role of correct and consistent use of condoms, in addition to other birth control method used, in reducing the risk for STIs, including Zika virus