Zika Overview

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What is Zika virus disease (Zika)?
Where has Zika virus been found?

1947-2006:
- Serologic evidence in multiple African & Asian countries
- Only 14 human cases documented

[Map showing distribution of Zika virus]
Where has Zika virus been found?

2007:
- Outbreak in Yap, Micronesia
- Estimated ~75% of population infected
- Only 20% experienced symptoms (~900 people)
Where has Zika virus been found?

- Continued spread in the Pacific Islands
  - French Polynesia
  - New Caledonia
  - Cook Islands
  - Vanatu
  - Fiji
  - Solomon Islands
  - Easter Island

2013-2014
Where has Zika virus been found?

2015: Brazil

- May: first detected cases
- May–July: Increase in Guillain-Barre cases in NE states (121 cases)
- Dec: spread to >18 states
Locally-acquired cases

vs.

Travel-associated or Imported cases
CHIKUNGUNYA, DENGUE, or ZIKA: What is local transmission?

A person who has not traveled recently gets bitten by an infected mosquito where they live, work, or play.

A mosquito bites a person who is sick. The mosquito gets infected.

Infected mosquitoes can then bite healthy people and spread the infection.

Within 3–7 days, the person may become sick. Other mosquitoes can bite the sick person, become infected, and bite more people.
CHIKUNGUNYA, DENGUE, or ZIKA: What is an imported case?

A person who was bitten by an infected mosquito while traveling away from home.

A person gets bitten by an infected mosquito while traveling.

Symptoms may begin 3–7 days after being bitten by an infected mosquito.

For more information: www.cdc.gov/chikungunya • www.cdc.gov/dengue • www.cdc.gov/zika
Where is Zika now?

As of May 12, 2016
Where is Zika now?

Laboratory-confirmed Zika virus disease cases reported to ArboNET by state or territory — United States, 2015–2016 (as of May 18, 2016)
How many Zika cases have been reported?

As of May 18th, 2016:

• U.S. territories: 836 cases
  – Guillain-Barre syndrome: 5 (0.6%)
  – Locally-acquired: 832 (99%)
How many Zika cases have been reported?

As of May 18\textsuperscript{th}, 2016:

- U.S. states: 544 cases
  - Sexually transmitted: 10 (2%)
  - Guillain-Barré syndrome: 1 (0.2%)
  - Locally-acquired mosquito-borne: 0 (0%)
How many Zika cases have been reported?

As of May 24th, 2016:

• Arizona: 3 travel-associated cases
How is Zika transmitted?

• Zika can be transmitted through:
  – Mosquito bites

Aedes mosquito bites someone infected with the virus.

Aedes mosquito becomes infected and continues to spread the virus.

Aedes mosquito infected with the virus bites healthy people and the cycle continues.
Incubation period in mosquitos?
Incubation period in humans?

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A red arrow points from a mosquito icon to a human icon, indicating the incubation period.
What are the symptoms?

• Only about 1 in 5 people infected with Zika will experience symptoms
What are the symptoms?

• The most common symptoms of Zika are:
  – Fever
  – Rash
  – Joint Pain
  – Conjunctivitis (red eyes)
How does Zika virus affect people?

• Most people who get sick from Zika will experience *mild* symptoms.
• Symptoms go away after about 1 week
• People usually experience immunity after infection
How does Zika virus affect pregnant women?

• Zika virus can pass from a pregnant woman to her fetus during pregnancy and at delivery.

• There have been no reports of the virus spread through breastfeeding.

• Previous Zika infection does not appear to affect future pregnancies.
How does Zika virus affect pregnant women?

- Zika infection in pregnancy is linked to microcephaly.
- Microcephaly: birth defect in which a baby's head is smaller than expected compared to babies of same age and sex.
What don’t we know about Zika infection during pregnancy?
Does Zika cause Guillain-Barré Syndrome (GBS)?

- GBS is very likely triggered by Zika in a small proportion of infections, much as it is after a variety of other infections.
- As of May 11, 2016, 13 countries have reported GBS increases or Zika infections among GBS cases.
How is Zika diagnosed?

Diagnosis of Zika is based on a person’s recent travel history, symptoms, and results of laboratory tests.
What tests are used to identify Zika?

- RT-PCR tests can identify Zika virus RNA in blood or urine
- Serologic tests can identify Zika virus in blood
- All tests should be coordinated with the appropriate county health department
How is Zika treated?

• There are no vaccines or specific treatment for Zika
• Treat symptoms:
  – Rest
  – Fluids
  – Acetaminophen
What precautions should infected people take?

- Avoid mosquitoes
- Avoid unprotected sex
Which mosquitos spread Zika?

- *Aedes* species mosquitos spread Zika
- In Arizona, our Zika risk is from *Aedes aegypti* mosquitos
What is known about *Aedes* mosquitoes?

- Prefer to feed on humans
- Daytime biters
- Lay eggs in water-holding containers
Where are *Aedes* mosquitoes found?

Estimated range of *Aedes aegypti* in the United States, 2016
Where are *Aedes* mosquitos found?
How can I keep myself and my family safe?

- **Remove standing water around your house and yard.**
- **Use screens on windows and doors.**
- **Wear bug spray.**
- **Protect yourself from mosquitoes all day long.**
- **Visit your doctor immediately if you feel sick.**
- **Protect yourself from mosquitoes when traveling to areas with these viruses.**
Keep mosquitos outside

During mosquito season, keep doors and windows closed or screened to prevent mosquitos from entering the home.
Dress to protect yourself

Wear long sleeves and long pants to prevent skin exposure to mosquitoes
Wear insect repellent

• Use EPA-registered repellents with one of the following:
  – DEET
  – Picaridin
  – IR535
  – Oil of lemon or eucalyptus
  – Para-menthane-diol

• Follow the label instructions
• Apply sunscreen first
Insect repellent and children

• Do not use insect repellants on babies <2 months old
• Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children <3 years old
• Do not apply onto hands, eyes, mouth, and cut or irritated skin.
• Adults: Spray onto your hands and then apply to a child’s face.
Protect your partner

With a pregnant partner, men who have lived in or traveled to an area with Zika should use condoms the right way, every time; or not have sex during the pregnancy.
Plan your travel

• Pregnant women should postpone travel to areas with active Zika transmission.

• Travelers to Zika-affected areas should:
  – Prevent mosquito bites while traveling
  – Avoid mosquito bites for 3 weeks after they get home
Public Health Response to Zika
Public Health System Response

CDC

ADHS

Local Health
• Educate public and healthcare providers
• Post travel notices and guidelines
• Provide guidance to state and local public health
• Support laboratory testing
• Conduct national surveillance
• Implement studies to learn more about Zika
• Support national and international response
Arizona Response Plans

ARIZONA ARBOVIRAL HANDBOOK FOR CHIKUNGUNYA, DENGUE, & ZIKA VIRUSES

azhealth.gov/mosquito
• **Scenario 1: Risk for Imported Cases**
  – Provide education about source reduction and mosquito avoidance
  – Closely investigate travel-associated cases
  – Facilitate laboratory testing for suspect and probable cases
  – Track the number and distribution of cases
  – Collaborate with vector control counterparts to compare human disease cases and mosquito surveillance results
Arizona Arboviral Handbook

• Scenario 2: Response to locally acquired cases
  – Notify media and raise public awareness
  – Intensify communication with healthcare providers
  – Enhance disease surveillance
    • Active case finding in communities where cases identified
    • Enhanced laboratory surveillance
  – Track number and distribution of cases
  – Collaborate with vector control to target high-risk areas for vector control operations
Scenario 3: Recovery

- Consider enhanced surveillance for human cases in high-risk areas
- Decrease *Aedes aegypti* surveillance to baseline levels
Current Arizona Activities

Fight the Bite!

azdhs.gov/mosquito
Maintain Situational Awareness

- Closely follow national and international Zika updates
- Ensure that new information is shared with state and local partners
Monthly Arboviral Work Group

• Enhance communication between epi/vector control partners
• Identify and address arboviral surveillance and response needs
• Strengthen human and mosquito surveillance
• Develop protocols for management of suspect mosquito-borne disease cases
Mosquito Surveillance and Control

• Local vector control departments trap for *Aedes aegypti* mosquitos

• Citizen science projects

• Mosquito control through targeted larvicide and adulticide application
Pregnancy Registry

CDC’s Response to Zika
US Zika Pregnancy Registry
What Pregnant Women Need to Know

What is the purpose of the registry?
CDC developed the US Zika Pregnancy Registry to:
• Learn more about the effects of Zika virus infection (Zika) during pregnancy.
• Learn more about the growth and development of babies whose mothers had Zika while pregnant.
CDC will collect health information about Zika among pregnant women and babies across the United States for the registry. CDC and health departments will use the information from this registry to help pregnant women and families affected by Zika. The knowledge gained from this registry will help doctors and other healthcare providers care for pregnant women and their babies.

Who is being included in the registry?
Women living in the United States who have been infected with Zika during pregnancy and their babies can be included in the registry.*

What will be done with the information collected?
The identity of people in the registry will be kept private and secured. The information your doctor or other healthcare provider shares will be added to the registry with information about other pregnant patients with Zika, and the babies born to these mothers, to help CDC and state health departments develop a clearer picture of how Zika affects pregnant women and their babies.

What do I have to do to be in the registry?
You will not need to do extra paperwork, go to extra appointments, or have extra tests to be part of the registry. If your healthcare provider is participating in this Registry, s/he will share information about your health with your health department and the CDC, the Federal public health authority that is trying to understand, prevent, and control disease. Your health department and CDC will work with your doctor and other healthcare providers to collect all of the information needed. For this registry, your health department and CDC will:
• Collect information about your pregnancy.
• Collect information about you and your baby around the time the baby is born, and
• Contact the baby’s doctor or other healthcare provider to collect information about the baby’s growth and development up to his or her first birthday.
If you change doctors or healthcare providers, please request that your new provider contact registry staff through the email address below.
As established in the HIPAA Privacy Rule (45 CFR 164.522, 164.524, 164.526, and 164.528), you have the right to request from your healthcare provider restrictions to access, amendments to, and accounting of the disclosure of your protected health information at any time.

How much does this cost?
Being in the registry will not cost you any money.

What if I have questions about being in the registry?
For more information, call 770-488-7100, visit CDC’s or send questions to ZIKAresearch@cdc.gov.

*Yusa Fisa is establishing a separate Zika Active Pregnancy Surveillance System (ZAPSS)

www.cdc.gov/zika

U.S. Department of Health and Human Services
Center for Disease Control and Prevention
Blood Safety

- Defer blood donation for 28 days after travel to a Zika-affected area
Daily Activities

Respond to Zika inquiries from the public, healthcare providers, and local health departments

Investigate suspected Zika cases

Coordinate Zika testing with local, state, and CDC laboratories
Zika Testing

• The Arizona State Public Health Laboratory can test for Zika virus:
  – In humans
  – In mosquitos
Information Sharing

Zika - Information for Providers

Testing for Zika virus should be considered among patients who have recent travel to a Zika-affected area, or have sexual contact with someone suspected to have Zika virus infection. Being symptomatic for Zika virus up to 7 days after infection is important for evaluation.

Symptoms of Zika virus in patients include fever, rash, joint pain, and conjunctivitis. While the virus is usually mild in adults, pregnant women are at a higher risk.

Zika Testing for Males and Non-pregnant Females

1. Does the person have a history of travel in the last 2 weeks to a city or state with ongoing Zika virus transmission?
   - No
   - Yes

2. Does the person have two or more of the following symptoms: Joint pain or rash, muscle pain, arthralgia, or conjunctivitis?
   - Yes
   - No

3. Does the person have a history of unprotected sexual contact with a male partner** who traveled to or lived in an area with Zika virus transmission?
   - Yes
   - No

4. Collect and send:
   - 2 vials of serum or urine
   - Blood activation or saline separator tubes such as red top, tiger top, or gold top
   - Urine can be tested by Real-time PCR in the first two weeks after symptom onset

**Male partner does not have to be a confirmed Zika virus case.

ARIZONA HEALTH ALERT NETWORK

Register Now: han.health.azdhs.gov

The Arizona Health Alert Network (AzHAN) is a secure web-based notification system available 24/7/365 that distributes important public health alerts to public health officials and healthcare professionals.
Public Education
So, what’s the risk in AZ?

- We have the right kind of mosquito
- We have travelers from Zika-affected areas
- Many households are screened or air conditioned in areas with Aedes mosquitoes
- We’ve successfully responded to Aedes-caused outbreaks recently
Thank You

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azhealth.gov/zika

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#ZikaAZ

Arizona Zika Action Plan Summit
May 24, 2016