

Module Three

About Zika Virus: What is Known and Not Known



HOUSEKEEPING

- For educational and quality improvement purposes, this TeleECHO Clinic will be recorded
- By participating in this clinic, you are consenting to be recorded – we appreciate and value your participation
- To protect patient privacy, please only display or say information that doesn't identify a patient or that cannot be linked to a patient
- If you have questions or concerns, please email ashah@aap.org



HOUSEKEEPING

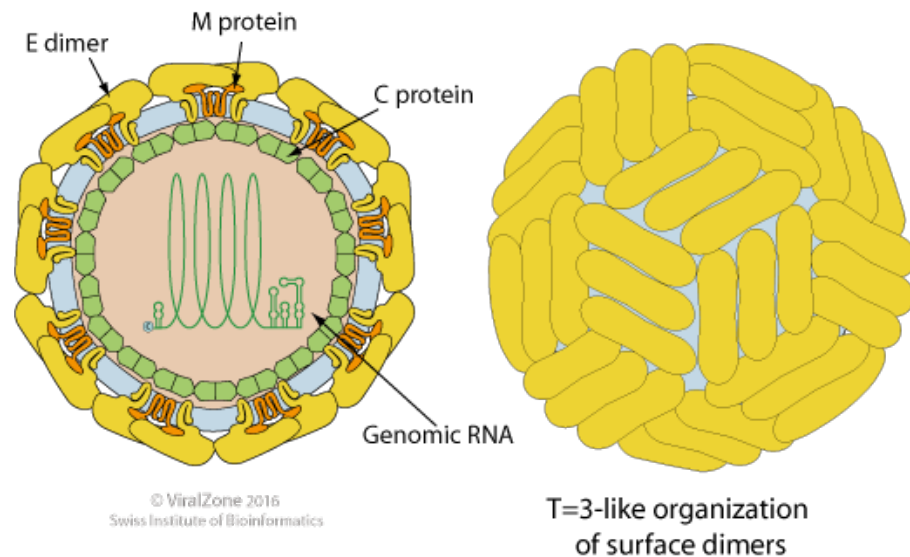
- Some helpful tips:
- Mute microphone when not speaking
- Computer: the microphone is located on the lower left of your screen
- Telephone: mute and unmute is *6.
- Communicate clearly during clinic:
 - Speak clearly
 - Use chat function to send everyone messages (For IT help, chat AAP Admin)



ABOUT ZIKA VIRUS

Zika is a RNA flavivirus related to dengue, yellow fever, Japanese encephalitis, and West Nile viruses.

Flaviviruses are enveloped viruses that contain genomes which consist of nonsegmented single-stranded positive-sense RNA.



ABOUT ZIKA VIRUS

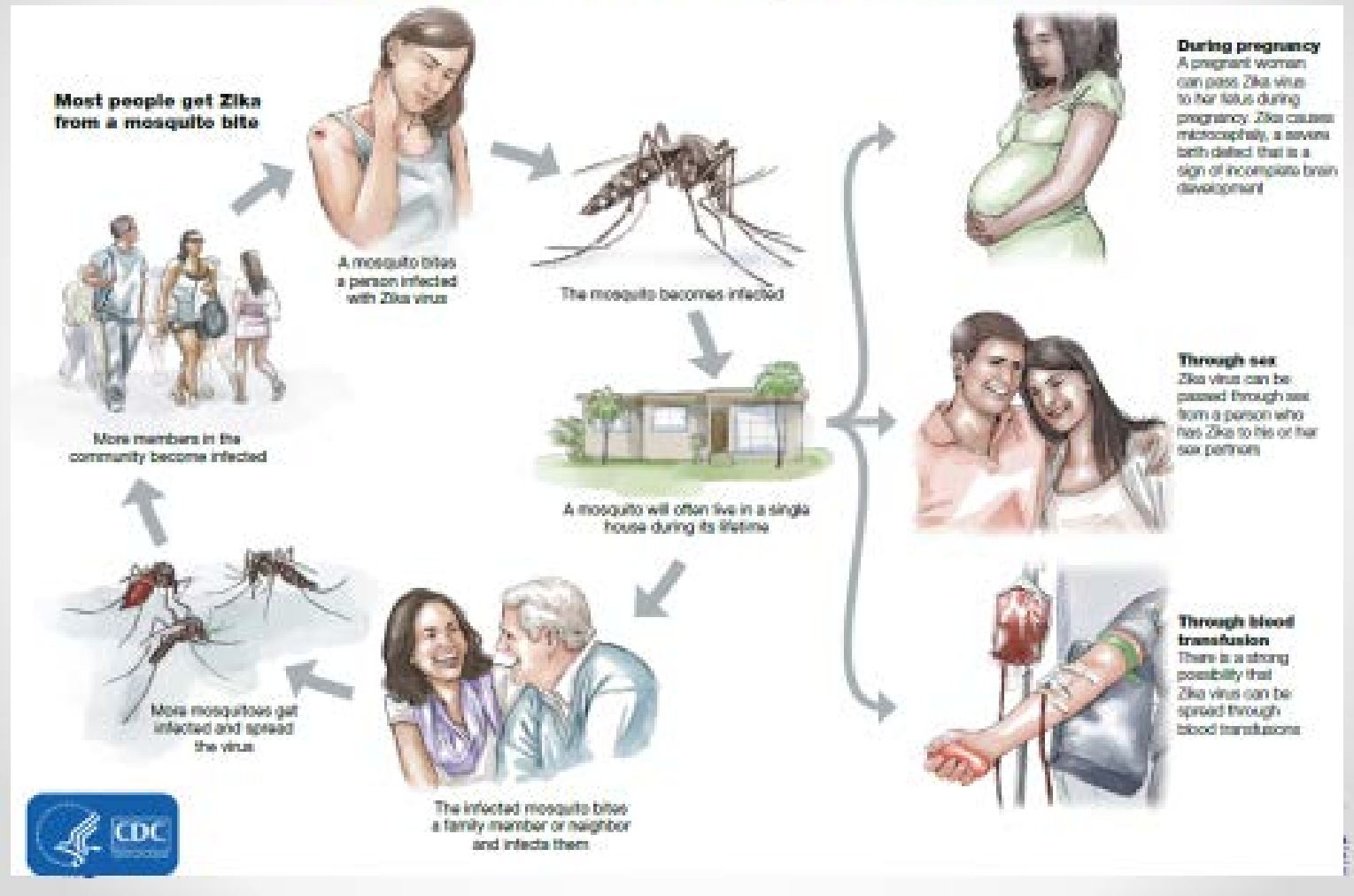
Zika virus and the other flaviviruses are part of a larger group of viruses termed arboviruses (for **arthropod-borne**).

Defining characteristics

- Transmitted to humans via the bite of infected arthropods
- Most commonly mosquitoes and ticks.
- Maintained in nature through a complex cycle in which they rotate between a vertebrate animal host and a blood-feeding vector that carries the virus from one host to another.



How Zika Spreads



HOW DOES ZIKA AFFECT PREGNANCIES?

Zika infection in pregnancy can cause the following cognitive, sensory and motor disabilities, unique from other congenital infections:

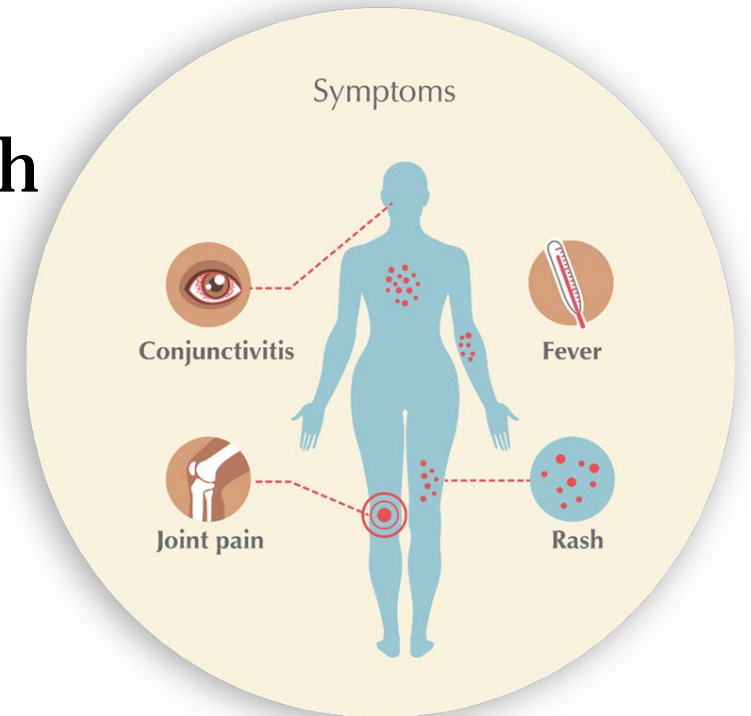
- Severe microcephaly with partially collapsed skull
- Thin cerebral cortices with subcortical calcifications
- Macular scarring and focal pigmentary retinal mottling
- Congenital contractures
- Marked early hypertonia and symptoms of extrapyramidal involvement



ABOUT ZIKA VIRUS

SYMPTOMS OF INFECTION

- Most people infected with Zika virus do not experience any symptoms
- About 1 in 5 people will become sick, usually with a mild illness whose common symptoms include:
 - a mild fever
 - skin rash
 - joint pain
 - conjunctivitis
- Symptoms generally begin a few days after a bite from an infected mosquito and last about 2 to 7 days
- Fatalities are rare



POST NATAL INFECTIONS IN CHILDREN

- CDC study of 158 cases of travel-associated Zika virus infection in children ages 0-18
- Results:
 - 129 (82%) children had rash
 - 87 (55%) had fever
 - 45 (29%) had conjunctivitis
 - 44 (28%) had arthralgia
 - No Guillain-Barré syndrome
 - No deaths
- Zika virus disease appears to be a mild illness in children



WHO SHOULD BE TESTED FOR ZIKA VIRUS INFECTION?

- Patient with fever, rash, arthralgia, or conjunctivitis AND:
 - Onset during or within 2 weeks of travel to an area with ongoing transmission, OR
 - Epidemiologic link to laboratory-confirmed case through vertical transmission, sexual contact, or association in time and place
- Offer testing to asymptomatic pregnant women with a history of:
 - Travel to or residence in an area with ongoing transmission during pregnancy, OR
 - Sexual contact with a partner who had symptoms of Zika virus disease during travel or within 2 weeks of return from an affected area



TESTING FOR ZIKA VIRUS INFECTION IN CHILDREN

- Zika virus, as an arbovirus, is national notifiable
- Congenital infections are also reportable
- Infants should be tested for Zika virus infection if they have:
 - Microcephaly or intracranial calcifications and were born to women who traveled to or resided in an area with Zika virus transmission while pregnant
 - Born to mothers with positive or inconclusive test results for Zika virus infection
- Inconclusive test results require clinical evaluation



COMMUNICATING TEST RESULTS

- Obstetricians and pediatricians should report positive results to the CDC pregnancy registry
- Obstetricians, nurses, and hospital staff, should communicate with pediatricians, in the hospital and beyond, about maternal exposure
- Pediatricians should communicate with an infants care-givers to learn about potential exposure during pregnancy



ABOUT ZIKA VIRUS

TREATMENT

- There is no specific medicine or vaccine for Zika virus
- Advice for those suffering active infection:
 - Get plenty of rest.
 - Drink fluids to prevent dehydration.
 - Take medicine such as acetaminophen or paracetamol to reduce fever and pain.
 - Patients should not take aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) until dengue can be ruled out to reduce the risk of bleeding.
 - Advise patients if they are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.



ABOUT ZIKA VIRUS VACCINE DEVELOPMENT

The Assistant Secretary for Preparedness and Response's (ASPR) Biomedical Advanced Research and Development Authority (BARDA) is working to develop a vaccine. The desired end state for the vaccine is:

- Vaccine Candidate(s) available to address immediate U.S. response needs by 2018
 - Protection of key at-risk populations
 - Potential suppression of transmission in active disease sites
 - Reduction of disease
- Vaccine candidate(s) approved for general use and commercial distribution by 2020
 - Marketed for personal protection and general public health use to control transmission and endemic / epidemic disease
 - Potential for global distribution
 - Broad coverage across age groups
 - Limited contraindications



About Zika Virus

Modes of Transmission

Vector transmission:

- *Aedes aegypti* mosquito primary vector (humans)
- *Aedes albopictus* mosquito also competent vector
- Can transmit dengue and chikungunya viruses
- Lay eggs in water containers around the home
- Peak feeding during daytime



Aedes aegypti



Aedes albopictus

About Zika Virus

Modes of Transmission

Other modes:

- Sexual transmission
- Mother to fetus & breastmilk*
- Blood transfusion, lab exposure, organ transplant

*To date, there are no reports of infants getting Zika virus through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where Zika virus is found.



What We Don't Know

- If a person travels and is bitten:
 - How likely you are to get Zika
 - How likely it is that your baby will have birth defects from the infection
- Impact of trimester of pregnancy you get infected on the outcome of the pregnancy (some research shows first trimester more detrimental)
- Whether previous infection gives you some immunity to future infections
- Whether previous infection will have impact on future pregnancies



What's Next?

Module Four: Zika Virus Precautions, Prevention & Testing

