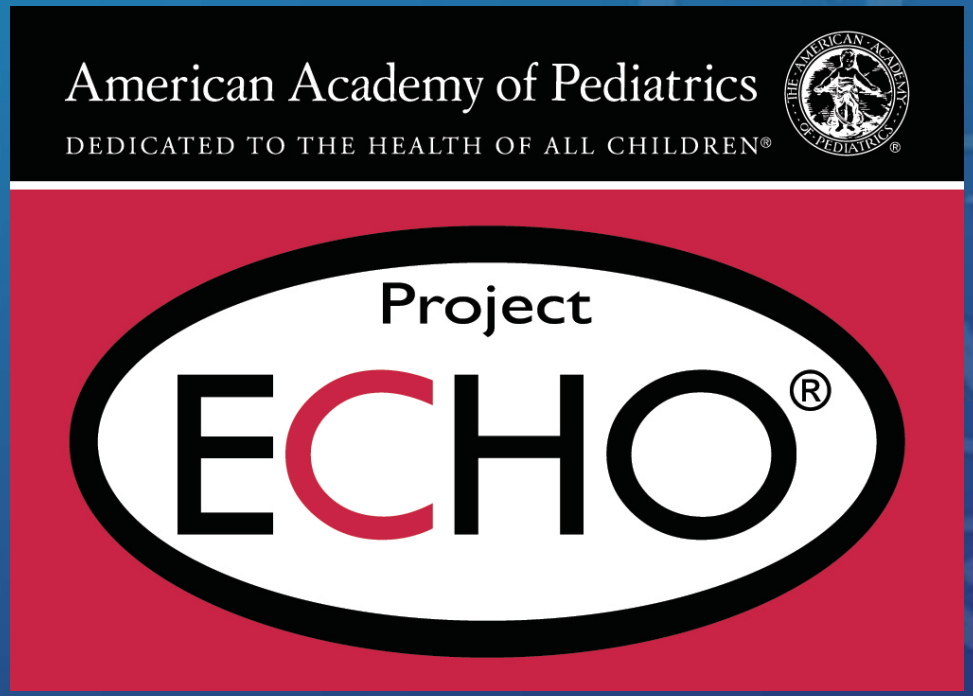
AAP ZIKA ECHO

(EXTENSION FOR COMMUNITY HEALTHCARE OUTCOMES)



American Academy of Pediatrics
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Housekeeping items

- For educational and quality improvement purposes, this ECHO session will be recorded
- Project ECHO® collects participation data for each ECHO session. This data allows Project ECHO to measure, analyze, and report on the ECHO movement's reach. Data is used in reports, on maps and visualizations, for research, for communications and surveys, for data quality assurance activities, and for decision-making related to new initiatives.
- To protect patient privacy, please do not provide any (PHI) protected health information.
- Please mute your microphone when not speaking. If you have video capability, please enable it.
- There is a chat function in Zoom that may be used to send messages to the group. For IT help, please chat to the AAP Admin and we will assist you.

Today's Lecture

Zika Virus in Infants and Children: Routes of Transmission and Possible Outcomes

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Presented March 27, 2018

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Objectives

- Discuss ways that infants and children can become infected with Zika virus during or after pregnancy

- Discuss possible outcomes from congenital, perinatal and postnatal Zika virus transmission

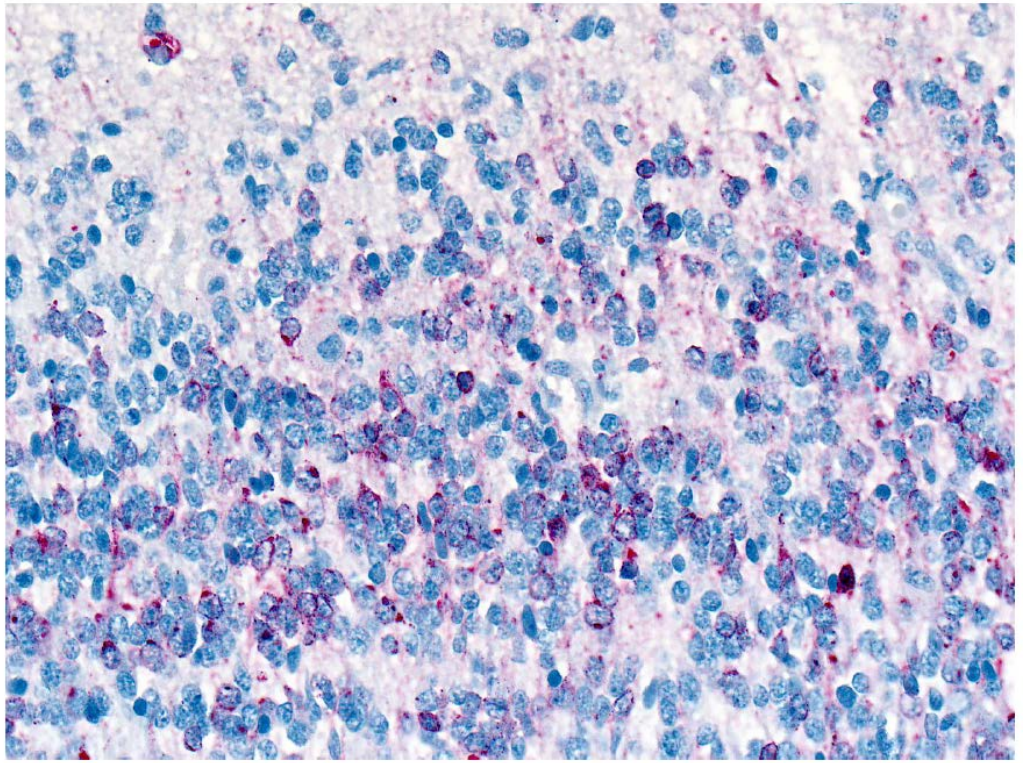
Zika virus transmission in Infants and Children: Routes of Transmission

- Congenital
- Perinatal
- Postnatal

Congenital Transmission

Zika virus can be transmitted from a pregnant woman to her fetus during pregnancy

- Evidence of Zika virus found in:
  - Amniotic fluid
  - Placenta
  - Fetal brain tissue
  - Products of conception
- Zika virus has been found to continue to replicate in infants' brains after birth



Immunohistochemical staining of Zika virus antigen (red stain) in fetal brain tissue. This staining is present in the same areas where neuronal cell death/necrosis was identified by microscopic review of tissue morphology.

Image Source: https://doi.org/10.5858/arpa.2016-0397-SA

Bhatnagar J, Rabeneck DB, Martines RB, et al. Zika Virus RNA Replication and Persistence in Brain and Placental Tissue. Emerging Infectious Diseases. 2017;23(3):405-414. doi:10.3201/eid2303.161499.

Congenital Zika Syndrome

- Congenital Zika Syndrome (CZS) is unique to fetuses and infants infected before birth, and is described by the following five features
  - Severe microcephaly
  - Decreased brain tissue with specific pattern of brain damage, including subcortical calcifications
  - Damage to back of eye, including macular scarring and focal pigmentary retinal mottling
  - Congenital contractures, such as clubfoot or arthrogryposis
  - Hypertonia restricting body movement soon after birth
- CZS also associated with other brain and optic nerve abnormalities, irritability, seizures, dysphagia, and brainstem dysfunction

https://www.cdc.gov/pregnancy/zika/testing-follow-up/zika-syndrome-birth-defects.html Accessed March 20, 2018

CZS and Risk of Birth Defects: Data from US States and Territories

- Up to 1 in 10 babies of women with possible Zika virus infection during pregnancy had Zika-associated birth defects
- Women with Zika virus infection during pregnancy had a 20-fold increased risk of having a baby with the types of birth defects that can occur from Zika virus infection
- Birth defects reported in a higher proportion of babies whose mothers were infected during the first trimester (8-15%)

https://www.cdc.gov/pregnancy/zika/data/index.html. Accessed March 19, 2018.

Perinatal Transmission

- Perinatal transmission can occur when a women is infected with Zika virus within ~2 weeks of delivery, and virus passes to infant at or around time of delivery
- Infant may develop symptoms including maculopapular rash, conjunctivitis, arthralgia, and fever
- It is currently unknown:
  - How often perinatal Zika transmission occurs
  - The spectrum of clinical features that might be observed in these infants

Perinatal Transmission

- Suspect perinatal transmission in an infant in first 2 weeks of life if:
  - Infant's mother was potentially exposed to Zika virus within ~2 weeks of delivery, and
  - Infant has at least one of the following: Fever, rash, conjunctivitis, or arthralgia
- Neonates born to mothers with manifestations of Zika around time of delivery should be monitored for Zika virus illness
  - Both mother and infant should be tested if illness develops

Source: https://www.cdc.gov/pregnancy/zika/testing-follow-up/evaluation-testing.html Accessed March 20, 2018

Postnatal Transmission

- Infants and children can acquire Zika virus postnatally via other routes of transmission, such as mosquito bites
- Postnatal infection should be suspected in an infant or child who:
  - Traveled to or resided in a area with risk of Zika virus infection within past 2 weeks
  - Has one or more of the following: fever, rash, conjunctivitis, and arthralgia
  - Don’t forget the possibility of sexual transmission in teens

Source: https://www.cdc.gov/pregnancy/zika/testing-follow-up/evaluation-testing.html Accessed March 20, 2018

Postnatal Infections in Children

- CDC study of 158 cases of travel-associated Zika virus infection in children ages 0-18 (January 2015–July 2016)
- 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

Source: http://www.cdc.gov/mmwr/volumes/65/wr/mm6539e2.htm?s_cid=mm6539e2_w

Postnatal Transmission

- Routine pediatric care is currently advised for infants and children who have mild illness due to postnatal Zika virus infection
- Special considerations for children:
  - Non-steroidal anti-inflammatory drugs (NSAIDS) should be avoided in children < 3 to 6 months
  - Aspirin is not recommended because of risk of Reye's syndrome
- Patients with suspected Zika virus infections should be evaluated and managed for possible dengue or chikungunya virus infection
  - Aspirin and other NSAIDS should be avoided until dengue can be ruled out

https://www.cdc.gov/pregnancy/zika/testing-follow-up/zika-in-infants-children.html Accessed March 20, 2018

Zika Virus and Breastfeeding

- Zika virus has been found in breastmilk
- There have been reports of Zika virus infection in babies from breastfeeding, but no reports of resulting health problems in the babies
- Because current evidence suggests the benefits of breastfeeding outweigh the risk of Zika virus spreading through breastmilk, CDC continues to encourage mothers to breastfeed, even in areas with risk of Zika

https://www.cdc.gov/pregnancy/zika/testing-follow-up/zika-in-infants-children.html Accessed March 20, 2018

Guillain-Barre Syndrome (GBS)

- GBS has been reported following Zika virus infection, although a causal link has not been established
- It is unclear how often GBS following Zika virus infection has occurred in children

https://www.cdc.gov/pregnancy/zika/testing-follow-up/zika-in-infants-children.html Accessed March 20, 2018

Questions?