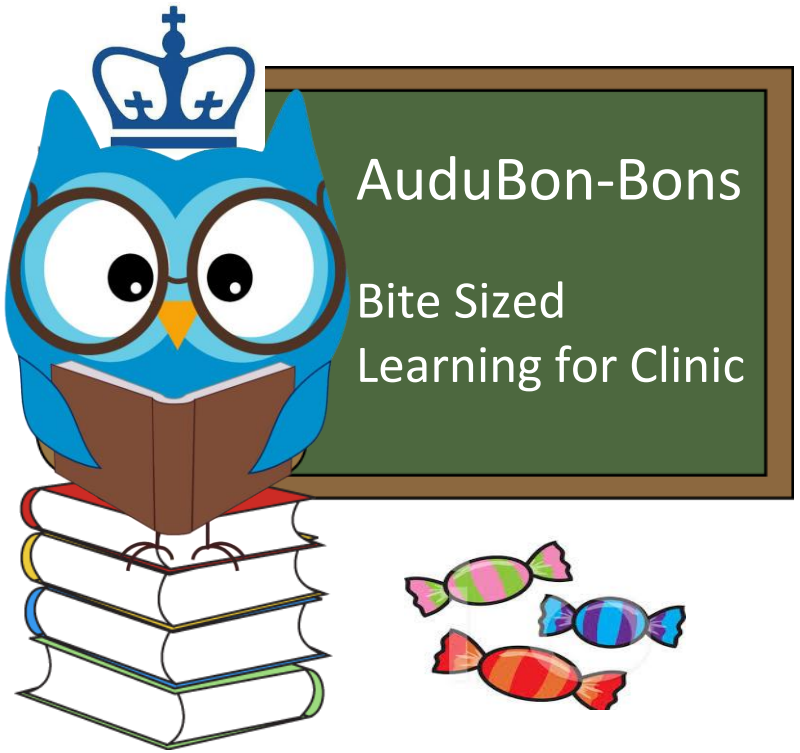
PRENATAL CARE: ZIKA SCREENING



Week 99

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Homework Assignment:

ACOG Committee Opinion #784
Management of Patients in the Context of Zika Virus

LEARNING OBJECTIVES

- To be able to assess patients for potential exposure to Zika virus
- To review testing recommendations for pregnant women with possible Zika virus exposure
- To feel comfortable counseling patients about prevention strategies to Zika virus

CASE VIGNETTE

- Your patient is a 21 y.o. G1 P0 woman at 23 weeks EGA who presents to your office to establish prenatal care.
  - She recently moved from the Dominican Republic to NY. She reports seeing a doctor twice during her pregnancy however does not bring records.
  - She attended an outdoor going away party 1 week ago and reports receiving multiple mosquito bites at the event.

FOCUSED HISTORY

What elements of this patient's history are most relevant?

- **Recent travel to DR/ mosquito bites**
- **ROS:**
  - **Pt c/o subjective fever, body aches and itching with redness in her eyes.**
  - Denies contractions, vaginal bleeding, leakage of fluid. Reports feeling flutters.
- **OBHx:** Primigravid
- **PMHx:** Denies
- **PSHx:** Denies
- **Meds:** None
- **All:** NKDA
- **SocHx:** Denies toxic habits

PERTINENT PHYSICAL EXAM FINDINGS

What elements of the patient's physical exam are most important?

- **Vitals:** T37C, BP 128/84, HR 82, RR 18
- **HEENT:** **Bilateral conjunctivitis noted**
- **Abdominal exam:** Gravid, soft, nontender
- **Fetal assessment:** FH 22cm
  FHR 140bpm

BACKGROUND

What type of virus is the Zika virus?

- Flavivirus
- Closely related to dengue virus, West Nile virus, Japanese encephalitis virus, yellow fever virus

How is Zika virus spread?

- Through bites by infected Aedes species mosquitos

How is Zika virus transmitted?

- Sexual contact
- Vertical transmission
- Blood transfusion

- **What is the incubation period for Zika virus?**
  - 3 – 14 days

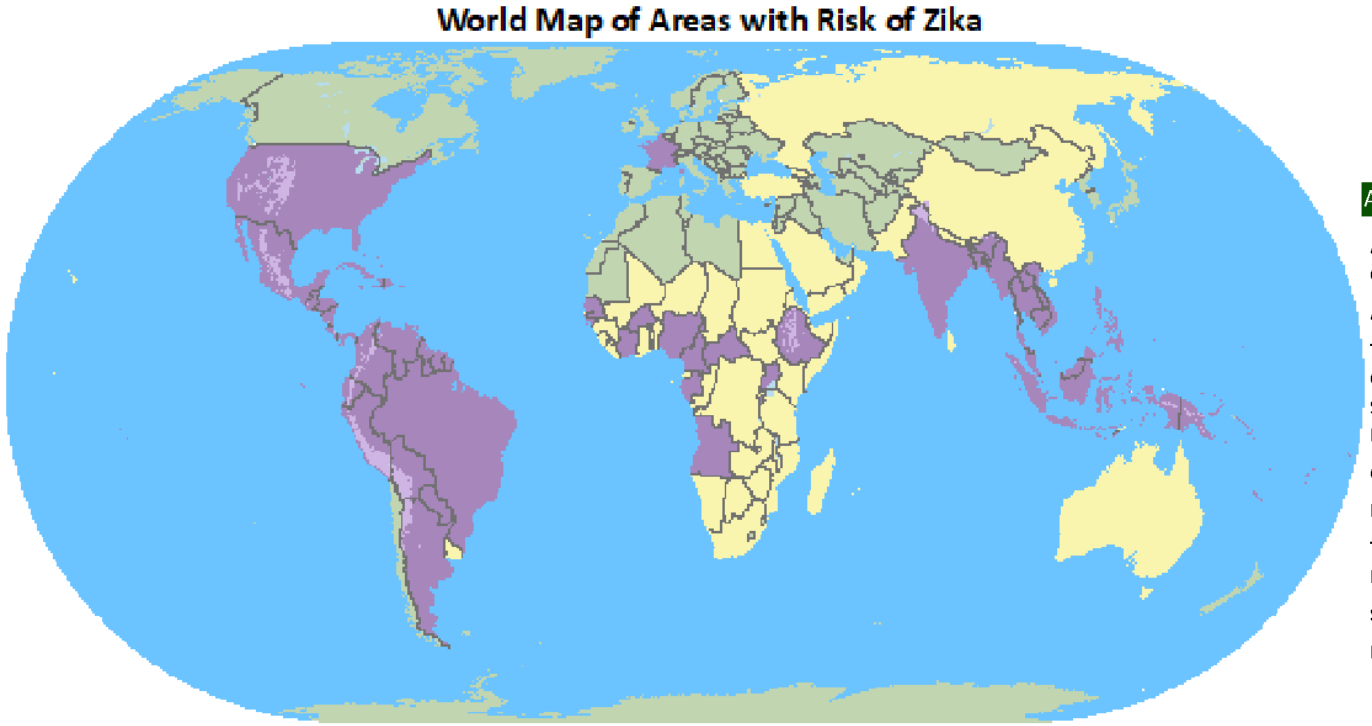
- **What are signs and symptoms of Zika virus infection?**
  - Fever, rash, arthralgia, conjunctivitis

BACKGROUND

- **Large outbreaks of Zika virus occurred in the Americas in 2015 – 2016**
  - Resulted in an increase in travel-associated cases in US
  - Widespread transmission in PR and US Virgin Islands
  - Limited local transmission in Florida and Texas

- **As per the CDC, from Jan 1, 2020 through December 3, 2020:**
  - Only two cases of Zika virus disease were reported (both from travelers) and NO cases were acquired through local mosquito-borne transmission or sexual transmission in the US
  - 41 cases were reported to be acquired through local mosquito-borne transmission in US territories (PR)

BACKGROUND



https://wwwnc.cdc.gov/travel/page/zika-information

Areas with Risk of Zika

Africa: Angola, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Ethiopia, Gabon, Guinea-Bissau, Ivory Coast, Nigeria, Senegal, Uganda

Asia: Bangladesh, Burma, Cambodia, India, Indonesia, Laos, Malaysia, Maldives, Philippines, Singapore, Thailand, Vietnam

The Caribbean: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bonaire, British Virgin Islands, Cayman Islands, Cuba, Curacao, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Puerto Rico, Saba, Saint Barthelemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Eustatius, Sint Maarten, Trinidad and Tobago, Turks and Caicos, United States Virgin Islands

Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama

North America: Mexico, United States (Continental US)

The Pacific Islands: American Samoa, Cook Islands, Easter Island, Federated States of Micronesia, Fiji, French Polynesia, Marshall Islands, New Caledonia, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu,

South America: Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Venezuela

Europe: France

PATHOPHYSIOLOGY

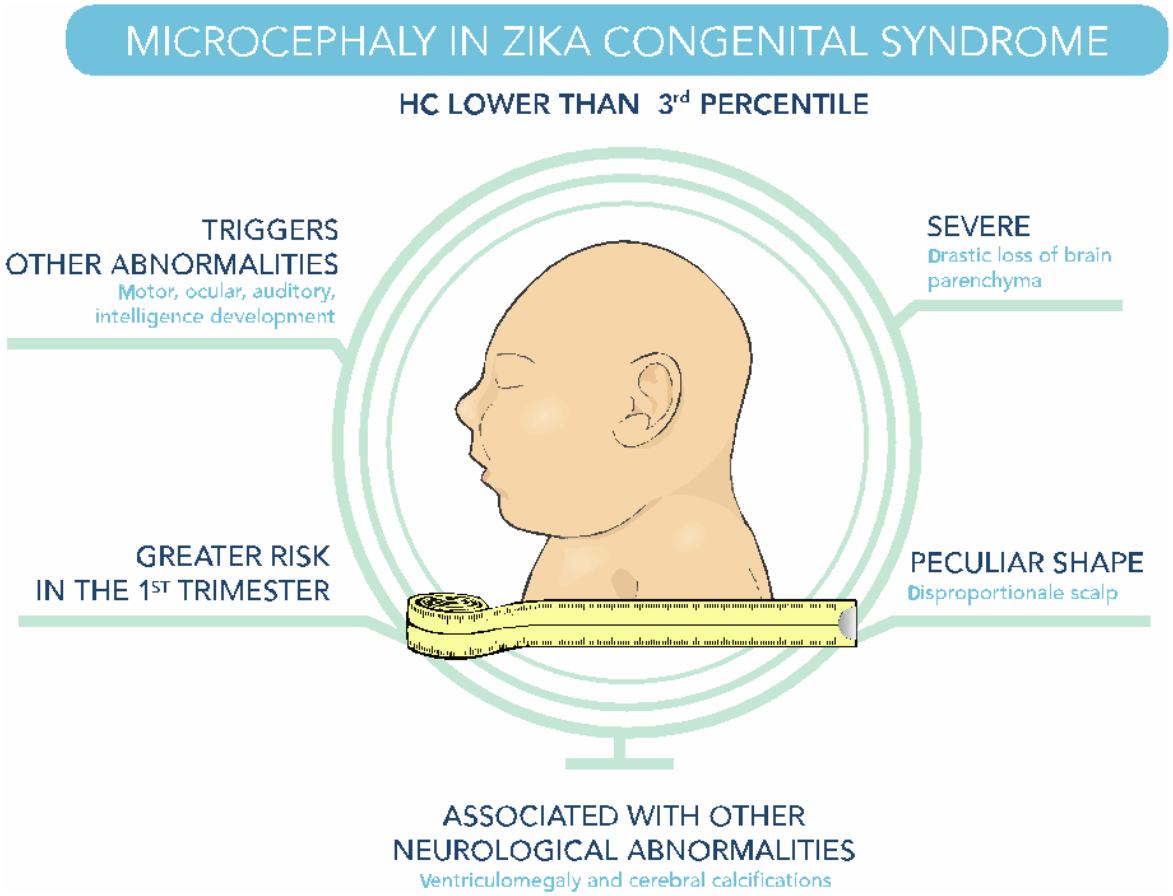


FIGURE 1 Microcephaly spectrum in ZIKV congenital syndrome: Neurological disorders are the most frequent findings, and regularly, microcephaly is associated mainly with ventriculomegaly and cerebral calcifications.[7,31,39–42] Microcephaly is considered severe, and there is a greater risk of this malformation when infection occurs in the first trimester of pregnancy.[41,45,46,52] Usually, there is an overlapping of skull bones and premature closure of the anterior fontanelle, with excess scalp and skin folds with a normal capillary pattern.[8,40,46] The association between microcephaly and other neurological defects may be responsible for triggering other embryonic imperfections, such as mental retardation and motor, ocular, and auditory abnormalities[40]

Zika virus has also been associated with other adverse pregnancy outcomes including miscarriage, preterm birth, growth restriction and stillbirth.

EVALUATION

Who should get tested for Zika virus?

- **Symptomatic** pregnant women with possible Zika virus exposure
- Pregnant women with a **fetus showing abnormalities** consistent with congenital Zika virus syndrome
- **Asymptomatic** pregnant women with **ongoing** possible exposure

How is Zika virus testing performed?

- Nucleic acid tests (RT-PCR within 7 days of symptom onset for serum)
- Serology tests – IgM assay (≥ 4 days after symptom onset)
- Plaque reduction neutralization tests

FIGURE 1. Updated interim testing recommendations[*,†,§,¶,,††,§§] and interpretation of results[¶¶] for symptomatic pregnant women with possible Zika virus exposure[***,†††] — United States (including U.S. territories), July 2017**

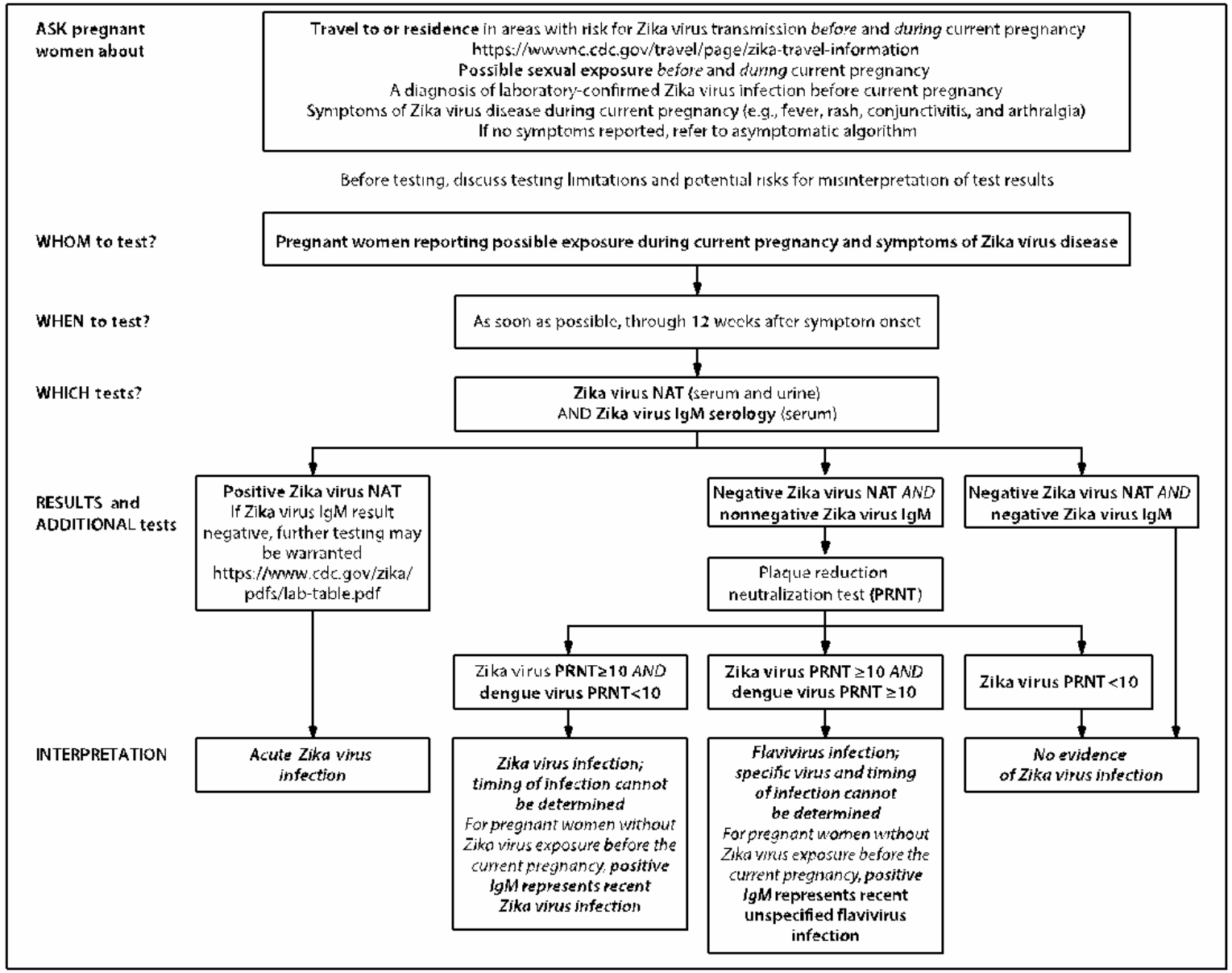
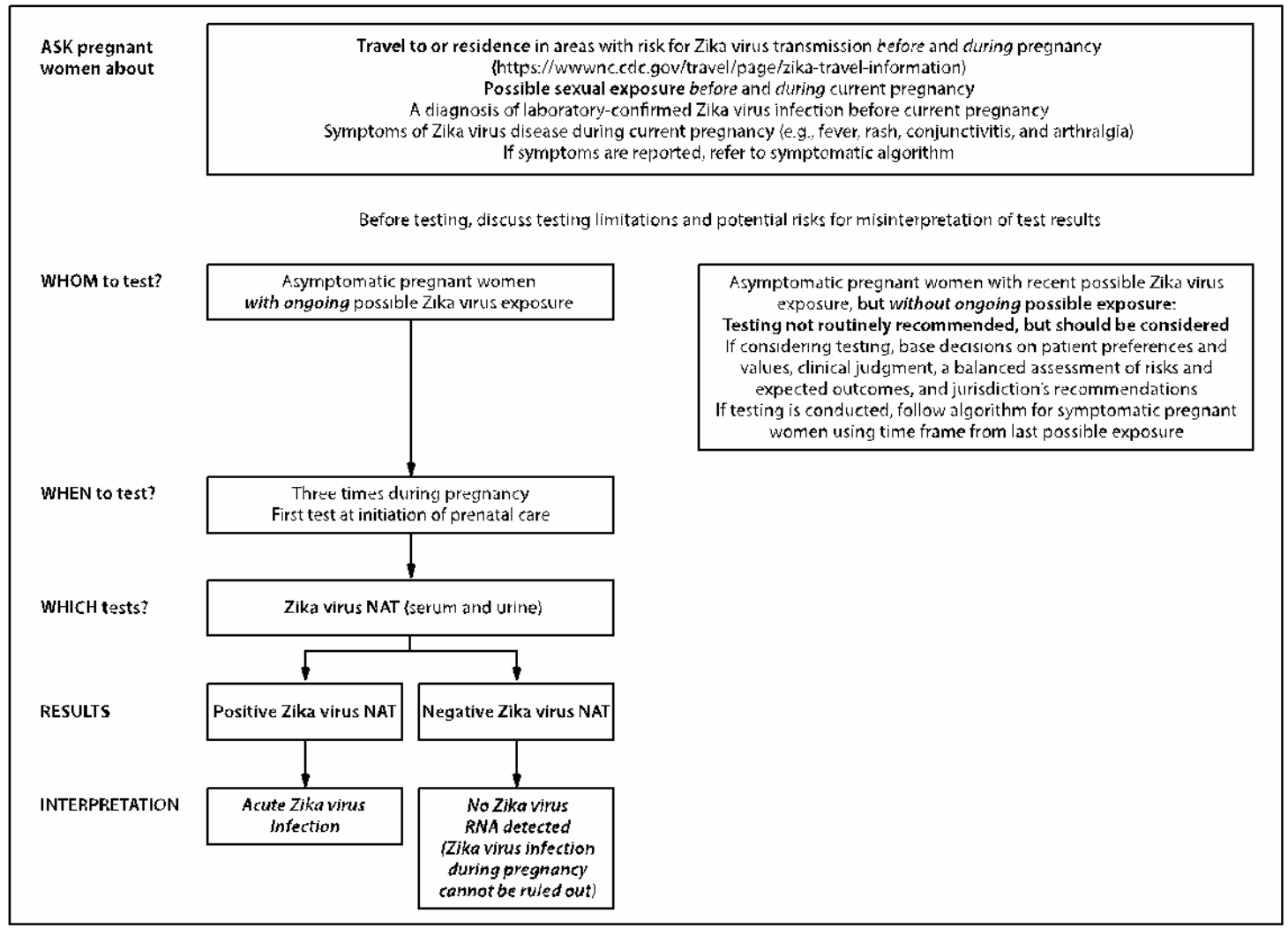


FIGURE 2. Updated interim testing recommendations[*,†,§] and interpretation of results[¶,] for asymptomatic pregnant women with possible Zika virus exposure[††,§§,¶¶] — United States (including U.S. territories), July 2017**



MANAGEMENT

- There is no commercially available vaccine against, treatment for, or method to prevent vertical transmission of Zika virus
- How are pregnant women with possible Zika infection clinically managed?
  - For pregnant women with laboratory evidence of possible Zika infection, **ultrasonography to evaluate for fetal abnormalities** consistent with congenital Zika virus syndrome is recommended.
  - **Consultation with MFM** or ID may be useful
  - For symptomatic patients, supportive care is recommended
- Pediatric care providers should be informed of a women's Zika infection status

PREVENTION COUNSELING

Avoid travel to areas where Zika virus outbreaks are occurring

- During all trimesters of pregnancy
- At least 8 weeks prior to attempting to conceive

If travel to areas endemic to Zika virus is necessary, patients should be counseled on prevention of mosquito bites.

Mosquito Bite Prevention

If you must travel to one of the areas where Zika virus is spreading, strictly follow these four steps to prevent mosquito bites:

1. Use EPA-registered bug spray with DEET, picaridin, IR3535, oil of lemon eucalyptus, paramenthane-diol, or 2-undecanone. Used as directed, these sprays are safe for pregnant and breastfeeding women.
2. Wear long-sleeved shirts and long pants.
3. Treat clothing and gear with permethrin or buy permethrin-treated items.
4. Stay in air-conditioned or screened-in areas during the day and at night.

Follow these steps at all times. Mosquitoes are active during the day and night.

The following web sites give the latest information about Zika virus:

- www.cdc.gov/zika
- www.acog.org/zika
- www.immunizationforwomen.org/zika

https://www.acog.org/womens-health/infographics/zika-virus-and-pregnancy

PREVENTION COUNSELING

What are the recommendations for prevention of sexual transmission of Zika virus in couples who want to attempt pregnancy?

Table 1. Recommendations to Prevent Sexual Transmission of Zika

Exposure Scenario	Recommendations
	Couples who want to attempt pregnancy
Only the female partner has possible Zika virus exposure.	• Use of condoms or abstinence from sex for at least 8 weeks after the female partner's symptom onset or last possible Zika virus exposure (if asymptomatic) should be advised.
The male partner or both partners have possible Zika virus exposure.	• Use of condoms or abstinence from sex for at least 3 months after the male partner's symptom onset or last possible Zika virus exposure (if asymptomatic) should be advised.
One or both partners have ongoing* possible Zika virus exposure.	• Prepregnancy care should include a discussion of the signs and symptoms and the potential risks associated with Zika virus infection and strategies to prevent Zika virus infection. • If either partner develops signs and symptoms of or is diagnosed with Zika virus infection, the couple should follow the suggested timeframes listed above before attempting pregnancy.
	Women who are pregnant
A pregnant woman whose male partner has possible Zika virus exposure.	• Use of condoms or abstinence from sex for the duration of the pregnancy should be advised.

**Ongoing Zika virus exposure* is defined as currently living in or frequent (eg, daily or weekly) travel to areas with Zika virus transmission.

SOCIAL DETERMINANTS OF HEALTH

Poverty is associated with higher rates of transmission of *Aedes*-borne pathogens amongst humans.

Lower quality housing, with broken or absent screens on windows, can increase exposure and biting rates.

Poor quality services, such as insufficient plumbing, lead to water storage containers and more standing water providing greater breeding habitat and higher vector abundance.

Poorer populations may have less access to healthcare and education for awareness and prevention.

Healthcare reform is needed to aid in expanding health clinics, implementing more testing and screening centers and by increasing outreach for mosquito vector education and prevention.

EPIC .PHRASE

BBonZikaVirusPregnancy

Description: Counseling on prevention of Zika virus infection and management in pregnancy

*** The [pregnant] patient was counseled on prevention strategies for Zika virus.

- The risk of Zika infection in pregnancy was explained to the patient including but not limited to risk of miscarriage, preterm birth, growth restriction and stillbirth. Additionally the risk to the fetus for Zika congenital syndrome was explained.
- The patient was discouraged from travel to areas endemic to Zika virus while pregnant.
- If travel cannot be avoided, the patient was educated on mosquito bite prevention including use of EPA-registered bug spray with DEET, wearing long-sleeved shirts and long pants, treating clothing and gear with permethrin or to buy permethrin-treated items and to stay in air-conditioned or screened-in areas during the day and night.
- Additionally, the use of condoms or abstinence was advised for the duration of the pregnancy should her male partner have a possible Zika virus exposure.
- The patient was instructed to disclose any symptoms of Zika virus to her healthcare provider upon return including fever, rash, arthralgia or conjunctivitis as testing may be indicated.
- If Zika virus is suspected, it was explained to the patient she will need to be evaluated for Zika virus infection with both blood work and ultrasonography.

BBonZikaVirusTTC

Description: Counseling on prevention of Zika virus infection while trying to conceive

*** The patient [desiring to conceive] was counseled on prevention strategies for Zika virus.

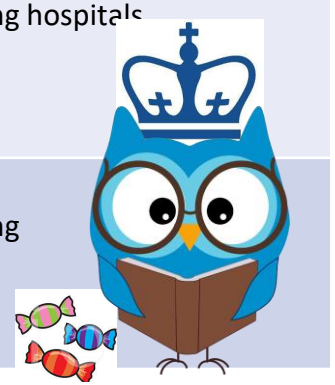
- The patient was discouraged from travel to areas endemic to Zika virus while trying to conceive or during pregnancy. If travel cannot be avoided, the patient was advised to use condoms or abstain from sex for at least 8 weeks after any symptom onset or last possible Zika virus exposure if asymptomatic.
- It was also stressed to the patient that if her male partner must travel to areas endemic to Zika virus they should use condoms or abstain from sex for 3 months after the male partner's symptom onset or last possible Zika virus exposure.

CODING AND BILLING

- Diagnostic Codes (ICD-10)
  - A92.5 Zika virus disease

CODING AND BILLING – NEW PATIENT

HISTORY	EXAM	MEDICAL DIAGNOSIS MAKING	CODE	APPLICABLE GUIDELINES
Problem focused: - Chief complaint - HPI (1-3)	Problem focused: - 1 body system	Straight forward: - Diagnosis: minimal - Data: minimal - Risk: minimal	99201	- Personally provided - Primary care exception - Physicians at teaching hospitals
Expanded problem focused: - Chief complaint - HPI (1-3) - ROS (1-3)	Expanded problem focused: - Affected areas and others	Straight forward: - Diagnosis: minimal - Data: minimal - Risk: minimal	99202	- Personally provided - Primary care exception - Physicians at teaching hospitals
Comprehensive - Chief complaint - HPI (4) - ROS (2-9) - Past, family, social history (1)	Detailed: - 7 systems	Low: - Diagnosis: limited - Data: limited - Risk: low	99203	- Personally provided - Primary care exception - Physicians at teaching hospitals
Comprehensive - Chief complaint - HPI (4+) - ROS (10+) - Past, family, social history (3)	Comprehensive: - 8 or more systems	Moderate: - Diagnosis: multiple - Data: moderate - Risk: moderate	99204	- Personally provided - Physicians at teaching hospitals
Comprehensive - Chief complaint - HPI (4+) - ROS (10+) - Past, family, social history (3)	Comprehensive: - 8 or more systems	High: - Diagnosis: extended - Data: extended - Risk: high	99205	- Personally provided - Physicians at teaching hospitals



CODING AND BILLING – ESTABLISHED PATIENT

HISTORY	EXAM	MEDICAL DIAGNOSIS MAKING	CODE	APPLICABLE GUIDELINES
Expanded problem focused: - Chief complaint - HPI (1-3)	Problem focused: - 1 body system	Straight forward: - Diagnosis: minimal - Data: minimal - Risk: minimal	99212	- Personally provided - Primary care exception - Physicians at teaching hospitals
Expanded problem focused: - Chief complaint - HPI (1-3) - ROS (1)	Expanded problem focused: - Affected area and others	Low: - Diagnosis: limited - Data: limited - Risk: low	99213	- Personally provided - Primary care exception - Physicians at teaching hospitals
Detailed - Chief complaint - HPI (4+) - ROS (10+) - Past, family, social history (3)	Detailed: - 7 systems	Moderate: - Diagnosis: multiple - Data: moderate - Risk: moderate	99214	- Personally provided - Physicians at teaching hospitals
Comprehensive - Chief complaint - HPI (4+) - ROS (10+) - Past, family, social history (2)	Comprehensive: - 8 or more systems	High: - Diagnosis: extended - Data: extended - Risk: high	99215	- Personally provided - Physicians at teaching hospitals

EVIDENCE

- References

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