HEALTH ADVISORY
ZIKA VIRUS
October 24, 2016

Information is evolving rapidly, please check website resources listed for the most up to date information.

KEY UPDATES since 8/10/16 Zika Health Advisory

Prevention
- In addition to recommendations for pregnant women to postpone travel to areas with local mosquito-borne Zika transmission and outbreaks, CDC issued special travel considerations for Southeast Asian countries where Zika virus is endemic (https://wwwnc.cdc.gov/travel/page/zika-virus-southeast-asia)
- Prevention of sexual transmission was expanded to include recommendations for use of barrier methods after possible Zika exposure, even if asymptomatic, for both men and women for 6 months and 8 weeks respectively, after travel to areas with active Zika transmission

Situation Update
- Alameda County has reported 20 cases of Zika virus infections & California has reported 348 (including 43 pregnant women, and 2 infants with birth defects, and 3 due to sexual transmission) as of 10/21/16. All California cases are travel-associated, with no locally acquired mosquito borne transmission. Case counts will be updated weekly on Fridays https://www.cdph.ca.gov/HealthInfo/discond/Documents/TravelAssociatedCasesofZikaVirusinCA.pdf

Testing
- Zika testing is now available at commercial laboratories: Several commercial laboratories now offer Zika PCR and/or Zika IgM antibody testing. Confirmatory serologic testing for Zika by Plaque Reduction Neutralization Test (PRNT) is still only available through the California Department of Public Health (CDPH) and CDC. Some large commercial labs have arranged to forward serum specimens that test positive or indeterminate for Zika to CDC or CDPH for confirmatory testing; as of 10/14/16, we are aware that LabCorp and Quest have made such arrangements.
- Zika testing criteria & timeframes have been updated and clarified for possible Zika exposure for pregnant women and sexual exposure depending on the gender of the sexual partner with possible Zika infection
- Zika testing criteria for infants have been updated to include all infants born to mothers with laboratory evidence of Zika virus infection during pregnancy or in the 8 weeks prior to conception, regardless of clinical abnormalities.
- See Laboratory Testing Section & algorithm on p. 4 for additional details

Clinical Practice Guidelines
- New practice guidelines for managing pregnant women, monitoring fetuses, and evaluating and managing infants affected by Zika virus have been issued (see below for details and links)
LABORATORY TESTING – additional information and details: (See testing algorithm on p. 4.)

Definitions & Timeframes for testing:

- **All pregnant women with possible Zika exposure, even if asymptomatic, up to 12 weeks after exposure.** A possible Zika exposure for pregnant women is defined as:
  - (a) Travel to an area with active Zika transmission or endemic countries in Southeast Asia within 8 weeks prior to conception through the end of pregnancy; or
  - (b) Unprotected sexual contact (vaginal, oral, or anal) with a partner who traveled to an area with active Zika virus transmission (period of potential contagion varies with gender of partner1).

- **Non-pregnant persons with Zika symptoms, up to 12 weeks after possible Zika exposure.** A possible Zika exposure for non-pregnant persons is defined as:
  - (a) Travel to areas with active Zika transmission or endemic countries in Southeast Asia in the 2 weeks before symptom onset; or
  - (b) Unprotected sexual contact (vaginal, oral, or anal) with a partner who traveled to an area with active Zika virus transmission (period of potential contagion varies with gender of partner1).

- **Persons with Guillain-Barré syndrome,** who have a history of possible Zika exposure, regardless of time interval between last possible Zika exposure and the onset of Guillain-Barré symptoms.

- **Infants:**
  - (a) With microcephaly, intracranial calcifications, or other congenital abnormalities suggestive of congenital Zika syndrome whose mother had possible Zika exposure, regardless of maternal Zika virus testing results; or

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1 Females: At least 8 weeks after a Zika diagnosis, start of symptoms, or last possible exposure
Males: At least 6 months after a Zika diagnosis, start of symptoms, or last possible exposure
(b) Born to mothers with laboratory evidence of Zika virus infection during pregnancy or in the 8 weeks prior to conception, regardless of clinical abnormalities.

For patients meeting CDC/CDPH testing criteria for Zika virus, specimen collection should be pursued as soon as possible with the following timeframes:

- **Within 14 days** of symptom onset or last potential Zika exposure both blood and urine can be tested by Zika RT-PCR. (Urine can be collected up to 3 weeks after symptom onset for PCR). However, negative Zika RT-PCR test does not exclude current or recent infection, so **both Zika and dengue IgM testing** should be ordered 2-12 weeks after the last exposure or symptom onset.

- **Between 2-12 weeks** from symptom onset or last potential Zika exposure, **both Zika and dengue IgM testing** should be ordered. Positive, equivocal, or nonspecific results require confirmatory testing by PCR (if pregnant), PRNT, or both.

Testing for dengue infection is essential because areas of active Zika transmission have concurrent dengue epidemics, and dengue and Zika serologic tests have significant cross-reactivity. Positive Zika IgM may actually be due to recent or current dengue infection. There is currently no FDA-approved Zika IgG test.

**Testing Options:**

Consider using commercial lab testing, especially for **non-pregnant patients with uncomplicated clinical illness** and Zika virus exposure related to travel. Select a laboratory that offers appropriate test types. As noted above, because many patients will require Zika PCR and IgM antibody testing, dengue PCR and/or antibody testing, and Chikungunya PCR and/or antibody testing in order to interpret the patient’s Zika infection status, selecting a laboratory that offers all required tests is advantageous.

**Obtain testing through public health** in complex situations, such as a fetus or infant with microcephaly or signs of congenital Zika virus syndrome whose mother was exposed to Zika virus; a person with Guillain-Barré syndrome and exposure to Zika virus; or when sexual, local mosquito-borne, or laboratory exposure is suspected. For updated testing request forms, specimen collection, storage and shipping guidance from the Alameda County Public Health Laboratory, check ACPHD website ([http://www.acphd.org/zika/specimen-submission.aspx](http://www.acphd.org/zika/specimen-submission.aspx)) and fax to 510-268-2111 to obtain approval and receive instructions prior to sending specimens.

**Testing Interpretation:**


**CLINICAL PRACTICE GUIDELINES**

- **Pregnant Women:**
  - The American Congress of Obstetricians and Gynecologists (ACOG) & the Society for Maternal-Fetal Medicine (SMFM) have posted a Zika virus Practice Advisory which is periodically updated: [http://www.acog.org/About-ACOG/News-Room/Practice-Advisories/Practice-Advisory-Interim-Guidance-for-Care-of-Obstetric-Patients-During-a-Zika-Virus-Outbreak](http://www.acog.org/About-ACOG/News-Room/Practice-Advisories/Practice-Advisory-Interim-Guidance-for-Care-of-Obstetric-Patients-During-a-Zika-Virus-Outbreak)

- **Infants:**
  - CDC Interim Guidance for the Evaluation and Management of Infants with Possible Congenital Zika Virus Infection, August 2016: [https://www.cdc.gov/mmwr/volumes/65/wr/mm6533e2.htm?s_cid=mm6533e2_w](https://www.cdc.gov/mmwr/volumes/65/wr/mm6533e2.htm?s_cid=mm6533e2_w)

**RESOURCES**

- CDPH Zika Virus: [http://www.cdph.ca.gov/HealthInfo/discond/Pages/Zika.aspx](http://www.cdph.ca.gov/HealthInfo/discond/Pages/Zika.aspx)
General Zika Virus Testing Algorithm – For Clinicians

Is symptom onset date or last potential exposure <14 days from specimen collection date?

Yes

Zika RT-PCR
Serum: At least 2 ml serum (5-10 ml blood) in red top or serum separator tube.
Urine: At least 2 ml fluid in leak-proof container. (Urine specimen collection cup NOT recommended! Transfer to sterile screw-cap tube and use parafilm to seal.)

Positive
Indicative of current Zika virus infection.

Negative
Does not rule out current or recent infection. Order IgM testing during the 2-12 week window.

No
Is symptom onset or last potential exposure between 2 and 12 weeks from specimen collection date?

Yes
Zika IgM and Dengue IgM
Serum: At least 2 ml serum (5-10 ml blood) in red top or serum separator tube.

Either is Positive, equivocal, or nonspecific

Is patient pregnant?

Yes
Zika RT-PCR Testing (if not previously performed)
See specimen collection information above.

Positive
Indicative of recent Zika virus infection.

Negative
Does not rule out current or recent infection. PRNT testing to be done by public health lab.

No
Consider value of testing, especially in pregnant women. Due to expected drop off in IgM and viral RNA after 12 weeks, a result of “not detected” is interpreted as inconclusive/indeterminate.

No
PRNT Testing by Public Health Lab

Positive
Indicative of recent Zika virus infection.

Negative
Zika antibodies only detected
Indicative of recent Zika virus infection.

Non-Zika flavivirus antibodies only detected (dengue, WNV, etc)
Indicative of recent or prior infection with another flavivirus.

Antibody for Zika and other flavivirus detected
Indicative of recent flavivirus infection, exact etiology cannot be determined.

No antibodies detected
No evidence of recent flavivirus infection. Consider repeat testing if Zika virus infection is strongly suspected.

Algorithm based on CDC guidance; flow chart developed by Kern County Department of Public Health (DPH); updated 9/20/2016 by San Francisco DPH; modified 10/11/16 by ACPHD.