



SAN LUIS OBISPO COUNTY *Messenger* Public Health Laboratory

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Zika virus activity—California and the US

Reports of Zika virus activity continue in Florida where pockets of transmission have been discovered, as do efforts to control the vector mosquito, *Aedes aegyptii* or *albopictus*. As of September 1, Florida officials have confirmed 43 cases of Zika virus infection due to local transmission in the Miami area. A notable response to these findings is a recommendation made by the CDC that pregnant women avoid travel to these areas.

California has yet to detect a case of local transmission although 12 counties have reported the presence of the vector mosquito. As of September 16, 282 California travelers have been reported as Zika cases, while nationally 3,176 cases have been reported. The case counts continue to rise. No cases of Zika virus infection have been detected in San Luis Obispo county residents to date, although two cases of Dengue virus—a flavivirus close cousin to Zika virus—have been detected.

The primary focus of study remains pregnant women with Zika virus infection, of which 731 have been reported nationally, and an even larger group in Puerto Rico where local transmission continues unabated. A recent report from Brazil (*Lancet* 388:846, 2016) showed that detection of newborn infections should not depend solely on the observation of a rash during pregnancy as a significant number of pregnant women under study did not report a rash. Effective surveillance is further challenged by the large number of infected individuals who report no symptoms and recognition that the virus can be sexually transmitted by an infected individual of either gender.

While the most common serious consequence of Zika infection is congenital microcephaly and other severe fetal brain defects, the incidence of Guillain-Barre syndrome (GBS) among infected adults also warrants attention. In Puerto Rico, which has been hard hit by Zika, of 56 cases of suspected GBS reported in the first seven months of 2016, 34 (61%) had evidence of Zika or other flavivirus infection (*MMWR* 65(34): 910-914). During this same period 5,582 cases of Zika infection were reported, meaning that the GBS incident rate among cases of Zika infection may approach nearly 1%.

Testing for Zika virus.

Optimal testing for Zika virus infection has been shown to require PCR testing of both serum and urine within two weeks of onset for symptomatic infections, an exposure to the mosquito vector, or sex with an infected individual. After this two week period, serologic testing using an FDA cleared IgM-capture (MAC) ELISA assay is appropriate, followed by testing of IgM-positive sera using the Plaque Reduction Neutralization Test (PRNT). In the event of an equivocal or positive MAC Elisa result, PCR testing of both urine and serum is also advised. While a positive PCR result for Zika virus RNA constitutes a confirmed case, the use of serologic methods can be confounded by the marked cross reactivity among members of the Flavivirus group, including Zika, Dengue, Yellow Fever virus, West Nile Virus and others.

As of this date, it is certain we haven't learned all there is to know about this challenging virus.