## ZIKA LABORATORY TESTING GUIDANCE

### Appropriate Clinical Specimens for Laboratory Testing of Suspected Cases For Symptomatic Suspect Cases or Asymptomatic Pregnant Women

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Serum</th>
<th>Whole Blood§ (EDTA)</th>
<th>CSF</th>
<th>Urine§</th>
<th>Other¶</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT-PCR§</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Serology: IgM with PRNT confirmation†</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

† CDC will consider testing other specimen types (e.g., saliva, placental tissue, umbilical cord, fetal and other tissues) on a case by case basis.

§ RT-PCR is the preferred method. Urine and whole blood have been shown to be preferred specimens for confirming an acute case.

† PRNT (plaque-reduction neutralization test) may confirm cross-reactive IgM tests by measuring virus-specific neutralizing antibodies.

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### Recommended Diagnostic Testing

CDPH guidance and a Zika Screening Algorithm summarizing the evaluation and testing of patients with possible Zika virus infection can be found at the [Zika Information For Health Professionals Webpage](https://www.cdph.ca.gov/Programs/CID/DCDC/ Pages/ZikaInformationForHealthProfessionals.aspx)

CDPH provides diagnostic testing (PCR, IgM and PRNT serology) for Zika virus as well as dengue and chikungunya viruses. Zika virus testing performed at VRDL is described below.

**Health care providers wishing to arrange testing for Zika virus must contact your local public health department for consultation and approval.**

- For any suspect cases of Zika virus infection, testing should be considered for the following viruses:
  - Zika
  - Chikungunya
  - Dengue

**RT-PCR Testing:** VRDL is currently using the Trioplex Real-time RT-PCR assay which is validated for serum, whole blood, CSF, urine and amniotic fluid. Whole blood, CSF, urine or amniotic fluid **must** be accompanied by a serum.

- **Serum, whole blood or CSF:** PCR can detect Zika, chikungunya, and dengue viruses.
  - Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
  - For CSF or whole blood (EDTA required), at least 1 ml is required.

- **Urinary or Amniotic fluid:** PCR can detect Zika virus only.
  - Amniotic fluid: collect if amniocentesis is performed.
  - Collect **at least 2 mls** of fluid.
  - Urine: Specimen cups leak and are not recommended for shipping. To avoid leakage of the urine sample, transfer to a small (3-5 ml) sterile screw-cap tube and use parafilm to seal. Place the tube in a Ziploc bag with absorbent material. It is not necessary to spin or process the urine.

**Serology: IgM and PRNT testing:** VRDL currently uses the InBios ZIKV Detect™ IgM Capture ELISA which is validated for the presumptive detection of Zika virus IgM antibodies in human serum.

- Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
• Optimal collection of an acute serum is 2-12 weeks after illness onset or last known exposure. **NOTE**: If serum is collected <2 weeks from onset of illness and IgM to Zika virus is not detected, a convalescent-phase serum specimen collected <12 weeks from illness onset should be considered for further testing.

• IgM antibodies against Zika virus, dengue viruses, and other flaviviruses (e.g., yellow fever virus, West Nile virus) can cross-react possibly generating false positive results in serological tests; therefore, all IgM positive samples will be reflexed to RT-PCR and/or PRNT to discriminate among these viruses.

**Other tissues**: Consult with VRDL prior to collecting other tissues.

**Specimen storage and shipping**: Store all specimens at 4°C. Ship on cold packs within 24 to 72 hours.

**Specimen shipment**: Complete the [VRDL General Purpose Specimen Submittal Form](http://tinyurl.com/VRDL-All-Forms) found at http://tinyurl.com/VRDL-All-Forms.

**Specimens should be shipped as directed by the local public health laboratory.** For those jurisdictions without a local Public Health Laboratory, specimens can be shipped and directed to the VRDL using the following address:

Specimen Receiving
CDPH VRDL
850 Marina Bay Parkway
Richmond, CA 94804

**Questions** about specimen collection, submittal, or shipping: Please contact the VRDL Medical and Epidemiology Liaison Section, (510) 307-8585, or email VRDL.submittal@cdph.ca.gov.

**Other resources**:

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**Viral and Rickettsial Disease Laboratory**
850 Marina Bay Parkway, Richmond, CA 94804
Tel (510) 307-8585; FAX (510) 307-8599
https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VRDL.aspx  Updated 03/14/2018