Zika, Dengue, and Chikungunya in California

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Zika Virus Disease Cases
U.S. Total = 3,358*

*as of September 21, 2016

https://www.cdc.gov/zika
Reporting of notifiable diseases is mandated by state law (Title 17 CCR). Dengue, chikungunya, and Zika are reportable diseases.

Suspect dengue, chikungunya and Zika cases are reported by physicians or laboratories to their local health department (LHD). LHD follows-up and reviews cases (who, what, where, when).

LHD reports to California Department of Public Health (CDPH). Case is reviewed by subject matter expert and classification finalized.

CDPH reports confirmed and probable cases to CDC.
Zika Cases in California, 2015-2016*

- 302 travel-associated Zika cases reported
  - No local transmission
- 2 sexually-transmitted cases
- 36 cases pregnant at the time of diagnosis
- 197 of the cases residents of counties with *Aedes aegypti* and/or *Aedes albopictus*
- 222 case-patients potentially viremic while in California
  - Could serve as a source of infection to local *Aedes*

*As of September 23
## Travel-Associated Zika Cases in California 2015-2016

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>302</td>
</tr>
<tr>
<td>Percentage of female cases</td>
<td>63%</td>
</tr>
<tr>
<td>Age range</td>
<td>0 – 73 years</td>
</tr>
<tr>
<td>Median age</td>
<td>36 years</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>36</td>
</tr>
<tr>
<td>Asymptomatic pregnant women</td>
<td>21</td>
</tr>
<tr>
<td>Live-born infants with birth defects</td>
<td>2</td>
</tr>
</tbody>
</table>
### Zika Cases: Frequency of Symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Frequency of Symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash</td>
<td>82.5%</td>
</tr>
<tr>
<td>Fever</td>
<td>57.5%</td>
</tr>
<tr>
<td>Joint pain</td>
<td>56.4%</td>
</tr>
<tr>
<td>Muscle pain</td>
<td>32.9%</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>31.4%</td>
</tr>
</tbody>
</table>
Number of Travel-Associated Cases of Zika in California by Week Reported 2015-2016

Previously reported cases

New cases for the week
Travel-Associated Zika Cases in California 2015-2016

302 cases

*as of September 23, 2016*
# Travel-Associated Cases of Zika in California, 2015-2016

## Top 10 Travel History Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>71</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>39</td>
</tr>
<tr>
<td>El Salvador</td>
<td>27</td>
</tr>
<tr>
<td>Guatemala</td>
<td>27</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>20</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>19</td>
</tr>
<tr>
<td>Honduras</td>
<td>18</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>13</td>
</tr>
<tr>
<td>Jamaica</td>
<td>13</td>
</tr>
<tr>
<td>Saint Lucia</td>
<td>6</td>
</tr>
</tbody>
</table>
Zika Virus Testing in California, CDPH

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of patient specimens received</td>
<td>5873</td>
</tr>
<tr>
<td>Total number of patients tested</td>
<td>4793</td>
</tr>
<tr>
<td>Average number of patients tested per week</td>
<td>130</td>
</tr>
</tbody>
</table>

- 86% of patients tested are female
- 67% of samples tested are asymptomatic pregnant women
- ~5% of symptomatic cases tested are pregnant
## Travel-Associated Cases of Dengue and Chikungunya in California, 2015-2016

<table>
<thead>
<tr>
<th></th>
<th>Dengue</th>
<th></th>
<th>Chikungunya</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
<td>2016*</td>
<td>2015</td>
<td>2016*</td>
</tr>
<tr>
<td>Number of cases</td>
<td>137</td>
<td>109</td>
<td>275</td>
<td>16</td>
</tr>
<tr>
<td>Counties</td>
<td>23</td>
<td>27</td>
<td>30</td>
<td>11</td>
</tr>
</tbody>
</table>

*As of September 16, 2016*
Travel-Associated Cases of Dengue in California, 2015

• 137 cases from 23 counties

• 95 cases returned to counties with *Aedes aegypti* and/or *Aedes albopictus* mosquitoes
  – 76% were likely viremic while in California

• 45% of cases had travelled to Latin America
  – Mexico 17%, El Salvador 12%

• 32% of cases required hospitalization
Travel-Associated Dengue Cases in California, 2016*

109 cases

*as of September 16, 2016
Travel-Associated Cases of Chikungunya in California, 2015

• 275 cases from 30 counties
  – 140 cases in 2014

• 199 cases returned to counties with *Aedes aegypti* and/or *Aedes albopictus* mosquitoes
  – 53% were likely viremic while in California

• 91% of cases had travel to Latin America
  – Mexico 40%, El Salvador 16%, Guatemala 13%

• 8% of cases required hospitalization
Travel-Associated Chikungunya Cases in California, 2016

16 cases

*as of September 16, 2016
Aedes aegypti and Aedes albopictus Mosquito Detections by County, California, 2011-2016*

*As of September 2016
Reported human dengue and/or chikungunya cases: 2015

- San Diego: No reported cases
- Los Angeles: 1-10 reported cases
- Kern: 11-20 reported cases
- Tulare: >21 reported cases
- Fresno: No reported cases
- Madera: No reported cases
- San Mateo: No reported cases
- Imperial: No reported cases
- Orange: No reported cases
- Alameda: No reported cases
- San Bernardino: No reported cases
- Riverside: No reported cases

Aedes aegypti
Aedes albopictus
Travel-Associated Zika Cases and Aedes Detections in Los Angeles County*

* Aedes may not be found throughout the contiguous area indicated in gray.

- Zika Cases After 01 August 2016
- Zika Cases Prior to 01 August 2016
- Aedes aegypti
- Aedes albopictus

Approximate Aedes Infestation Area as of 19 Sept 2016
CDPH Guidance for Surveillance of and Response to Invasive *Aedes* Mosquitoes and Dengue, Chikungunya, and Zika in CA

- **Introduction** on *Aedes aegypti* and *Aedes albopictus* mosquitoes and the exotic viruses they can transmit

- **Recommended surveillance and response actions** for local vector control agencies and health departments under four possible scenarios:
  1. Pre-detection of *Aedes aegypti/albopictus*
  2. Post-detection of *Aedes aegypti/albopictus*
  3. Detection of *Aedes aegypti/albopictus* positive for Zika, dengue, or chikungunya before local human infection documented
  4. Detection of locally acquired human infection with Zika, dengue, or chikungunya

- **Discussion of the recommended actions**
California Zika Response Activities and Resources

- Supplement to “Guidance for Surveillance of and Response to Invasive *Aedes* Mosquitoes and Dengue, Chikungunya, and Zika in California”
- Recommends key activities and provides resources in 10 categories

<table>
<thead>
<tr>
<th>Vector Control and Surveillance</th>
<th>Maternal and Child Health Surveillance and Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Surveillance and Epidemiological Investigation</td>
<td>Rapid Birth Defects Monitoring and Follow-up</td>
</tr>
<tr>
<td>Laboratory Testing</td>
<td>Travel Health News</td>
</tr>
<tr>
<td>Prevention of Sexually Transmitted Zika Virus Infections</td>
<td>Clinician Outreach and Communication</td>
</tr>
<tr>
<td>Prevention of Blood Transfusion–transmitted Zika Virus Infections</td>
<td>Risk Communication/Community Education</td>
</tr>
</tbody>
</table>
Zika virus is transmitted by *Aedes aegypti* mosquitoes (also known as yellow fever mosquitoes) and *Aedes albopictus* mosquitoes (also known as Asian tiger mosquitoes). These mosquitoes are not native to California. However, since 2011 they have been detected in several California counties. An *Aedes* mosquito can only transmit Zika virus after it bites a person who has this virus in their blood. Thus far in California, Zika virus infections have been documented only in people who were infected while travelling outside the United States or through sexual contact with an infected traveler. To date there has been no local mosquito-borne transmission of Zika virus in California.

Zika virus is not spread through casual contact, but can be spread by infected persons to their sexual partners. Zika virus infection in pregnant women can cause *fetal microcephaly* (abnormally small head and brain) and other poor pregnancy outcomes. Additionally, there is an association between Zika and *Guillain–Barré Syndrome* (GBS), a disease affecting the nervous system.
Potential for Local Transmission is Low

- A viremic person would need to return to a region where there are *Aedes* mosquitoes and be bitten by an *Aedes* that would live long enough to become infectious and bite another person who then becomes infected.

- Mitigating factors:
  - Patchy *Aedes aegypti* and *albopictus* distribution in CA
  - Use of AC, window and door screens
  - Better water management than in other countries
  - Good mosquito control

- If an outbreak were to occur, it would likely be limited in scope and duration.

- Outbreaks of dengue and chikungunya elsewhere in the US have been contained.

- Therefore the US is unlikely to experience the same extensive outbreaks currently being experienced in Latin America; to date, local transmission in Florida is limited in scope.
Key Messages

• Risk of local transmission in California is low
• However, transmission is possible and we must be prepared to aggressively respond once a case without travel history has been reported
• Ongoing surveillance and control of Aedes are critical
• Public health risks associated with travel to countries where Zika is circulating must be conveyed to California residents; pregnant women should not travel
• Individuals with Zika/dengue/chik should be informed to take extra precautions to avoid mosquito bites during illness to avoid initiating local transmission
Questions?

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