Establishment and Implementation of A Scalable Vectorborne Disease Response Plan at the Local Level

Oklahoma City-County Health Department
Oklahoma City

2010-Human surveillance began
- Mosquito complaints and larvicide response began

2012-Outbreak year
- 50+ hospitalizations; Recognized need for surveillance enhancement and vector mitigation strategies; Partnership development

2013-Vector Surveillance
- CDC Gravid Traps- Mosquito population data; West Nile Virus testing; City/Municipal Partner collaboration

2016- Zika Virus
- BG Sentinel Traps, Airport Messaging, Travel Cases
### Zika Risk Category and Definition

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Preparedness - vector present or possible in the state</td>
</tr>
<tr>
<td>1</td>
<td>Mosquito Season (<em>Aedes aegypti</em> or <em>Aedes albopictus</em> mosquito-biting activity) - introduced travel-related, sexually, or other bodily fluid transmitted cases</td>
</tr>
<tr>
<td>2</td>
<td>Confirmed Local Transmission (single, locally acquired case, or cases clustered in a single household/community in a county or jurisdiction and occurring &lt;2 weeks apart)</td>
</tr>
<tr>
<td>3</td>
<td>Confirmed Multi-person Local Transmission (Zika virus illnesses with onsets occurring at least 2 weeks apart but within an approximately 1 mile diameter)</td>
</tr>
</tbody>
</table>

- Phased response
- Based on available epidemiology, entomologic and environmental information, the geographic area for targeted Zika virus interventions will be identified.
- Vectorborne response workgroup includes State, Federal and local partners
Collaborative Effort

OCCHD Consumer Protection

OCCHD Epidemiology

Municipalities

Media Outreach

Human disease surveillance

Municipality Partnerships

Vector Surveillance

Environmental Treatments

Habitat Remediation

State Epidemiology

Media

Outreach

Environmental Treatments

Habitat Remediation

Municipality Partnerships

Human disease surveillance

Vector Surveillance

Media Outreach

OCCHD Consumer Protection

OCCHD Epidemiology

Municipalities

State Epidemiology

Media
Vector Surveillance

• Where to start
  • CDC Arbonet
  • Local experts/Universities

- Aedes albopictus
- Aedes epactius
- Aedes triceriatus
- Anopheles pseudopunctipennis
- Anopheles quadrimaculatus
- Anopheles pseudopunctipennis
- Culex erraticus
- Culex quinquefasciatus
- Culex tarsalis
- Orthopodomyia signifera
Human Surveillance

- Reporting Sources
  - State/CDC
- Locally Acquired
- Travel Related
- Case Classification
- Coordinate with Public Health Protection
Staff Expertise

• Epi
• Communications
• Equipment
• Larvicide/Spraying
• Partnership Building
### SITUATION REPORT

**Volume 10, Issue 13**

**September 23, 2016**

FOR OFFICIAL USE ONLY

Remember to share information within your agency only

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#### Includes:

- West Nile and Zika surveillance summary  
  - National, State & Local levels  
- Mosquito Collection/Testing Data  
- Larvicide and Complaints Data

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<table>
<thead>
<tr>
<th>Date</th>
<th>Total Mosquitos Collected</th>
<th>Total Mosquitos Tested (%)</th>
<th>Total Traps Sites Positive for WNV*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/25/2016</td>
<td>533</td>
<td>491(92.1)</td>
<td>0</td>
</tr>
<tr>
<td>6/1/2016</td>
<td>1666</td>
<td>1,455(87.3)</td>
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</tr>
<tr>
<td>6/8/2016</td>
<td>3095</td>
<td>2,427(78.4)</td>
<td>5</td>
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<tr>
<td>6/15/2016</td>
<td>1318</td>
<td>1,102(83.6)</td>
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<tr>
<td>6/22/2016</td>
<td>862</td>
<td>702(81.4)</td>
<td>0</td>
</tr>
<tr>
<td>6/29/2016</td>
<td>215</td>
<td>154(71.6)</td>
<td>1</td>
</tr>
<tr>
<td>7/6/2016</td>
<td>301</td>
<td>249(82.7)</td>
<td>2</td>
</tr>
<tr>
<td>7/13/2016</td>
<td>387</td>
<td>314(81.1)</td>
<td>0</td>
</tr>
<tr>
<td>7/20/2016</td>
<td>500</td>
<td>441(88.2)</td>
<td>2</td>
</tr>
<tr>
<td>7/27/2016</td>
<td>1,048</td>
<td>809(77.2)</td>
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<tr>
<td>8/3/2016</td>
<td>430</td>
<td>384(89.5)</td>
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<tr>
<td>8/10/2016</td>
<td>405</td>
<td>331(81.7)</td>
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<td>8/17/2016</td>
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<td>786(63.1)</td>
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<td>8/24/2016</td>
<td>619</td>
<td>505(81.6)</td>
<td>1</td>
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<tr>
<td>8/31/2016</td>
<td>1,208</td>
<td>936(77.5)</td>
<td>3</td>
</tr>
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<td>9/7/2016</td>
<td>726</td>
<td>504(69.4)</td>
<td>4</td>
</tr>
<tr>
<td>9/14/2016</td>
<td>449</td>
<td>384(85.5)</td>
<td>1</td>
</tr>
<tr>
<td>9/21/2016</td>
<td>572</td>
<td>483(84.4)</td>
<td>2</td>
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<tr>
<td>Grand Total</td>
<td>15,580</td>
<td>12,457(80.0)</td>
<td>30</td>
</tr>
</tbody>
</table>

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- Water bodies treated by OCCHD: 22
- Total estimated gallons treated by OCCHD: 147,000
- Number of complaints addressed since April: 245

Sent weekly and as needed to Emergency Preparedness Partners, storm water quality, City officials, etc.

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[occhd.org](http://occhd.org)
Budget

• Program
  • FTE
  • Equipment
  • Supplies
  • Testing

occhd.org
Traps

• Trap Types
  • List of traps...Gravid, BG, Kill, Light, Others...

• Maintenance
• Personnel
• Location
• Purchasing
• Types
  • Larval Dipping
  • Adult
    • Specific for Disease

• Internal Capacity
  • Expertise
  • Equipment
Communication Strategies

• Partners
  • Current Information
  • Strategy

• Public
  • Risk, Prevention, Action

• Media
• Social Media
• Website
2017 Media Outreach

• Earned Outdoor billboards:
  • 19 boards valued at $78,000 in 2017
  • Tyler Media and Vital Outdoor donated over $500,000 worth of billboards in 2016

• 1,400 Fight the Bite posters placed around areas of known WNV positive mosquitoes

3 D’s and a P!
• Drain
• Dress
• DEET
• Prevent

occhd.org
33 WNV/Zika virus/mosquito prevention interviews in 2017 TV, Radio, Print, English & Spanish

PSA used on Cox Cable Television

SKEETER DEFEATER: Local health officials create plan to fight disease-carrying mosquitoes

OCCHD.org
Lessons learned

• Develop talent within your workforce.
• Learn from others and research
• A scalable plan can be developed with minimal costs.
• Communications and outreach are critical.
• Be a leader and SME for your area.
• Trapping is critical
Vectorborne Resources

• Fight the Bite
  www.OCCHD.org/fightthebite

• Vectorborne Disease Toolkit
  www.OCCHD.org/VectorborneDiseaseToolkit
Contact Information

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Questions?