Zika Preparedness and Response: A Public Health and Legal Perspective

March 18, 2016
Webinar Panel Discussion
“Zika Preparedness & Response: A Public Health & Legal Perspective”
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Introduction to Zika Virus & the Public Health Response

Steve Monroe, PhD
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What is Zika virus disease (Zika)?

- Disease spread primarily through the bite of an *Aedes* mosquito infected with Zika virus.
- Most people won’t even know they have Zika.
- Symptoms are mild and last for several days to a week.
How is Zika transmitted?

- Zika can be transmitted through:
  - Mosquito bites
  - From a mother to her unborn baby
  - Sexual contact
  - Blood transfusion
When is a person infectious with Zika?

- During the first week of illness, Zika virus can be found in blood for about a week. If a mosquito bites the person, it becomes infected and can pass the infection to others.
Zika and Sexual Transmission

What we know

- Zika virus can be transmitted by a man to his sex partners.
Zika and Sexual Transmission

What we do not know

- We do not know how long the virus is present in semen in men who have had Zika.
- We do not know if infected men who never develop symptoms can have Zika virus in their semen.
- We do not know if infected men who never develop symptoms can transmit Zika virus through sex.
- We do not know if a woman can transmit Zika virus to her sex partners.
- We do not know if Zika can be spread through oral sex. Although there are no known cases of Zika transmission from mouth-to-penis oral sex, Zika is known to be spread from semen.
- It is not known if Zika can be spread from other body fluids that may be exchanged during oral sex, including saliva and vaginal fluids.
How does Zika virus affect people?

- Anyone who lives in or travels to an area where Zika virus is found and has not already been infected with Zika virus can get it.
- Most people infected with Zika won’t even know it.
- For those who do get sick, Zika is a mild illness.
How does Zika affect pregnant women?

- Zika infection in pregnancy is linked to microcephaly.
  - Microcephaly: birth defect in which a baby’s head is smaller than expected when compared to babies of the same sex and age.
  - Previous infection will not affect future pregnancies.
Does Zika cause Guillain-Barré Syndrome (GBS)?

- GBS is very likely triggered by Zika in a small proportion of infections, much as it is after a variety of other infections.
- GBS is an uncommon sickness of the nervous system in which a person’s own immune system damages the nerve cells, causing muscle weakness, and sometimes, paralysis.
How is Zika treated?

- There is no specific medicine or vaccine for Zika virus.
Zika in the Americas

31 countries and territories affected
Zika in the United States

258 travel-associated cases in 34 states plus D.C.
Range of Aedes mosquitoes in the United States

Approximate distribution of *Aedes aegypti* in the United States.*

Approximate distribution of *Aedes albopictus* in the United States.*

*Maps were developed using currently available information. Mosquito populations may be detected in areas not shaded on this map, and may not be consistently found in all shaded areas.*
What is CDC doing?

- Working with partners to:
  - Educate healthcare providers and the public about Zika.
  - Post travel notices and other travel-related guidance.
  - Provide state and territorial health laboratories with diagnostic tests.
What is CDC doing?

- Working with partners to:
  - Monitor and report cases.
  - Support mosquito control programs both in the United States and around the world.
  - Conducting studies to learn more about Zika and microcephaly and Guillain-Barré syndrome.
CDC ZIKA VIRUS GUIDANCE

- CDC travel guidance for pregnant women issued within days of laboratory tests showing an association between Zika and microcephaly.

- Other guidance released such as:
  - Health care providers caring for pregnant women and women of reproductive age
  - Sexual transmission
For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Executive Orders and Emergency Declarations for the West Nile virus: Applying Lessons from Past Outbreaks to Zika

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Always seek the advice of an attorney or other qualified professional with any questions you may have regarding a legal matter.
Important concept: federalism

- Federalism is the separation of powers between the different levels of government
  - Article 1, Section 8 of the Constitution: federal government’s enumerated powers
    - interstate commerce
    - tax and spend
    - national defense
  - 10th Amendment of the Bill of Rights: “powers not delegated to the United States by the Constitution... are reserved to the States”
  - States may delegate powers to localities
Important concept: emergency declarations

- Emergency declarations are:
  - Public announcements
    - “An emergency has occurred and the state will respond to it.”
  - Legal determinations
    - Special emergency grant by legislature through its powers over lawmaking
    - Made by an authorized government official
    - Trigger special emergency powers
    - Allow expenditure of emergency funds
    - Can be tailored to type of event
Collecting and Coding West Nile virus Executive Orders and Emergency Declarations

- Focused on West Nile virus declarations, due to focus on mosquito abatement
- Used legal databases, online searches, and contacting jurisdictions directly
- Examined documents to determine what types of actions each ordered to respond to the West Nile virus
- Established coding categories to find common trends
  - Jurisdiction, date, types of actions ordered, etc.

Culex quinquefasciatus mosquito

<table>
<thead>
<tr>
<th>Type of Mosquito</th>
<th>Viruses spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aedes aegypti, Aedes albopictus</td>
<td>Chikungunya, Dengue, Zika</td>
</tr>
<tr>
<td>Culex species</td>
<td>West Nile</td>
</tr>
</tbody>
</table>
How many West Nile virus EOs and emergency declarations did we find?

- As of February 21, 2016, we found 21 local, state, and federal EOs and declarations

![Bar chart showing states with West Nile virus outbreaks]
Interesting Trends

- **What levels of government declared West Nile virus emergencies?**
  - 13 local
  - 6 state
  - 2 federal

![Bar chart showing levels of government that have issued executive orders or emergency declarations for West Nile virus outbreaks. The chart indicates 13 local, 6 state, and 2 federal levels of government.](chart.png)
Interesting Trends

- Who issues West Nile virus EOs and declarations?
  - Wide variety!
Interesting Trends

- **When are West Nile virus EOs and declarations Issued?**
  - All but 3 were issued in August or early September

- **What does this tell us?**
  - Most West Nile virus outbreaks reached the level of severity that emergency declarations were needed towards the end of summer
Interesting Trends

- What types of actions are being ordered?
  - Generic response
  - Mosquito abatement
  - Disease surveillance and reporting
  - Public outreach and education

![Chart showing types of actions taken by West Nile virus EOs and emergency declarations. The chart indicates that Generic Response is the most common action, followed by Mosquito Abatement, Disease Surveillance and Reporting, and Public Outreach and Education.]
PHLP’s Zika Page:

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For more information, contact CDC
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Zika Preparedness and Response: A Local Perspective

Bob Eadie, JD
Administrator and Health Officer
Monroe County Health Department
(Florida Keys)
Overview of the presentation

- Background
- How did this happen?
- Community Action Plan
  - What did we learn from dengue?
- Zika v. Dengue Prevention
- Health Care Considerations
- Concluding thoughts
Background

- Monroe County/Florida Keys Mosquito Control District (FKMC) internationally recognized organization with a $10M Budget and 60 employees
- Locally-acquired dengue virus in 2009 in Key West
- Over 90 people were diagnosed and 2 were hospitalized.
- It had been over 70 years since the last case of dengue had occurred in the Keys
How did this happen?

All the elements for an outbreak came together.

- There was an infected person
- The necessary species of mosquito
- The infection and survival of a sufficient number of mosquitoes to infect other humans
- Repetition of the cycle
- And so the outbreak occurred
Community Action Planning

- Roles and responsibilities will change as the incident transpires.
- Local health director and his legal advisors are the ones expected to translate all the theory and policies into effective action.
- Who should participate in planning discussions?
  - Mosquito control officials (whether from within the local health department another agency)
  - Local government elected officials
  - City and county managers
  - Local health community (including family planning and STI clinics)
  - Law enforcement
  - Legal community and representatives for the community at large
Community Action Planning: Questions to consider

1. Does your jurisdiction have the Aedes Aegypti mosquito?
2. Who has the primary responsibility/authority for mosquito control?
3. What are the personnel requirements for effectively controlling this species of mosquito?

*Maps were developed using currently available information. Mosquito populations may be detected in areas not shaded on this map, and may not be consistently found in all shaded areas.
Community Action Planning: Questions to consider

4. If an outbreak occurs:
   - Do you have staff members who can lead and sustain public education and mobilization efforts?
   - What is the legal authority in your locality to enter and inspect private property and take appropriate control actions?
   - Know what protocols CDC and state health and mosquito control authorities recommend. Make sure you have access to the antibody tests from CDC.
   - Who will handle rumor control and how will the public have access to valid to correct information?
   - How will the legal and law enforcement communities be involved?
Zika v. Dengue Prevention

Zika:

- The ability of the virus to be sexually transmitted adds an extremely complex dimension to local prevention planning.
  - It will be necessary to add expertise from the family planning and STI communities.
  - Requires partnerships and collaborations heretofore not contemplated.
  - Dearth of scientific data upon which to formulate programs and strategies.
Healthcare Considerations

- Health department is responsible for making sure the medical community is educated.
- Once an outbreak occurs, the primary focus should shift to assuring that medical providers are kept informed of the latest medical information and available treatment options.
- Consider access and equity issues.
Concluding Thoughts

- Plan now!
- Labor, resource, and emotionally intensive issue
- Initially, response must come from local sources
- Prepare for intensive media and public scrutiny
- Regularly share information on successes and setbacks in preparedness and response efforts
Bob Eadie, JD
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Pulling It Together:
The Provider and Public Health
Pulling It Together

• It’s a Global World – Disease Moves at the Speed of Sound!
  – New Infectious Diseases emerge quickly
  – Minimal time to prepare
  – Requires that hospitals, primary care, and EMS be prepared
to deal with new emerging infectious diseases with little
  warning

• The Good Thing Is….some relatively standard good practices
  provide the basis for emergency preparedness
  – Relationships
  – A Broad-Based Emergency Plan
  – Practice, Practice, Practice
Pulling It Together

• Relationships
  – The time to build relationships between Practitioners, Public Health and Legal (including the Judge) is NOT in the middle of the crisis!
    • Develop a standing committee that addresses Public Health Emergency Preparedness
    • Meet even when there isn’t an issue!
    • Evaluate your health system processes and compare them to the processes of Public Health and other health system partners, to ensure that they integrate well and are complementary, not conflicting
    • About that Emergency Plan...
Pulling It Together

• Emergency Plan
  – Look at the Emergency Plan, especially the Infectious Disease component
    • Make sure you don’t have a “Pandemic Influenza Plan”, or an “Ebola Plan”. Have a comprehensive “Infectious Disease Emergency Plan”, which accommodates a wide variety of infectious diseases that can rise to the level of a public health emergency
    • The Infectious Disease Emergency Plan should be threat and protective measure focused
    • Ensure that flexibility exists to accommodate new information from Public Health partners
Pulling It Together

• Emergency Plan
  – Look at the Emergency Plan, especially the Infectious Disease component
    • Be prepared to implement the Emergency Infectious Disease Plan in modules, so that only those portions of the Plan that are needed, based on the threat, containment, and response needs, are activated
      – Flexibility regarding activation of staffing, quarantine and isolation, supply chain, use of secondary care centers
    • Train and prepare ahead of time
      – Exercising is necessary for “preparedness muscles”
Pulling It Together

• Emergency Plan
  – Don’t forget that often, public education and care of the “worried well” is one of the most critical factors...
    • Training of staff will need to address best way to address concerns
    • As additional information regarding the virus and sequelae is learned, coordinated communication will be important to avoid confusion and inconsistent messages
    • The public cannot tell the difference between a *Aedes aegypti* mosquito, which carries Zika, and a *Culex pipiens* mosquito, which does not. Pregnant patients who have mosquito bites can be expected to be concerned, and an efficient and effective means of responding to those concerns should be established.
Pulling It Together

• Communications Plan
  – Work with Public Health on a Community-Wide Communications Plan
    • Provide information about the risks of Zika
    • Provide information about how to decrease transmission of Zika and control mosquitos
  – Prepare a Hospital/Health System Communications Plan
    • Regarding testing capabilities
    • Be prepared to handle inquiries if there is a diagnosed patient
    • To answer questions from patients about travel to areas of concern
Pulling It Together

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Pulling It Together

• Plan For Response
  – While the Zika virus is not likely, based on the information we currently have, to create surges that were anticipated with diseases such as pandemic influenza, staffing needs and resource constraints should be considered:
    • If significant disease rates are observed, anticipate increased need for monitoring of pregnant women, including increased frequency of ultrasounds. This may require additional staffing and broadened appointment times
    • Similarly, neonatal ICU and other specialty support needs may be increased to care for microcephaly and other sequelae from infection
Pulling It Together

• Plan For Response
  – Open and effective communication is critical. Rapid diagnostic tests are being developed that may be appropriate for use at your facility; be prepared to evaluate whether and how to implement in vitro diagnostic tests as they are developed.
  – Remember that Public Health preparedness is always evolving. As new information regarding the development, diagnosis and sequelae of this disease is developed, and as the next emerging infectious disease is identified, continuing review of policies to identify best practices and lessons learned will help improve the effectiveness and streamline the response at both the public health and provider levels.