CDC Hurricane Funding and Current Activities of the Arboviral Disease Branch

2019

Roxanne Connelly
Entomology and Ecology, Arboviral Disease Branch
Division of Vector-Borne Diseases
Centers for Disease Control and Prevention

The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention
Division of Vector-Borne Diseases

VISION: Create a future where vector-borne diseases no longer threaten public health

MISSION: Reduce illness and death due to VBDs

GOAL 1: Identify and detect vector-borne pathogens that cause disease in people

GOAL 2: Understand when, where, how often and how people are exposed to vector-borne pathogens

GOAL 3: Prevent exposure to vector-borne pathogens and mitigate consequences of infection

GOAL 4: Implement vector-borne disease diagnostics, surveillance, control and prevention programs
Division of Vector-Borne Diseases: Funding Mechanisms

- Broad Agency Agreements
- Cooperative Agreements
- Epidemiology and Laboratory Capacity Grants
- Hurricane and Disaster Funding
- Vector-borne Disease Centers of Excellence
Broad Agency Agreements

- Proposals for innovative research to improve the ability of CDC and its partners to effectively respond to public health outbreaks, conduct research, and perform disease prevention and control activities.

- In 2017, CDC awarded over $10 million to eight institutions. CDC anticipates that the knowledge resulting from awards will contribute significantly to the evidence base for prevention and control of vector-borne diseases.
John Hopkins University 2 years $500,000
*Improve understanding of behavior, biology and ecology of Zika virus vectors*

MosquitoMate, Inc. 3 years $1,000,000
*Develop and evaluate strategies to suppress Zika virus vectors and reduce human virus transmission*

Texas A&M University 4 years $1,200,923
*Improve understanding of Zika virus vector biology and ecology and dynamics of virus transmission in mosquito and at mosquito-human interface*

University of Arizona 4 years $1,250,000
*Develop and evaluate strategies to suppress Zika virus vectors and reduce human virus transmission*

University of New Mexico School of Medicine 4 years $1,301,000
*Develop and evaluate novel insecticide*
CDC’s Epidemiology and Laboratory Capacity (ELC) cooperative agreement

- provides annual funding to state, local, and territorial health departments to battle infectious disease threats in the United States.
- The goal of ELC vector-borne disease funding is to reduce the overall risk and number of people getting sick with illnesses from mosquito, tick, and flea bites.
- Health departments use funds to train or hire health department personnel who can identify, report, prevent, and respond to vector-borne disease threats and outbreaks.
ELC Vector-Borne Diseases Program Goal

Support Jurisdictions to build sustainable, locally relevant programs to identify, prevent and respond to vector-borne diseases
ELC VBD Funding 2012-2019

- Arbo $72,307,103
- Total $74,108,830

Estimated
Regional Centers of Excellence in Vector-Borne Diseases

BUILDING OUR NATION'S CAPACITY TO RESPOND

APPLIED RESEARCH

- Conduct applied research to develop and validate innovative and effective vector-borne disease prediction, prevention, and control tools and methods.
  - Improve mosquito & tick surveillance
  - Address gaps in knowledge of vector biology & disease transmission
  - Investigate and identify effective prevention and control methods
  - Disseminate findings directly to the public health community

RESPONSIVE TRAINING

- Train vector biologists, entomologists, and medical providers in the knowledge and skills required to address vector-borne disease concerns.
  - Training grants for working professionals
  - Innovative academic programs for the next generation of public health entomologists
  - Hands-on and web-based workshops to reach broad audiences in the vector surveillance & control community

COMMUNITY OF PRACTICE

- Strengthen and expand collaboration between academic communities and public health organizations for surveillance, prevention, and response.
  - Targeted working groups with diverse membership from academic and public sectors
  - Guidance to state and local agencies on effective approaches for vector surveillance & control
  - Enhanced networks for communication, data sharing, and integration of research and public health practice
VBD Centers of Excellence

- Mississippi
- Alabama
- Georgia
- Florida
- North Carolina
- Tennessee
- California
- Arizona
- Nevada
- Utah
- Guam
- Wisconsin
- Michigan
- Iowa
- Illinois
- Minnesota
- New York
- NY City
- Maine
- Connecticut
- New Jersey
- Vermont
- Rhode Island
- Texas
- More
Hurricane Funding – 2017 Hurricanes

- February 9, 2018
- Budget appropriated for an additional amount for “CDC-Wide Activities and Program Support”, $200,000,000, to remain available until expended, for response, recovery, preparation, mitigation, and other expenses directly related to the consequences of Hurricanes Harvey, Irma, or Maria
- 64 eligible jurisdictions
- Ends Sept 2020/Dec 2020
Hurricane Funding

- **Total amount awarded**
- CDC extramural funding total $51,136,347
- DVBD – $37,628,235
  - $27,654,293 (states, includes both partner and jurisdiction awards).
  - $10M for intramural, which funded $600k to NACCHO and about $2M to ICF
Hurricane Funding

- Amount awarded to each state/territory – Vector only

  Florida - $5,454,237
  Georgia - $1,503,489
  Louisiana - $4,986,450
  Mississippi - $366,781
  Texas - $7,860,068
  PR - $2,050,333
  USVI - $5,432,935
Regional Tire Shredder
Regional Tire Shredder

- **Red**: MAD receiving a Regional Tire Shredder
- **Green**: No MAD
- **Tan**: Public MADs
- **Purple**: Contractor MADs
### Year 1 Results: Activities

#### Work Plan Activity Coding

<table>
<thead>
<tr>
<th>Work Plan Activity Code</th>
<th>Work Plan Activity</th>
<th>Funding Recipients with Activity in Work Plan</th>
<th>% of Activities (n=65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulars</td>
<td></td>
<td></td>
<td>45%</td>
</tr>
<tr>
<td>Equipment, Supplies, and Technology</td>
<td></td>
<td></td>
<td>35%</td>
</tr>
<tr>
<td>Support to Local Programs</td>
<td></td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Mosquito Surveillance and Control Staff</td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>Mosquito Surveillance and Control Training</td>
<td></td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Mosquito Abundance Surveillance</td>
<td></td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>Resistance Testing</td>
<td></td>
<td></td>
<td>11%</td>
</tr>
<tr>
<td>Arbovirus Testing</td>
<td></td>
<td></td>
<td>11%</td>
</tr>
<tr>
<td>Communications</td>
<td></td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>Evaluation of Control Methods</td>
<td></td>
<td></td>
<td>8%</td>
</tr>
<tr>
<td>Preparedness and Response Plan</td>
<td></td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Source Reduction</td>
<td></td>
<td></td>
<td>6%</td>
</tr>
</tbody>
</table>
Year 1 Data

**Plans & SOPs**

- 3 recipients have plans for mosquito surveillance and control during a hurricane response
- 5 recipients have SOPs for engaging with FEMA after a hurricane

**Partnerships & Support**

- 45 partnerships were established or maintained to support mosquito surveillance and control
- 213 local jurisdictions received funding for mosquito surveillance and control or insecticide resistance testing

**Trainings**

- 4 recipients conducted 24 trainings on mosquito surveillance and control with 497 attendees

**Staff Hired**

- 43 new staff were hired (40.5 FTE) to perform mosquito surveillance, control, or management activities
Intramural – DVBD/ADB/EET

- Insecticide Resistance Kits, Training, and Testing
- On-line taxonomic key
- Evaluation novel interventions – Wolbachia infected males – MosquitoMate/Harris County, TX and Verily/USVI
- JAMCA: Mosquito Control Response to Natural Disasters
Estimated Potential Range of *Aedes aegypti* in the United States, 2017

Mosquitoes’ ability to live and reproduce

- Very unlikely
- Unlikely
- Likely
- Very likely
Estimated Potential Range of *Aedes aegypti* in the United States, 2017

Mosquitoes’ ability to live and reproduce
- very unlikely
- unlikely
- likely
- very likely
Eastern equine encephalitis virus (EEEV) activity in 2019
As of October 15th, 21 counties in seven states have reported human cases of EEEV disease to ArboNET for 2019 [Figure 4 and Table 2]. A total of 126 counties in 25 states have reported EEEV activity in non-human species only.

Figure 4. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state — United States, 2019 (as of October 15, 2019)

Table 2. Eastern equine encephalitis virus human disease cases reported to ArboNET, United States, 2019

<table>
<thead>
<tr>
<th>State</th>
<th>Neuroinvasive diseasecases</th>
<th>Non-neuroinvasive diseasecases</th>
<th>Totalcases*</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Michigan</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>New Jersey</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>34</strong></td>
<td><strong>0</strong></td>
<td><strong>34</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

*Includes confirmed and probable cases.
<table>
<thead>
<tr>
<th>State</th>
<th>Total Cases – West Nile</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>168</td>
<td>16</td>
</tr>
<tr>
<td>California</td>
<td>145</td>
<td>4</td>
</tr>
<tr>
<td>Colorado</td>
<td>92</td>
<td>6</td>
</tr>
<tr>
<td>Nevada</td>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>38</td>
<td>4</td>
</tr>
</tbody>
</table>
West Nile Virus - future

- Updating guidelines (from 2013)
- Meeting with ECDC
- Intervention evaluations
• Roxanne Connelly
• CDC, Division of Vector-borne Diseases
• csz5@cdc.gov