Overview

- Disease overview
  - Epidemiology Summary
  - Zika Vector/U.S. Distribution
- Prevention Strategies
- AF/SG Response Efforts
- Zika Vector Surveillance
- Vector Control Techniques
- Way Ahead for Zika Response
- Questions
Zika Virus Overview

• Transmission
  – Spread to humans by infected *Aedes* species mosquitos

• Symptoms – mild for 3 – 7 days
  – Fever, rash, joint pain and conjunctivitis (red eyes)
  – Only 1 in 5 people infected show symptoms

• Other serious ailments
  – Zika causes serious birth defects – microcephaly
  – Zika possibly linked to Guillain-Barré Syndrome

• Treatment – supportive care
Zika Epidemiology

- 40 countries/3 U.S territories reporting local Zika activity*
- In the U.S. *
  - 351 U.S. travel cases
  - 7 sexually transmitted
  - 2 cases of microcephaly
  - 0 locally acquired cases
- 1 case in the Air Force
  - 39 yr AD TSgt male
  - Traveled to Columbia
  - Symptoms soon after return
  - GA Health Dept. confirmed

* CDC data, as of 15 Apr 16
### Aedes Species Mosquitos

<table>
<thead>
<tr>
<th></th>
<th>Aedes aegypti</th>
<th>Aedes albopictus</th>
<th>Aedes polynesiensis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where they live</td>
<td>In homes</td>
<td>Around homes</td>
<td>Around homes</td>
</tr>
<tr>
<td>Where they breed</td>
<td>Artificial containers</td>
<td>Natural &amp; Artificial containers</td>
<td>Natural &amp; Artificial containers</td>
</tr>
<tr>
<td>Peak Biting time</td>
<td>Daytime</td>
<td>Dusk</td>
<td>Late Afternoon</td>
</tr>
<tr>
<td>Host</td>
<td>Humans</td>
<td>Humans/Vertebrates</td>
<td>Humans/Vertebrates</td>
</tr>
<tr>
<td>Flight Range</td>
<td>&lt;200 meters</td>
<td>&lt; 600 meters</td>
<td></td>
</tr>
</tbody>
</table>

These characteristics differ from other mosquito species and require different surveillance and control strategies.
Aedes Mosquito Predicted Range

- Aedes Aegypti range
- Aedes Albopictus range

Source: Walter Reed Biosystematics Unit
Zika Prevention

• No vaccine to prevent Zika disease
• Primary prevention involves avoiding mosquito bites
  – Stay indoor; use screens, air conditioning
  – Wear long sleeves/pants
  – Use permethrin treated uniforms/clothing
  – Use insect repellent (DEET, Picaridin) on exposed skin
Aedes Species Habitat
AF Zika Response

• Provided MTFs background info on Zika, preparatory guidance
• Aligned response actions with CDC recommendations
• Partnered with Defense Health Agency/Army/Navy medical departments to share information
• Partnered with AFIMSC/AFCEC on mosquito control educational brochure for base housing
Zika Vector Surveillance

- DoD Zika vector surveillance, testing and control on DoD installations/housing
  - Obtain equipment for *Aedes* mosquito surveillance
  - USAF School of Aerospace Med test mosquitoes for virus
  - Coordinate surveillance and control efforts with installation pest management
  - Coord surveillance and control efforts w/ installation pest management
Zika Vector Control Planning

• Coordinate with Public Health – use surveillance to identify/prioritize control efforts
• Installation Pest Management Plans
• Environmental Assessment (if required)
• DoD or State Pest Management Certification (EPA Category 8)
• Coordinate public notice and other communication efforts with Wing Public Affairs Officers via SAF PA and MAJCOM PAOs
Zika Vector Control Efforts

• Integrated Mosquito Management Techniques
  – Engineering (repair window screens, HVAC systems)
  – Sanitation (eliminate organic matter)
  – Cultural controls (empty water, drainage)
  – Larvicides (biological, insect growth regulators, chemical)
  – Adulticides (chemical)