ZIKA VIRUS

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Hudson Regional Health Commission
World’s Deadliest Animals

Number of people killed by animals per year

- 10 Shark
- 10 Wolf
- 100 Lion
- 100 Elephant
- 500 Hippopotamus
- 1,000 Crocodile
- 2,000 Tapeworm
- 2,500 Ascaris roundworm
- 10,000 Freshwater snail (schistosomiasis)
- 10,000 Assassin bug (Chagas disease)
- 10,000 Tsetse fly (sleeping sickness)
- 25,000 Dog (rabies)
- 50,000 Snake

475,000 Human

725,000 Mosquito
History of Arboviruses in US

- Malaria
- Yellow Fever
- Saint Louis Encephalitis
- Eastern Equine Encephalitis
- West Nile Virus
- Chikungunya
- Dengue
- Zika?
Dengue virus

Female mosquito takes up Dengue virus in infected blood meal

Virus transmitted back to humans in saliva

One infected female can infect many people
CHIKUNGUNYA, DENGUE, or ZIKA: What is local transmission?

A person who has not traveled recently gets bitten by an infected mosquito where they live, work, or play.

A mosquito bites a person who is sick. The mosquito gets infected.

Infected mosquitoes can then bite healthy people and spread the infection.

Within 3–7 days, the person may become sick. Other mosquitoes can bite the sick person, become infected, and bite more people.
Aedes aegypti
Aedes albopictus
# Vector Differences

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Ae. albopictus

Ae. aegypti
Potential mosquito habitats in and around your home
Source Reduction

Pro
• No chemical
• Good PR
• Easy
• Involve Public/Volunteers

Con
• Very labor intensive
• Can’t remove everything
• Doesn’t always work
Adulticiding

Pro
- Quick & Easy
- Inexpensive
- Large area
- Experience

Con
- Chemical
- Temporary
Barrier Spray

Pro
• Good control
• Long duration

Con
• Labor intensive
• Expensive
• Broad spectrum
• Bad PR
Novel Technologies

**Wolbachia**
- Bacteria
- Reduces vector capacity
- Inject eggs
- Passed on to offspring
- Spreads to population

**GMO Mosquitoes**
- Sterile Insect Technique
- Add a gene
- Release modified males
- Lethal gene inherited
- Offspring die
Risk of Zika in US

- Density of infected people
- Vector capacity
- Vector density
- Living conditions
Message

• Avoid travel
  – Pregnancy
• Personal protection
  – Habits/clothing/repellents
  – DEET, picaridin, oil of lemon eucalyptus
• Eliminate standing water
• Stay inside if travel history
• DON’T PANIC!