



Zika Virus

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Indiana State Department of Health

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What Is It?



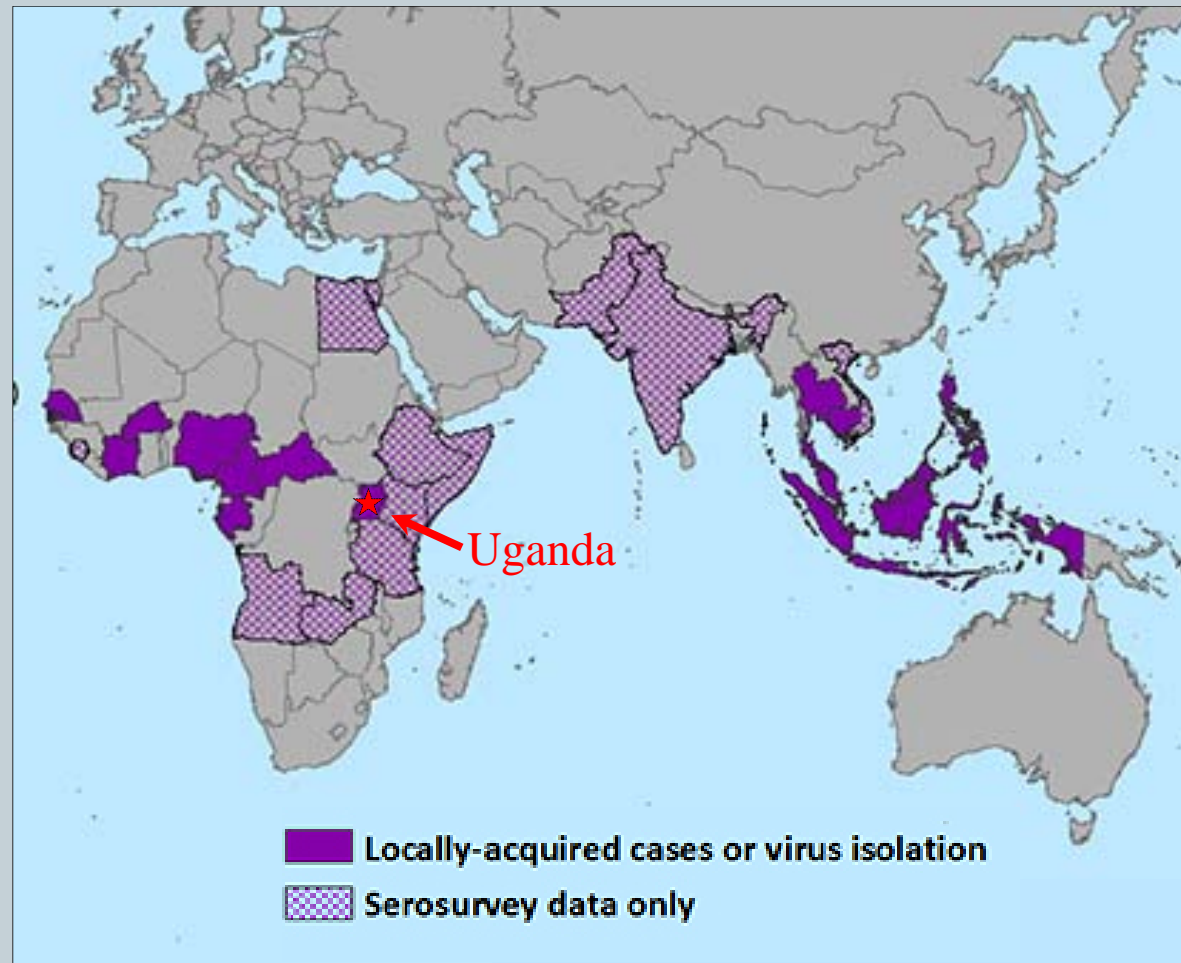
- Flavivirus
 - WNV
 - Dengue
 - St. Louis Encephalitis
 - Yellow Fever
 - Tick – Borne Encephalitis
- Single stranded RNA virus

Symptoms



- Most are asymptomatic
- Most common symptoms are fever, rash, joint pain, and conjunctivitis
 - Muscle pain and headache also reported
- Incubation period is not known, but thought to be a few days to a few weeks
- Considered a mild, self – limiting illness
 - Rarely fatal and rarely requires hospitalization
- Symptoms treated with supportive care
- Typically last 2 – 7 days

Known Geographic Extent 1947 - 2006



Source: http://www.cdc.gov/zika/images/zik-world-map_01-15-2016_web.jpg

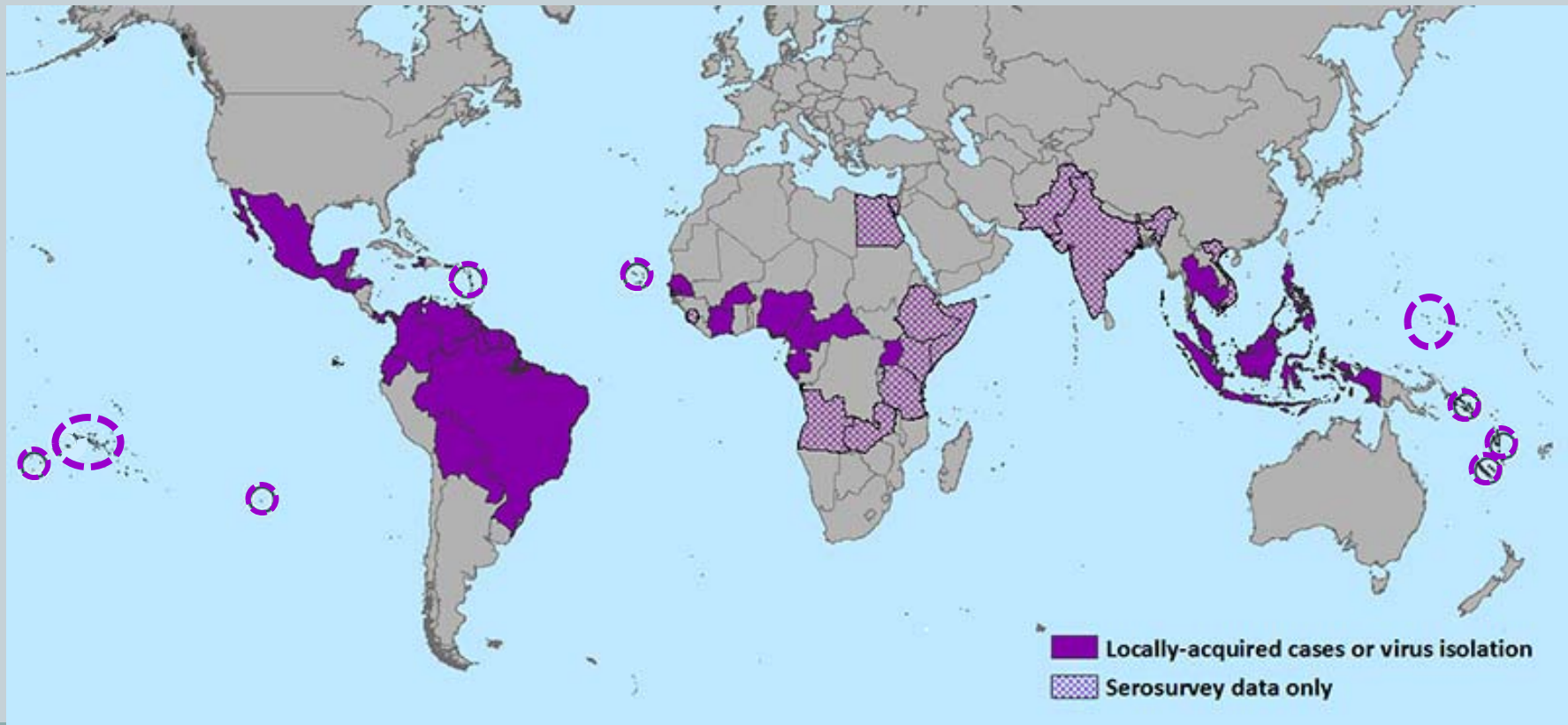
Zika Virus in the Americas



- First locally – acquired cases reported in Brazil in May 2015
 - First detected in northern states
 - Spread to 18 different states by December
- A retrospective analysis of positive Dengue tests found positive Zika samples as early as February 2015
- It is thought Zika was introduced during the 2014 World Cup or from Pacific Islanders attending an international canoe race

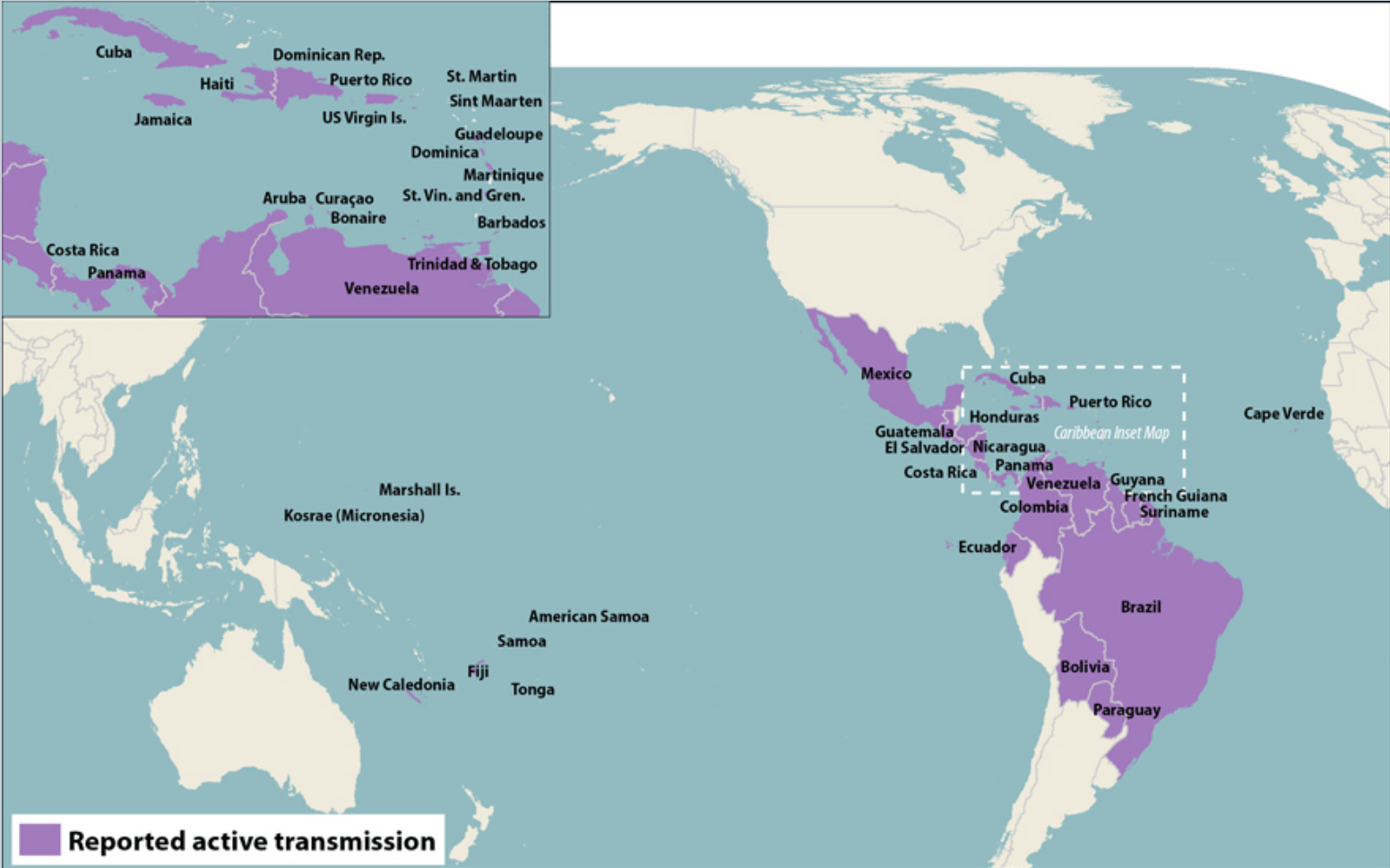
Zika Prevalence Worldwide

By January 2016, it was estimated that more than a million people had been infected in Brazil, and Zika cases had been seen in most countries of South America, Central America, in Mexico and in numerous Caribbean countries.



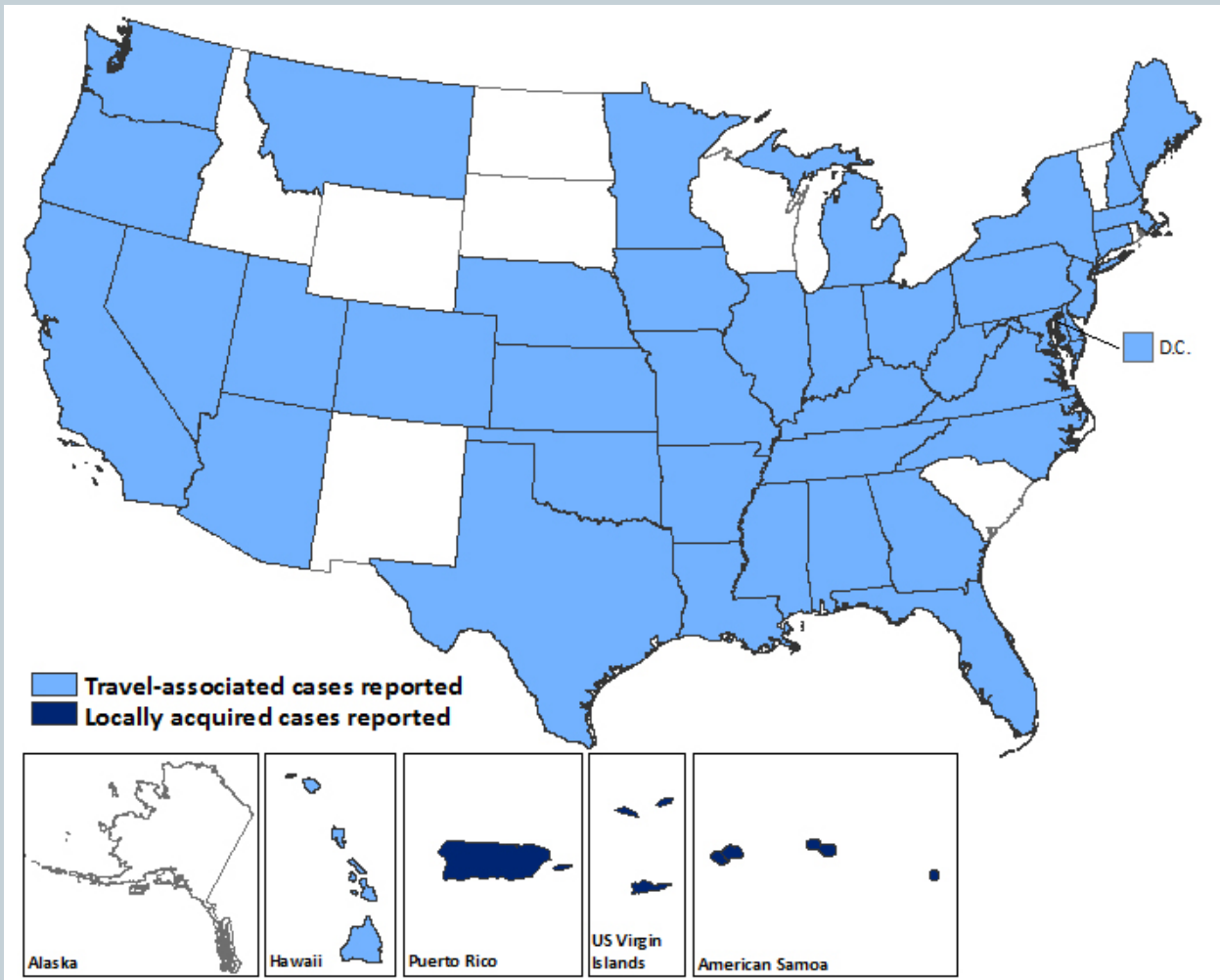
Source: http://www.cdc.gov/zika/images/zik-world-map_01-15-2016_web.jpg

Zika Virus in the Americas



Source: www.cdc.gov/zika/geo/active-countries.html

Zika in the United States



Source: www.cdc.gov/zika/geo/united-states.html

Vectors



- Transmitted primarily by *Aedes* species of mosquitoes
 - But not ALL *Aedes* mosquitoes!
 - *A. vexans* and *A. canadensis* are very prevalent nuisance species found throughout Indiana
- **The species currently implicated are *A. aegypti* and *A. albopictus***
 - *A. aegypti* is the primary vector
 - *A. albopictus* not thought to be as efficient

Aedes Aegypti



- Tropical, urban mosquito
- Container breeder
- Truly urban, must live close to humans
- Daytime biter
- Frequent / skittish biter



Source: CDC Public Health Image Library

Aedes Albopictus




- Tropical, but also subtropical
- Container breeder
- Daytime biter
- Frequent biter




Florida Medical Entomology Laboratory
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Vector Distribution



 *Aedes aegypti*



 *Aedes albopictus*

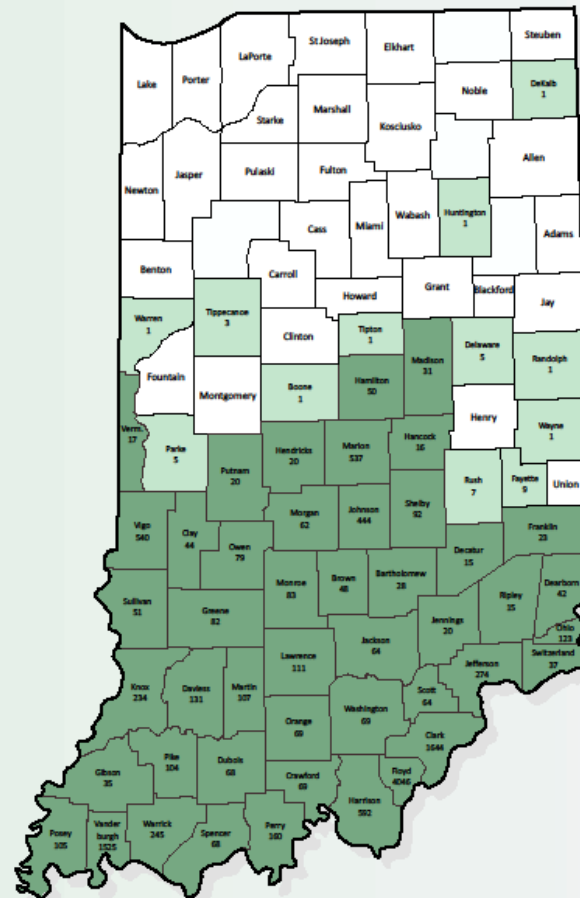
Vector Distribution



Aedes albopictus
Adult Occurrence
In Indiana: 2001-2015

Total trapped
by county

- 10 or more
- 1 to 9
- 0



Map Author: ISDH ERC PHG - Feb, 2016

New Alarming Information



- Microcephaly in Brazil
 - 150 – 200 per year, but 4,000 from October 2015 – January 2016
 - Strong evidence linking Zika Virus to microcephaly and other neurological abnormalities
- It is thought birth defects may occur in women infected during the first trimester of pregnancy
- Guillain – Barre

New Alarming Information



- In addition to mosquitoes, Zika can also be transmitted by:
 - Infection of unborn children by infected mothers
 - Blood transfusions by asymptomatic individuals
 - Sexual transmission in infected sperm
 - Has been documented in the U.S. and French Polynesia
 - Have not documented transmission from infected female to male, but currently unknown if it is possible.

So, What's the Risk in Indiana?



- Patients diagnosed with Zika will be advised to avoid additional mosquito bites for 7-10 days
- Outbreaks are much more likely when multiple infected individuals are present and frequently exposed to bites
- The presence of window screens and air conditioning here reduces contact with mosquitoes compared to tropical areas where Zika is active

What Can You Do?



- Adult vector control that we use for *Culex* doesn't work as well for *Aedes albopictus* control
- **Removal of potential breeding sites is critically important.**
 - Constantly remind citizens to empty containers and other standing water throughout the season
 - Water that can't be emptied can be larvicided
- Conduct surveys to identify potential problem areas and target control efforts

What Can You Do?



- Consider holding tire amnesty days
- Reach out to tire retailers and recyclers to insure tires aren't collecting water
- Enforce local solid waste disposal ordinances if necessary
- Consider starting / expanding adult surveillance?
- Obtain Core and Category 8 Community-Wide Mosquito Control certification
 - Even if you don't have currently treat or have the equipment to do so

Contact Info



- **Lee Green – legreen@isdh.in.gov**
- **Vector-borne Epidemiologist**
- **(317) 517-5843**

- **ISDH Mosquito-borne Disease Page:**
<http://www.in.gov/isdh/23592.htm>
- **ISDH Zika Page:**
<http://www.in.gov/isdh/26910.htm>
- **CDC Zika Page:**
<http://www.cdc.gov/zika/>