

Zika Virus Disease

Albemarle County Board of Supervisors

April 6, 2016

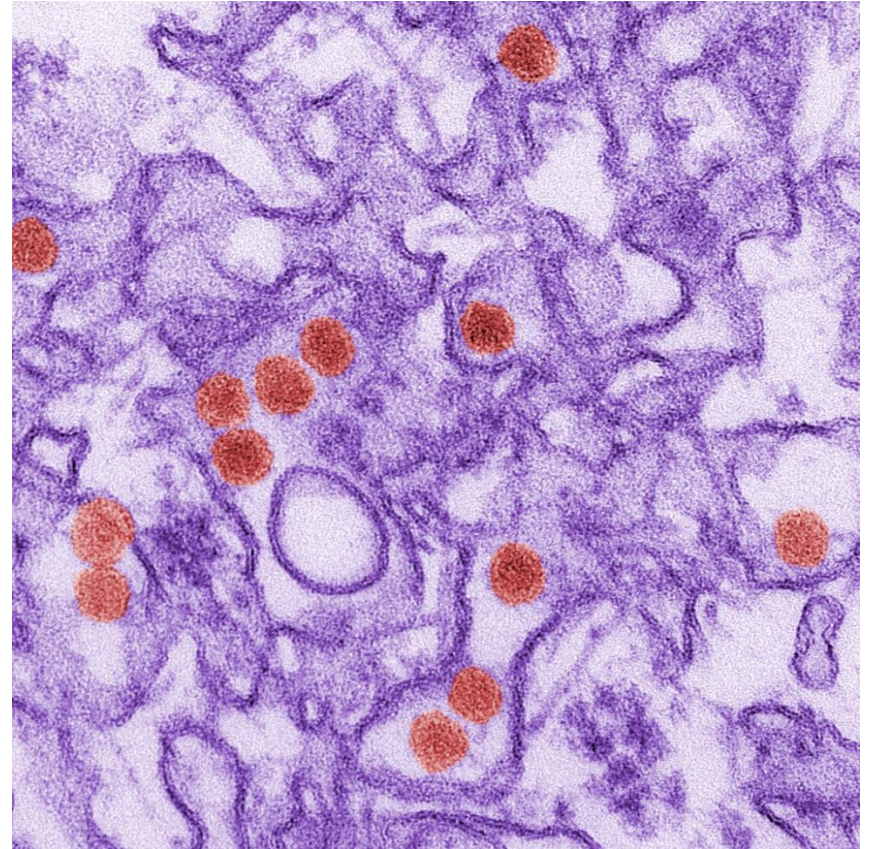
Denise Bonds, MD, MPH

Director, Thomas Jefferson Health District

Zika

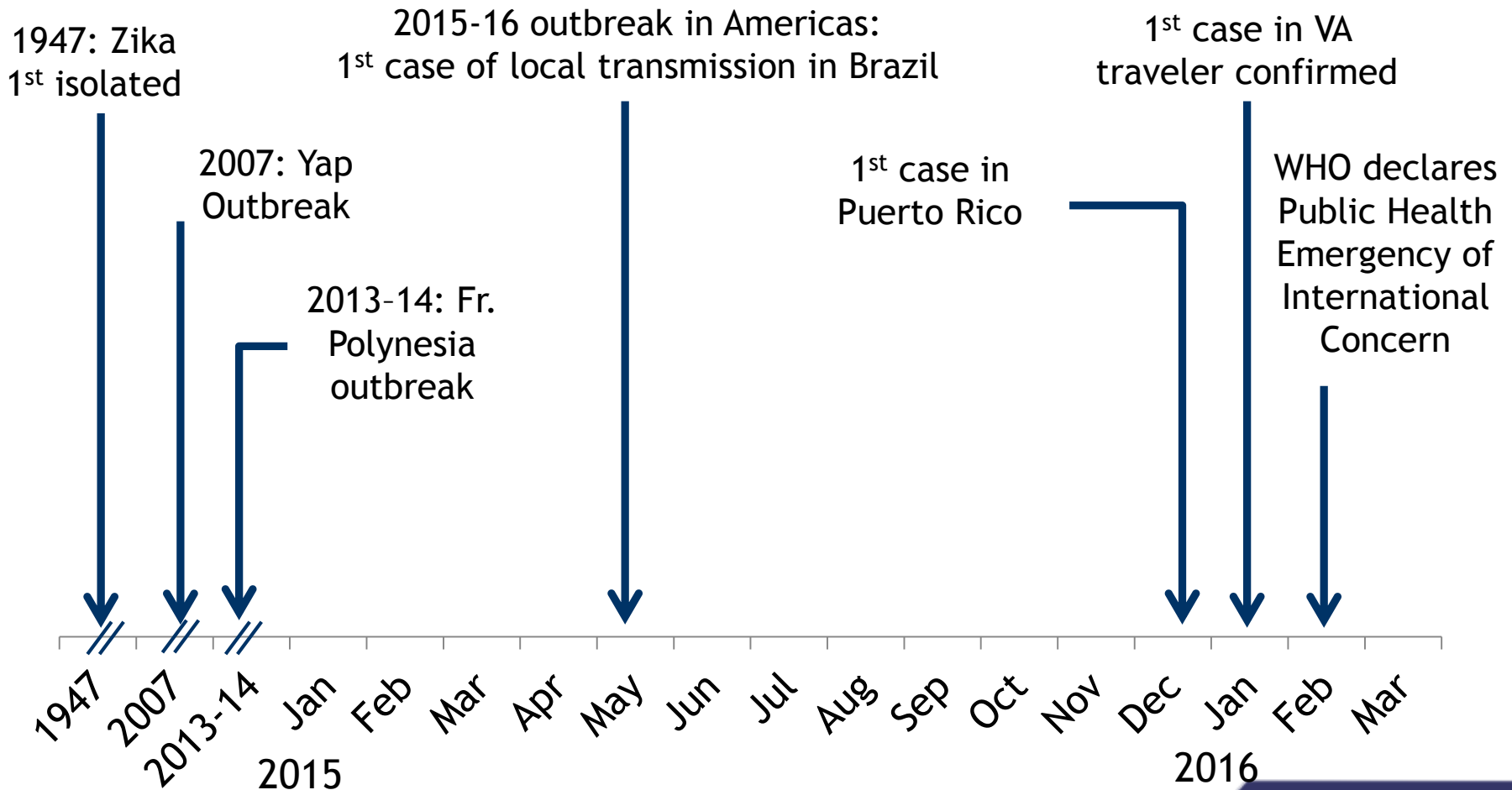
Virus belonging to
Flaviviridae family,
genus *Flavivirus*

- Other members include Yellow fever, Japanese encephalitis and West Nile viruses



Source: Photo Credit: Cynthia Goldsmith, downloaded from CDC website

Timeline of Major Zika Events



2015-2016 Outbreak in Americas

1st case of locally-spread Zika virus in Brazil confirmed in May 2015 and subsequent outbreaks in many countries

Geographic distribution of confirmed autochthonous cases of Zika virus
(vector-borne transmission) in countries and territories of the Americas, 2015-2016

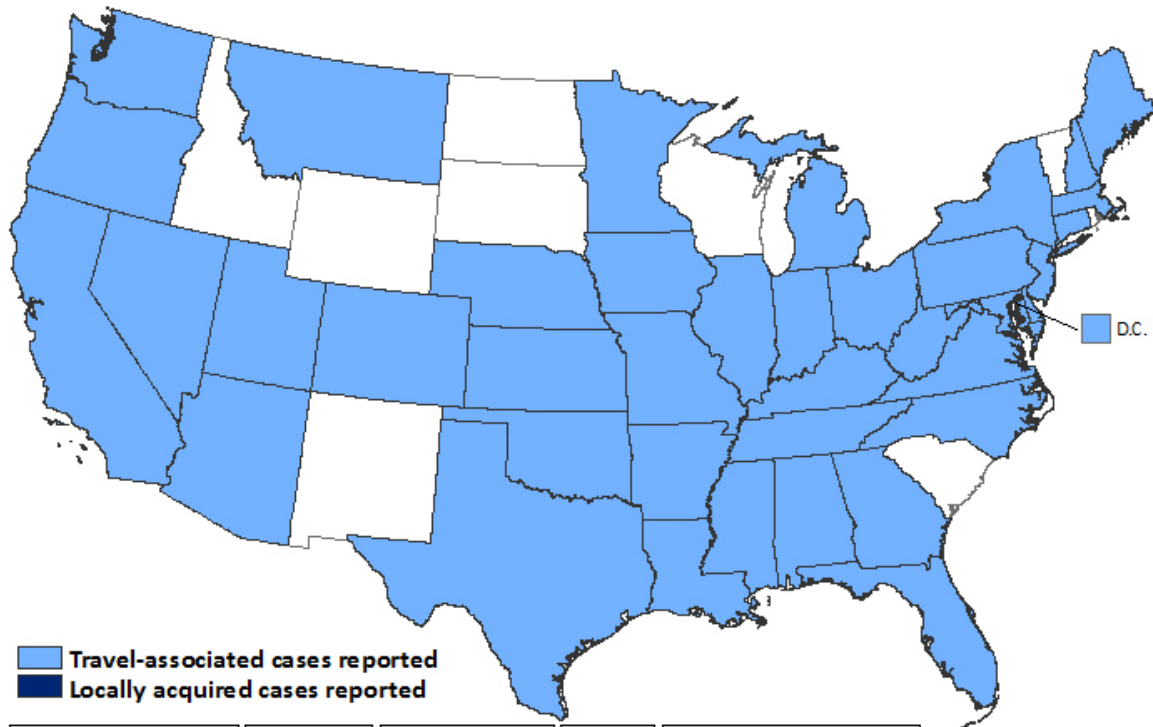
Updated as of 22 March 2016



Further spread to other areas with *Aedes* vectors is likely

Number of cases among travelers visiting or returning to US will likely increase

Zika Virus Disease in US, 2015-2016



As of March 30, 2016,
664 cases reported to
CDC's ArboNET from
US states and
territories

Source: CDC (as of March 30, 2016): <http://www.cdc.gov/zika/geo/united-states.html>



ZIKA VIRUS

What is Zika?

Zika is a virus transmitted by the *Aedes* mosquito, which also transmits dengue and chikungunya.

Zika can cause:



Mild fever



Conjunctivitis



Headache and joint pain



Skin rash



Onset is usually 2-7 days after the mosquito bite



1 in 4 people with Zika infection develops symptoms



A very small number of people can develop complications after becoming ill with the virus



Pan American
Health
Organization



World Health
Organization
REGIONAL OFFICE FOR THE
Americas

#zika
#FightAedes
#ZikaVirus
www.paho.org/zikavirus

- About 80% of those infected do not have symptoms
- Those that do become ill generally have mild symptoms
- Treatment is supportive: rest, fluids, acetaminophen
- Those with the disease should stay indoors to prevent transmission

Special Concerns for Pregnant Women and Zika

Zika virus can spread from pregnant woman to fetus

There have been reports of microcephaly (smaller than normal head size) and other poor pregnancy outcomes in babies of mothers who were infected with Zika virus while pregnant



AP Photo/Felipe Dana

Guillain-Barre Syndrome and Zika

- Rare autoimmune disorder
 - Virus triggers person own immune system to damage nerve cells
 - Result is muscle weakness and sometime paralysis
 - Most fully recover but some have permanent nerve damage with rare death
 - Not clear how Zika causes GBS but more case are seen in countries experiencing outbreak

Transmission

Spread through bite of infected *Aedes* species mosquitoes

- Mosquitoes become infected by feeding on infected persons



Source: CDC web site

Not all mosquitoes are the same. Different mosquitoes spread different viruses and bite at different times of the day.

Type of Mosquito	Viruses spread	Biting habits
 <i>Aedes aegypti</i> , <i>Aedes albopictus</i>	Chikungunya, Dengue, Zika	Primarily daytime, but can also bite at night
 <i>Culex</i> species	West Nile	Evening to morning

Source: CDC



Aedes lay eggs exclusively in containers of water

They do not lay eggs in “ground” bodies of water (e.g. puddles, flooded ditches, ponds or streams)

Distribution of Aedes Mosquitos

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



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



Source: <http://www.cdc.gov/chikungunya/resources/vector-control.html>

Zika

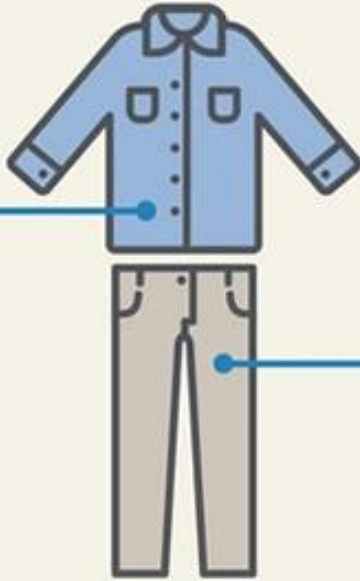
prevention



window screens



Use **physical barriers**: screens, closed doors and windows



Wear light-coloured,
long-sleeved shirts
and trousers



Use **insect repellent**

Sleep under a
bed net



Get rid of stagnant water
from places **where**
mosquitoes breed,
such as in old containers,
flower pots and used tyres



Active ingredient

Higher percentages of active ingredient provide longer protection

DEET

Picaridin, also known as **KBR 3023**, **Bayrepel**, and **icaridin**

Oil of lemon eucalyptus (OLE)
or **para-menthane-diol (PMD)**

IR3535



Some brand name examples*

Off!, Cutter, Sawyer, Ultrathon

Cutter Advanced, Skin So Soft Bug Guard Plus, Autan (outside the United States)

Repel

Skin So Soft Bug Guard Plus Expedition, SkinSmart

- Do not use insect repellent on babies younger than 2 months of age; OLE or PMD on children less than 3 years
- Use permethrin treated clothing and gear but don't apply permethrin directly on your skin

* The use of commercial names is to provide information about products; it does not represent an endorsement of these products by the Centers for Disease Control and Prevention or the U.S. Department of Health and Human Services.

Sexual Transmission of Zika Virus

6 cases of sexually transmitted Zika virus in U.S.

- All cases spread by symptomatic man to partner
- Virus can stay in semen longer than blood
- CDC recommends that women with male partner that has traveled to area with Zika use condoms for
 - 8 weeks if no symptoms of Zika
 - 6 months if Zika/symptoms of Zika
 - Duration of pregnancy