

# A PUBLIC HEALTH APPROACH TO ZIKA VIRUS

## INFORMATION FOR PHYSICIAN'S RESEARCH NETWORK

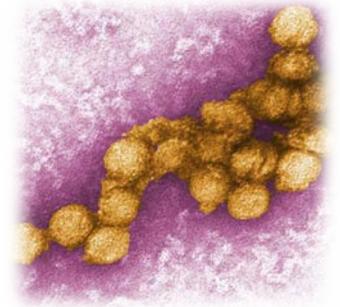
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New York City Department of Health and Mental Hygiene

September 10, 2016

# Zika Virus

- First identified in a monkey in Uganda in 1947
- RNA virus in *Flavivirus* genus
- Transmission: primarily by mosquito
- Additional routes of transmission:
  - Maternal-fetal
  - Sexual
  - Blood transfusion
  - Laboratory exposure



Flavivirus: CDC.gov

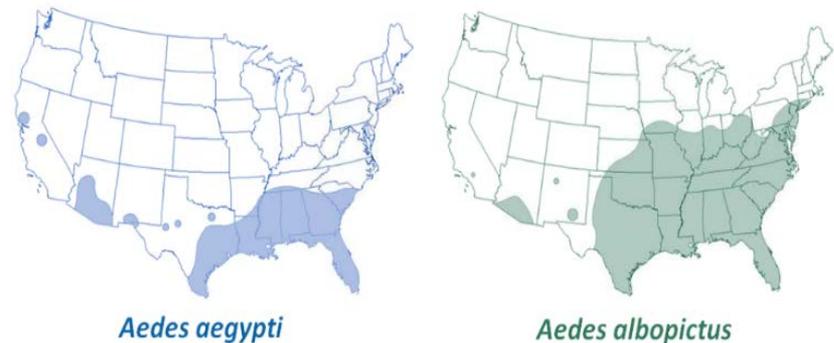
## Current epidemic nations



# Zika Virus Vectors: Aedes Mosquitoes

- Aggressive day biters
- Lay eggs in domestic water holding containers
- Live in and around households
- Among Aedes species
  - *aegypti*
    - Most efficient vector
    - Not present in northeast US
  - *albopictus*
    - Potential vector
    - Present in northeast US

## *Aedes aegypti* and *Aedes albopictus* Mosquitoes: Geographic Distribution in the United States



Left: *Aedes aegypti*    Right: *Aedes albopictus*

# Zika Virus Infection in the Continental US

- Since 2011: laboratory-confirmed cases identified in travelers returning from areas with local transmission
- Current outbreak: travel-related cases are increasing
- Lab-confirmed cases of sexual transmission documented
- Imported cases have introduced virus & local spread into the Continental United States
  - Confirmed local transmission of Zika virus in Miami-Dade County, Florida<sup>1</sup>

<sup>1</sup> <http://www.floridahealth.gov/newsroom/2016/08/080816-zika-update.html>

# Reported Cases of Zika Virus in NYC

- New York City (9/7/2016)

Transmission – All travel-associated

- 559 lab-confirmed cases of travel-associated infection
- 59 were pregnant at the time of diagnosis
- No locally-acquired vector-borne cases reported
- 5 sexually transmitted associated with partner travel

Outcomes

- 3 Guillain-Barré Syndrome travel-associated cases

# 1<sup>st</sup> NYC Baby with Zika Related Microcephaly (July 2016)

- Born in NYC hospital
- Infant tested positive for the Zika virus
- Mother was in an area with active Zika transmission during pregnancy
- Infant is being followed closely; family is being connected to necessary services and care

# Clinical Characteristics of Zika Virus Infection

- Incubation: 2 – 12 days
- Most infections (up to 80%) are asymptomatic
- When symptomatic: mild, self-limited, duration  $\leq$  1 week
- Common symptoms:
  - Maculo-papular rash
  - Fever
  - Non-purulent conjunctivitis
  - Arthralgias
- Adverse Outcomes:
  - Microcephaly, other birth defects
  - Guillain-Barré Syndrome



Maculo-papular rash



Conjunctival injection



Maculo-papular rash



Blanching macular rash

# Zika Testing – Types, Interpretation

- **WHICH TESTS TO PERFORM**

- **RT-PCR (serum and/or urine):** Detects Zika virus RNA, present during acute infection ONLY. Best performed within 7 days of illness onset.
- **Serology (serum):** Detects antibodies, non-specific for Zika. Detects exposure to flaviviruses.
- **PRNT (serum):** Plaque reduction neutralization test that requires paired serum specimens. Acute and convalescent. May discriminate between flaviviruses.

- **HOW TO INTERPRET TESTS**

- Test result interpretation can be difficult. Providers can call the Health Department for assistance in interpreting results.

**Provider Access Line: (866) 692-3641**

## Zika Testing – Whom to Test, Where to Test

- **Focus testing on pregnant women and those with Zika-compatible symptoms exposed to Zika through travel or sex**
  - NYC Health Dept. does not recommend testing non-pregnant travelers with no symptoms who returned from areas with active Zika transmission.
- Use NYC's Public Health Laboratory to test:
  - All pregnant women, regardless of symptoms
  - Fetus or infant with suspected microcephaly or other neurologic abnormality whose mother may have been exposed to Zika
  - Patients with an unusual clinical presentation (e.g., Guillain-Barré Syndrome or other neurologic manifestation)
  - Patients with an unusual potential exposure risk (e.g., sexual transmission, transfusion, or suspected local mosquito transmission)
- Use commercial labs for all other cases (all but pregnant women, infants and Guillain-Barré Syndrome patients)
- Visit for more info: [www.nyc.gov/zika/provider](http://www.nyc.gov/zika/provider)

# Obtaining Testing at the NYC Public Health Lab

- To request Zika testing at the NYC Public Health Lab, call the:

**Provider Access Line: (866) 692-3641**

- A Health Department representative will review case; if testing criteria are met, representative will:
  - Collect the information needed, complete laboratory submission form
  - Advise on the type(s) of specimen(s) to collect
  - Email or fax you completed lab submission form(s) and instructions for specimen collection and handling within 30 minutes
- Dengue and chikungunya testing should be sent to a commercial lab

# Contact Health Department to Report...

- All confirmed cases of Zika, especially pregnant patients
- Maternal confirmed/suspect Zika viral infection with impending pregnancy outcome
- Maternal history of Zika exposure and:
  - Prenatal findings of microcephaly, intracranial calcifications, or other brain or eye anomalies
  - Infants with findings possibly consistent with Zika virus infection
- Onset of Guillain-Barré Syndrome following travel to an area with active Zika virus transmission
- Suspect locally acquired case – mosquito or sexual transmission, lab accident or transfusion

**Provider Access Line: (866) 692-3641**

# New York City Health Department's Zika Response

- Increase public awareness
- Initiate and maintain *Aedes* control
- Monitor spread of Zika virus
- Educate providers, assist them with diagnosis
- Coordinate and perform laboratory testing
- Investigate suspect cases
- Monitor pregnant women with Zika infection
- Monitor infants born to Zika-infected women



# Resources

- NYC DOHMH
  - [nyc.gov/health/zika](http://nyc.gov/health/zika)
    - Information for providers (including how to obtain testing, Health Alerts):  
<http://www1.nyc.gov/zika/provider>

**Provider Access Line: (866) 692-3641**

- CDC
  - <http://www.cdc.gov/zika/>
- PAHO
  - [http://www.paho.org/hq/index.php?option=com\\_topics&view=article&id=427&Itemid=41484](http://www.paho.org/hq/index.php?option=com_topics&view=article&id=427&Itemid=41484)