



*Georgia Department of Public Health*

# West Nile Virus in Humans



Presentation to: Georgia Mosquito Control Association

Presented by: Melissa Ivey, MPH

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*We Protect Lives.*

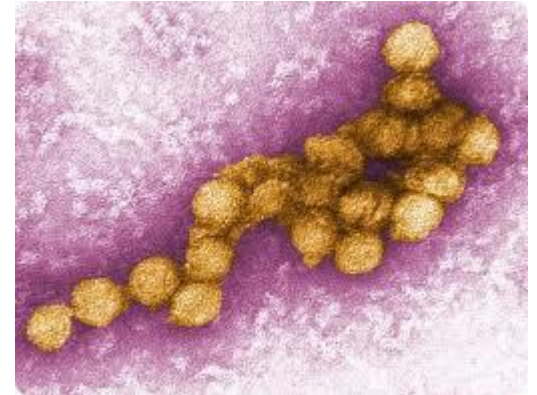


# West Nile Virus in Humans

- FAQ
  - What is WNV?
  - How do you get WNV?
  - What are the symptoms?
  - How soon will I get sick?
  - How is WNV treated?
  - How can I prevent WNV?
- Historical data (2001-2011)
- Current data (2012)

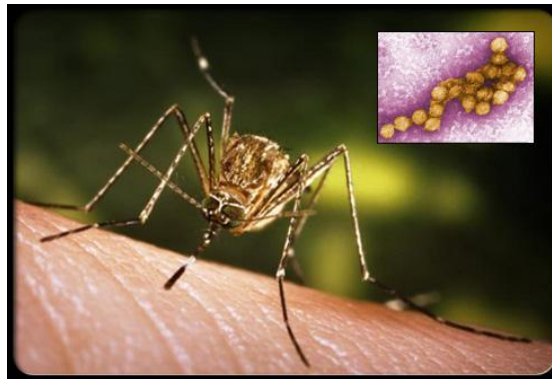
# West Nile Virus FAQ

- What is West Nile Virus (WNV)?
  - West Nile Virus is a flavivirus transmitted by mosquitoes that has been found historically in Africa, West Asia, and the Middle East.
  - The virus can infect humans, birds, mosquitoes, horses and some other mammals.
  - First identified in the United States in 1999, WNV is now established as a seasonal epidemic in North America that typically begins in the summer and continues into the fall.



# West Nile Virus FAQ - 2

- How do you get WNV?
  - WNV is usually spread by infected mosquitoes.
  - Rarely, WNV may also be transmitted through
    - ✦ blood transfusions
    - ✦ organ transplants
    - ✦ during pregnancy
    - ✦ breastfeeding
  - WNV is not spread through normal person-to-person contact.



# West Nile Virus FAQ - 3

- What are the symptoms of WNV?
  - Most people infected with WNV (80%) do not experience any symptoms.
  - Up to 20% of people infected with WNV will experience mild symptoms.
    - ✦ Fever
    - ✦ Headache
    - ✦ Body or muscle aches
    - ✦ Nausea/vomiting
    - ✦ Rash (rarely)
  - Less than 1% of people infected with WNV will experience serious symptoms.
    - ✦ Meningitis
    - ✦ Encephalitis
    - ✦ Altered mental status
    - ✦ Vision loss
    - ✦ Paralysis

# West Nile Virus FAQ - 4

- How soon will I get sick?
  - People typically develop symptoms 3-14 days after a bite from an infected mosquito.
- How is WNV treated?
  - There is no specific treatment for WNV.
  - Mild illness generally improves on its own; people often do not need medical attention.
  - Severe illness usually results in hospitalization where people can receive supportive therapy (e.g., IV fluids).

# West Nile Virus FAQ - 5

- How can I prevent WNV infection?
  - Avoid mosquito bites
    - ✦ Minimize time outdoors when mosquitoes are biting (usually dusk and dawn).
    - ✦ Wear long sleeves, pants, socks, and shoes when outdoors.
    - ✦ Apply insect repellent with DEET on uncovered skin and under the ends of sleeves and pant legs.
    - ✦ Make sure your home has tight fitting screens on doors and windows.
    - ✦ Eliminate standing water around your home.

# History of West Nile Virus

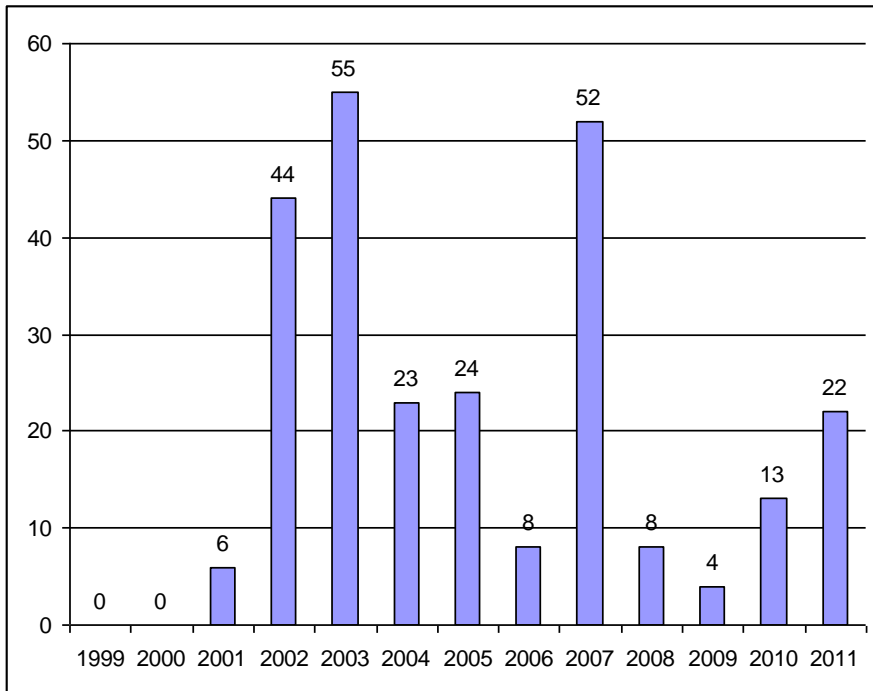
- 1999: first detected in United States (New York)
- 2001: first detected in Georgia when a bird tested positive for the virus
  - First human cases occurred the same year



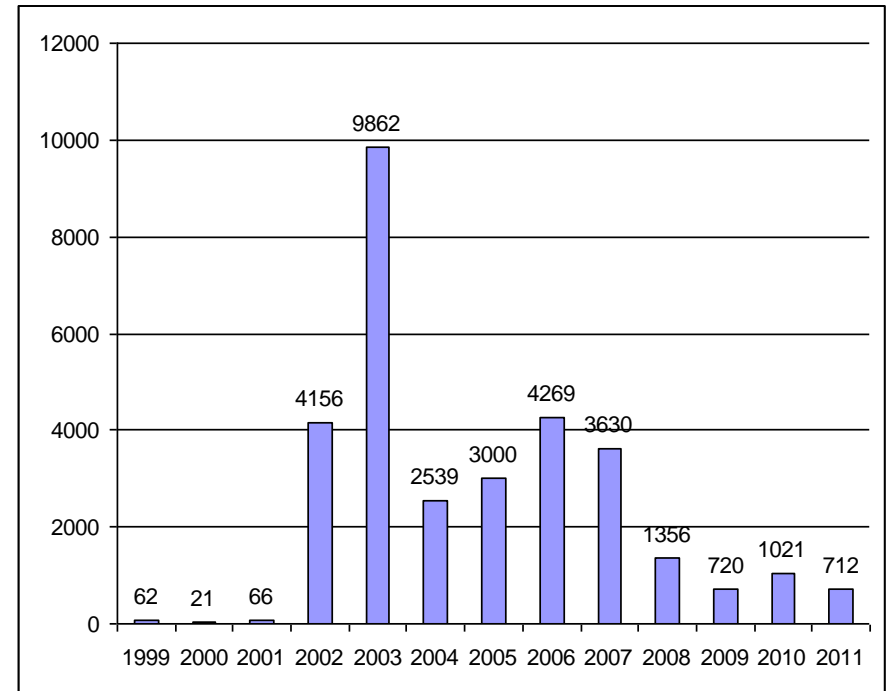


# History of West Nile Virus

## Human Cases of WNV in Georgia



## Human Cases of WNV in United States



# History of West Nile Virus

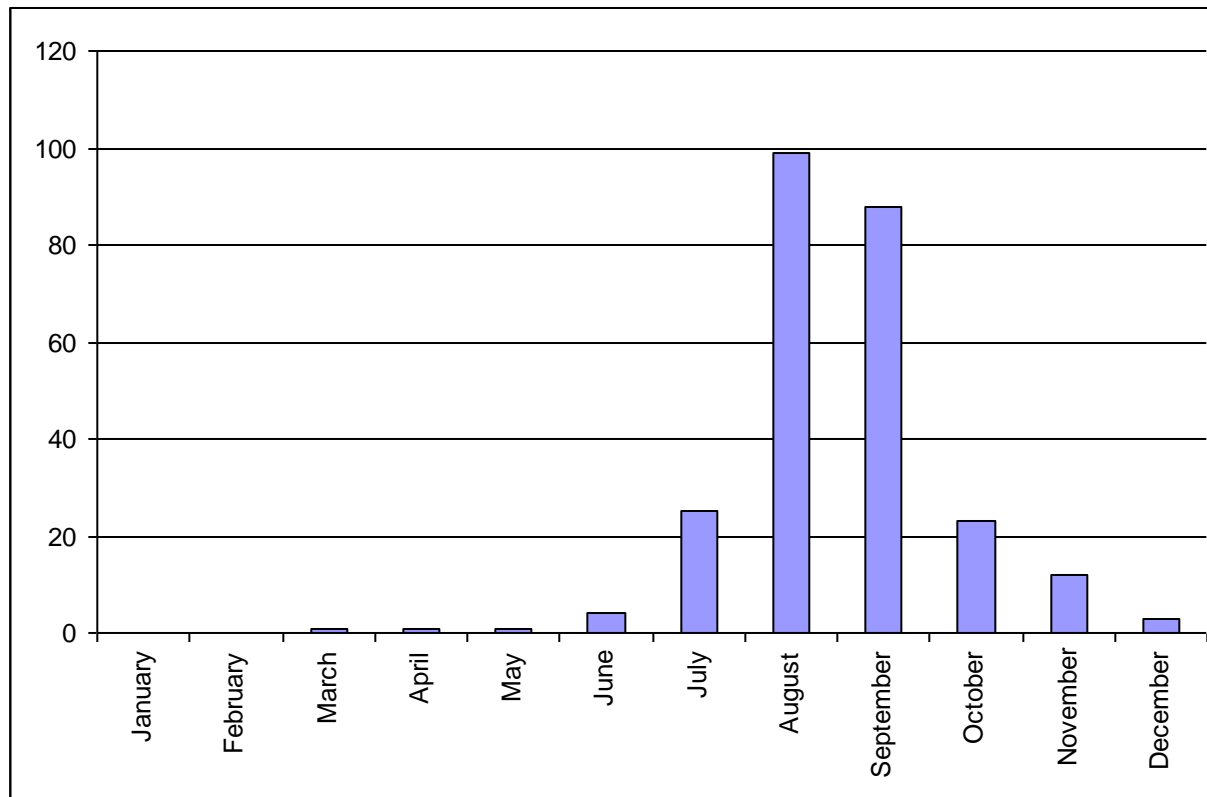
- From 2001-2011, Georgia identified 259 cases of WNV.

Gender	66% male 34% female
Race	60% white 31% black 9% other or unknown
Age	5% less than 20 years 14% 20-39 years 14% 40-49 years 24% 50-59 years 42% 60 years or older 1% unknown
Severity	42% neuroinvasive 58% uncomplicated fever or asymptomatic

# History of West Nile Virus

- Most cases occur in summer or early fall.

Human WNV Cases in Georgia by Month, 2001-2011



# West Nile Virus Surveillance 2012

- WNV cases are reported to Georgia Department of Public Health (GDPH) or local Health Districts by providers, laboratories, and blood banks.
- To be considered an acute case, individuals must have at least one positive IgM antibody result from blood/serum or cerebrospinal fluid (CSF).
  - Many individuals test positive for IgG antibodies but not IgM antibodies. These are not considered to be acute cases.
- Cases are “released” to the CDC, public, and media once investigation is completed.
  - All pending laboratory results have been received and the patient, provider, and/or family has been interviewed for clinical and exposure history.

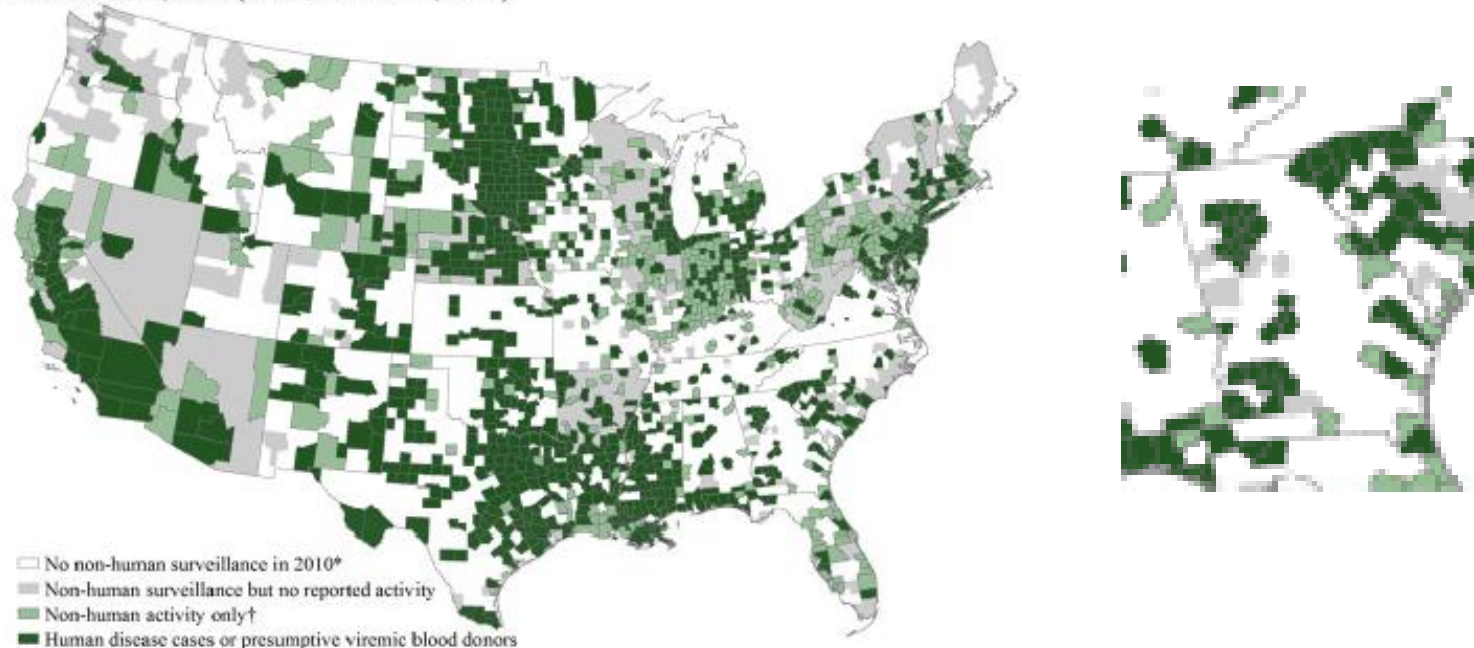
# West Nile Virus Surveillance 2012

- WNV cases are typically underreported.
  - Laboratory evidence must show signs of acute infection.
  - Physicians must order laboratory test.
  - Patient/case must be sick enough to visit a physician.
- Data show a higher percentage of neuroinvasive/severe cases than the actual value.
- With the current surveillance method in place around the United States, it is impossible to document ALL cases of WNV.

# West Nile Virus Surveillance 2012

- As of October 16:
  - Nationally, 4,531 cases of WNV have been reported, including 183 deaths.

**Figure 2. West Nile virus (WNV) activity reported to ArboNET, by county, United States, 2012 (as of October 16, 2012)**



\* As reported by state health departments in a survey conducted in October 2010. Surveillance for human disease and presumptive viremic blood donors is performed in all counties.

† Includes WNV veterinary disease cases and WNV infections in mosquitoes, birds, and sentinel animals.

# West Nile Virus Surveillance 2012

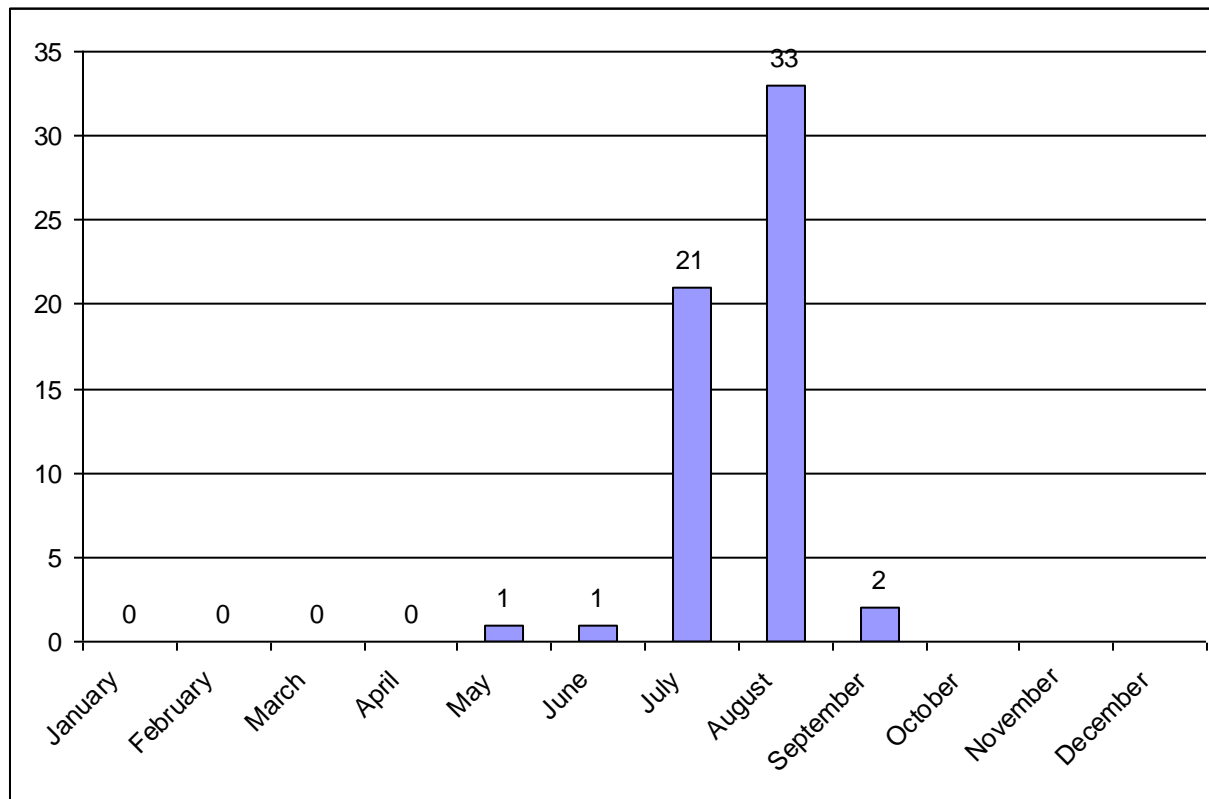
- As of October 16:
  - Georgia reported 58 cases of WNV, including 4 deaths.

Gender	<b>77% male</b> 23% female
Race	74% white 23% black 3% other or unknown
Age	3% less than 20 years 12% 20-39 years 19% 40-49 years 16% 50-59 years 50% 60 years or older
Severity	<b>58% neuroinvasive</b> 42% uncomplicated fever or asymptomatic

# West Nile Surveillance 2012

- Most cases were reported during summer, as usual.

Human West Nile Virus Cases in **Georgia** by Month of Onset, 2012

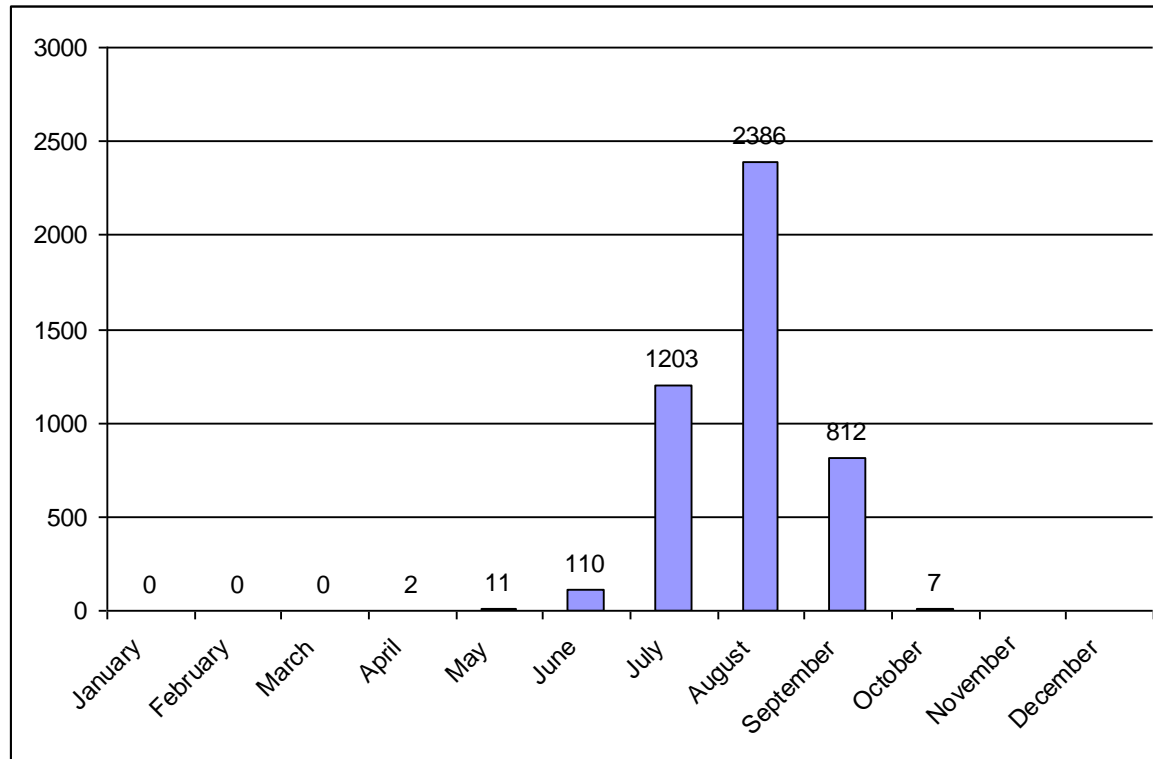




# West Nile Virus Surveillance 2012

- Most cases were reported during summer, as usual.

Human West Nile Virus Cases in the **United States** by Month of Onset, 2012



# West Nile Virus Surveillance 2012

- Why are we seeing higher numbers of WNV cases in Georgia and across the United States?
  - No one really knows.
  - Mild winter?
  - Natural cyclical patterns every few years?
- Should I be concerned about the increase in cases?
  - WNV is known to exist across Georgia and the United States.
  - It has not spread to previously unaffected areas.
  - Cases are following the normal patterns of onset (summer/fall).
  - Prevention message is the same – **Reduce your risk of mosquito bites!**

# Questions?

- References

- <http://www.health.state.ga.us/epi/vbd/mosquito.asp>
- <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

- Contact Info

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