

# Introduction to Communicable Disease Surveillance and Investigation in North Carolina



# Arboviral Illness

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# Mosquitoes

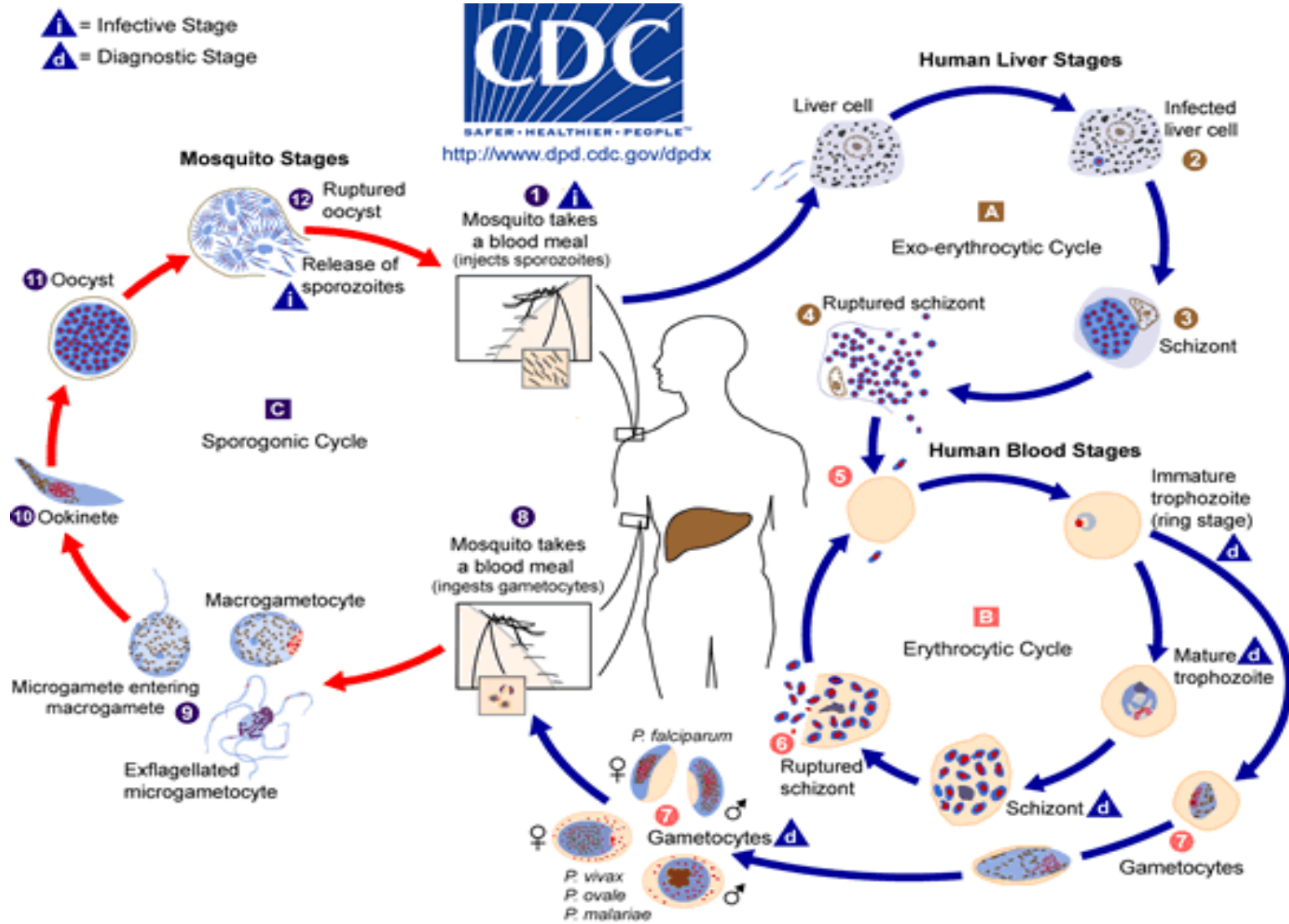


Photos Courtesy of CDC

# Learning Objectives

1. Identify reportable arboviral diseases
2. Distinguish between neuro-invasive and non neuro-invasive arboviral disease
3. Distinguish between viral and bacterial causes of meningitis/encephalitis
4. Identify key surveillance criteria for arboviral diseases

# Mosquito Life Cycle for Malaria





# Arboviral Diseases

## Reportable in North Carolina

- Neuro Invasive Disease
  - West Nile Virus
  - La Crosse Encephalitis
  - Eastern Equine Encephalitis
  - Western Equine Encephalitis
  - St. Louis Encephalitis
- Malaria
- Dengue
- Yellow Fever

# Symptoms of Arboviral Neuro-Invasive Disease

Aseptic meningitis or viral meningitis:

- fever   -headache   -stiff neck   -confusion
- personality changes   -altered mental status
- paralysis   - seizures   - coma   -death

Possible long term problems associated with  
mobility, speech and memory



# Arboviral Disease

## Surveillance criteria

- Neuro Invasive Disease
  - Requires clinical & laboratory criteria
- Travel history

# Arboviral Laboratory Criteria

- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in, tissue, blood, CSF, or other body fluid, **OR**
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera, **OR**
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen, **OR**
- Virus-specific IgM antibodies in CSF and a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred, **OR**
- Virus-specific IgM antibodies in CSF or serum.

# Prevention and Control Measures

- <http://epi.publichealth.nc.gov/cd/diseases/arbo.html>
- <http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-2-the-pre-travel-consultation/protection-against-mosquitoes-ticks-and-other-insects-and-arthropods>

# References

- North Carolina Communicable Disease website:  
<http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/toc.html>
- Centers for Disease Control Website:  
<http://www.cdc.gov/>