

## Arthropod-Borne Encephalitis in Louisiana

*Arthropod-borne Encephalitis is a Class B Disease and must be reported to the state within one business day.*

Human and equine encephalitides caused by arthropod-borne viruses (arboviruses) have occurred periodically in Louisiana for many years with occasional outbreaks. The viruses which have been identified in these cases and outbreaks have been:

- St. Louis Encephalitis (SLE), a Flavivirus
- West Nile Virus (WNV), a Flavivirus
- Eastern Equine Encephalitis (EEE), an Alphavirus
- La Crosse Encephalitis (LAC), a California-group Bunyavirus

All of these viruses are maintained in complex life cycles transmitted between reservoir hosts and mosquitoes. The reservoir hosts for SLE, EEE and WNV are wild birds. Small wild mammals are the reservoir hosts for LAC. These viruses are transmitted to humans and animals by infected mosquito vectors only after previously biting infected reservoir hosts. Mosquitoes are not syringes, as the virus must alternate between replication in mosquitoes and vertebrate hosts. Transmission between humans or horses is not known to occur. Humans and horses break the transmission cycle and are considered dead-end hosts.

Persons of all ages are considered equally susceptible to infection. Most immuno-competent persons will have unapparent or undiagnosed infections. Risk factors for the development of clinical disease varies with each virus: LAC is more likely among children younger than 15 years of age; EEE severe disease is occasionally seen in children younger than 15 years, but is more common in adults older than 50 years of age; the severity of SLE increases with age and is more common among the elderly.

Symptoms of Arboviral Encephalitis can range from mild (febrile headache or aseptic meningitis) to severe (headache, high fever, meningeal signs, stupor, disorientation, coma and tremors). Case-fatality rates range from 0.3% - 60%. Occurrence of neurological sequelae varies with age and infecting agent.

### Surveillance

Surveillance activities include: laboratory testing of blood and/or spinal fluid from horses with symptoms of central nervous system infection; laboratory testing of blood and/or spinal fluid from humans with fever symptoms or central nervous system infections; collection and laboratory testing of mosquitoes for the presence of arboviruses. Monitoring of sentinel chicken flocks is still used in some areas for surveillance of SLE. Testing wild birds for the presence of the virus had been used at the beginning of the West Nile epidemic, but it is no longer used because identification of the West Nile virus in vectors has proven to be much more useful.