

Arboviruses of Public Health Importance, Roger Nasci

- a) There are a lot of arboviruses in the US
 - i) Many families
 - ii) Many viruses within the families
 - iii) Some common, some rare
 - iv) Very few cause public health problems
- b) 1793-1905, YF
 - i) Lots of yellow fever
 - ii) Many deaths
 - iii) Now rarely seen
- c) Dengue
 - i) Distributed worldwide
 - ii) Sporadic cases seen in US
- d) Primary viruses affecting US today
 - i) EEE
 - (1) ~50% symptomatic people die
 - (2) survivors generally have severe sequelae
 - (3) potential for epidemic transmission
 - (4) 1964-2005
 - (a) Human cases reported from 20 states
 - (b) Primarily coastal
 - (c) Alphavirus
 - (d) Restricted to freshwater hardwood swamps
 - (e) Epizootic vector – *Cs melanura*
 - (f) Variety of bridge vectors – depends on overlap
 - (g) Average 5 cases per year
 - (h) Range: 0-21
 - ii) WNV
 - (1) Since 1999
 - (a) WNF: 13,921 cases
 - (b) WNND: 9786
 - (c) Total: 23707
 - (d) Deaths: 928
 - (e) Epidemiologically,
 - (i) 205,506 symptomatic cases in US
 - (ii) 1.46 million cases projected
 - (f) WNF cases are not insignificant
 - (2) Human cases reported from 46 states
 - (3) Birds
 - (a) > 300 species killed
 - (b) ecological impact
 - (4) Various vectors involved depending on location
 - (a) 175 species total in US
 - (b) 61 found carrying WNV
 - (c) evidence of pervasiveness of virus
 - (5) 2003 – largest US arboviral epidemic to date

- (6) Average ~3000 cases per year
 - (a) Neuroinvasive disease averages ~1200 cases per year
 - (b) Only capture neuroinvasive disease in other viruses
 - (c) Latent infections with recrudescence????
 - (d) Immunity – probably immune for life, includes asymptomatic cases
- iii) WEE
 - (1) *Cx tarsalis* involved
 - (2) # cases has dropped to zero
- iv) SLE
 - (1) 111 cases per year
 - (2) range: 2-1967 (1975)
- v) LAC
 - (1) Hardwood forests
 - (2) mosquitoes
 - (a) *Oc triseriatus*
 - (b) *Oc canadensis*
 - (c) *Ae albopictus*
 - (3) ~80 cases per year
 - (4) range: 29-167
 - (5) CFR low ~1%
 - (6) Short-term sequelae
 - (a) Will resolve
 - (b) Can lead to learning difficulties
 - (7) Repeat infections
 - (8) Need to define areas
- e) Differences between these and past outbreaks
 - i) Arboviral zoonoses
 - ii) Many vectors can be involved
- f) What about the money
 - i) Joint resolution FY07 – restored budget to FY06 levels
 - ii) Did not come with mark-up language
 - iii) Money has come in a lump and is subject to reprogramming
 - iv) WNV funding is still apt for cutting
 - v) May still see the 50% cut at state level
- g) WNV risk reduction
 - i) Surveillance
 - ii) IPM mosquito control
 - iii) Personal protection