



Mosquito borne viruses



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Mosquito borne viruses

- Arthropod borne viruses (arbo viruses): transmitted by Arthropods
- > 500 are known
- Most important vectors: mosquitoes and ticks



Most known mosquito born viruses

- Flaviviruses:
 - Dengue virus
 - Yellow fever virus
 - West-Nile virus
 - Japanese encephalitis virus
 - Usutu virus
 - Zika virus

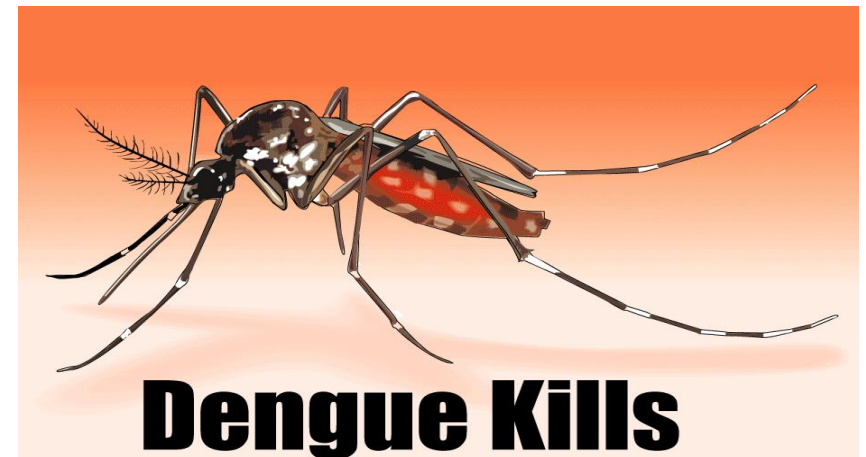
- Alphaviruses:
 - Chikungunya virus
 - Mayaro virus

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Dengue virus



Dengue Kills

Dengue

- Most prevalent mosquito born virus worldwide (390 million infections per year)
- 4 variants are known (DENV 1-4)
- Vector: Aedes Aegypti and Aedes Albopictus
- Antibody dependent enhancement (more chance of severe disease during secondary infection)
- Symptoms (20%):
 - Fever, headache, myalgia, skin rash, arthralgia

Dengue hemorrhagic fever/shock syndrome

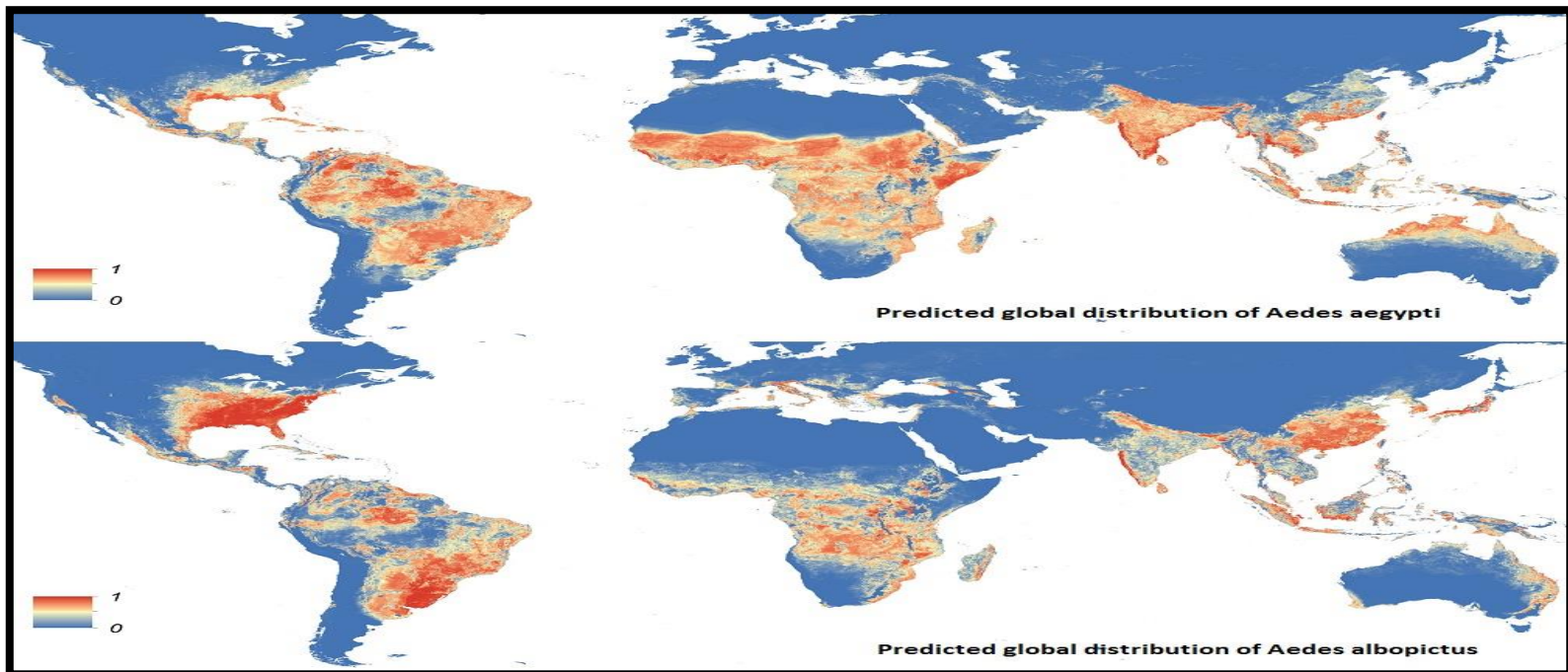
- Spontaneous haemorrhage (skin but also organs)
 - Can result in dengue shock syndrome
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- Pathogenesis:
 - Antibody dependent enhancement:
 - Cross-reactive antibodies against other dengue variants, help dengue virus to enter immune cells (Trojan horse)



Aedes Aegypti & Albopictus



- Bite during daytime (females)
- Most important vector for: dengue virus, chikungunya virus, Zika virus, yellow fever virus



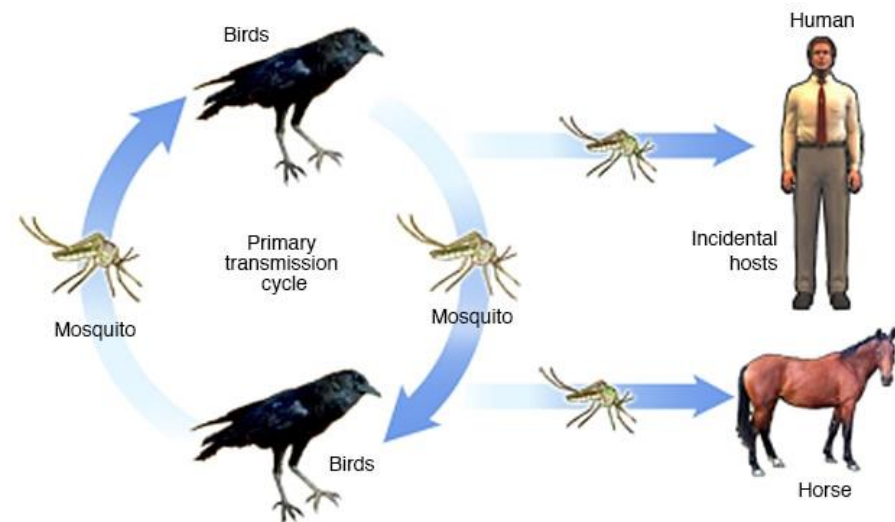
Yellow fever virus

- Flavivirus
- Aedes Aegypti & Albopictus
- Vaccine is available, in some countries mandatory to travel to
- Symptoms (<25%):
 - Fever, myalgia, headache, skin rash
- Severe symptoms (<10%)
 - Hepatitis (jaundice)
 - Spontaneous bleeding
- Mortality +/- 50% when severe disease



West Nile virus

- Transmitted by Culex mosquitos (also present in Europe)
- Can infect the central nervous system (<1% of infections)
- Can infect birds (migration) and horses → surveillance



West Nile virus in Europe

- Increasingly present in Europe (human cases)

