LSUHealthPublic Forum on Zika Virus

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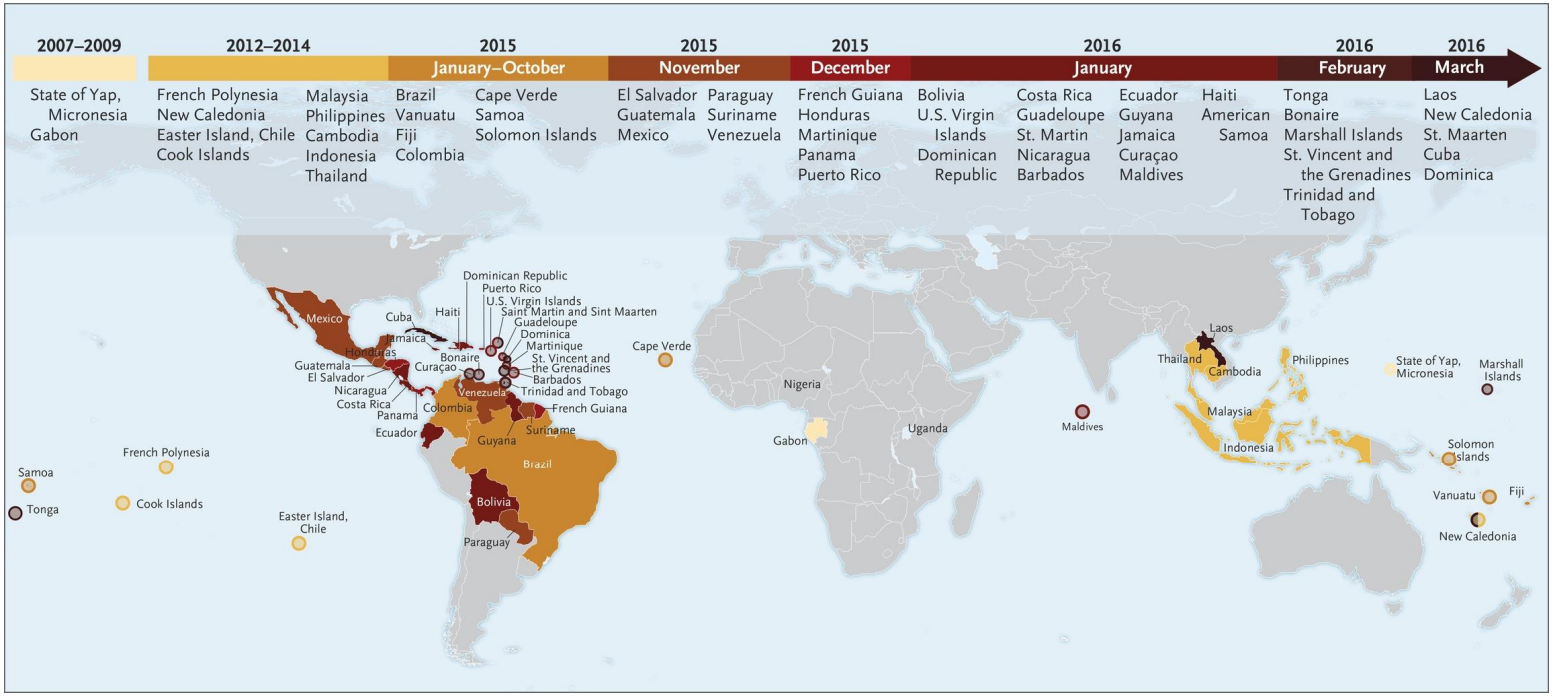
2007–2009
State of Yap, Micronesia
Gabon
2012–2014
French Polynesia
New Caledonia
Easter Island, Chile
Cook Islands
Malaysia
Philippines
Cambodia
Indonesia
Thailand
2015
January–October
Brazil
Vanuatu
Fiji
Colombia
Cape Verde
Samoa
Solomon Islands
2015
November
El Salvador
Guatemala
Mexico
Paraguay
Suriname
Venezuela
2015
December
French Guiana
Honduras
Martinique
Panama
Puerto Rico
2016
January
Bolivia
U.S. Virgin Islands
Dominican Republic
Costa Rica
Guadeloupe
St. Martin
Nicaragua
Barbados
Ecuador
Guyana
Jamaica
Curaçao
Maldives
Haiti
American Samoa
2016
February
Tonga
Bonaire
Marshall Islands
St. Vincent and the Grenadines
Trinidad and Tobago
2016
March
Laos
New Caledonia
St. Maarten
Cuba
Dominica
Dominican Republic
Puerto Rico
U.S. Virgin Islands
Saint Martin and Sint Maarten
Guadeloupe
Dominica
Martinique
St. Vincent and the Grenadines
Barbados
Trinidad and Tobago
French Guiana
Suriname
Mexico
Cuba
Haiti
Jamaica
Honduras
Guatemala
El Salvador
Nicaragua
Costa Rica
Panama
Colombia
Venezuela
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Curaçao
Cape Verde
Nigeria
Gabon
Uganda
Maldives
Laos
Thailand
Cambodia
Philippines
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Indonesia
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Marshall Islands
Solomon Islands
Vanuatu
Fiji
New Caledonia
French Polynesia
Samoa
Tonga
Cook Islands
Easter Island, Chile

Zika Virus Outbreak

- 1 February 2016 – WHO declared Public Health Emergency of International Concern
- Based upon concern that Zika linked to neonatal microcephaly and GBS
- 18 May 2016 – Zika continued transmission in 60 countries/territories
  - 46 countries are experiencing first outbreak since 2015
  - 10 countries reported person-to-person transmission

Neurological Complications of Zika - I

- Congenital Zika Syndrome (microcephaly)
  - Brazil, retrospectively French Polynesia, others (Colombia, etc.)
  - Brain maldevelopment, intracranial calcifications, other brain anomalies.
    - Eye abnormalities, redundant scalp skin arthrogryposis, clubfoot
    - Fetal disruption sequence (microcephaly, overlapping cranial sutures, prominent occipital bone, redundant scalp skin, severe neurologic impairment).


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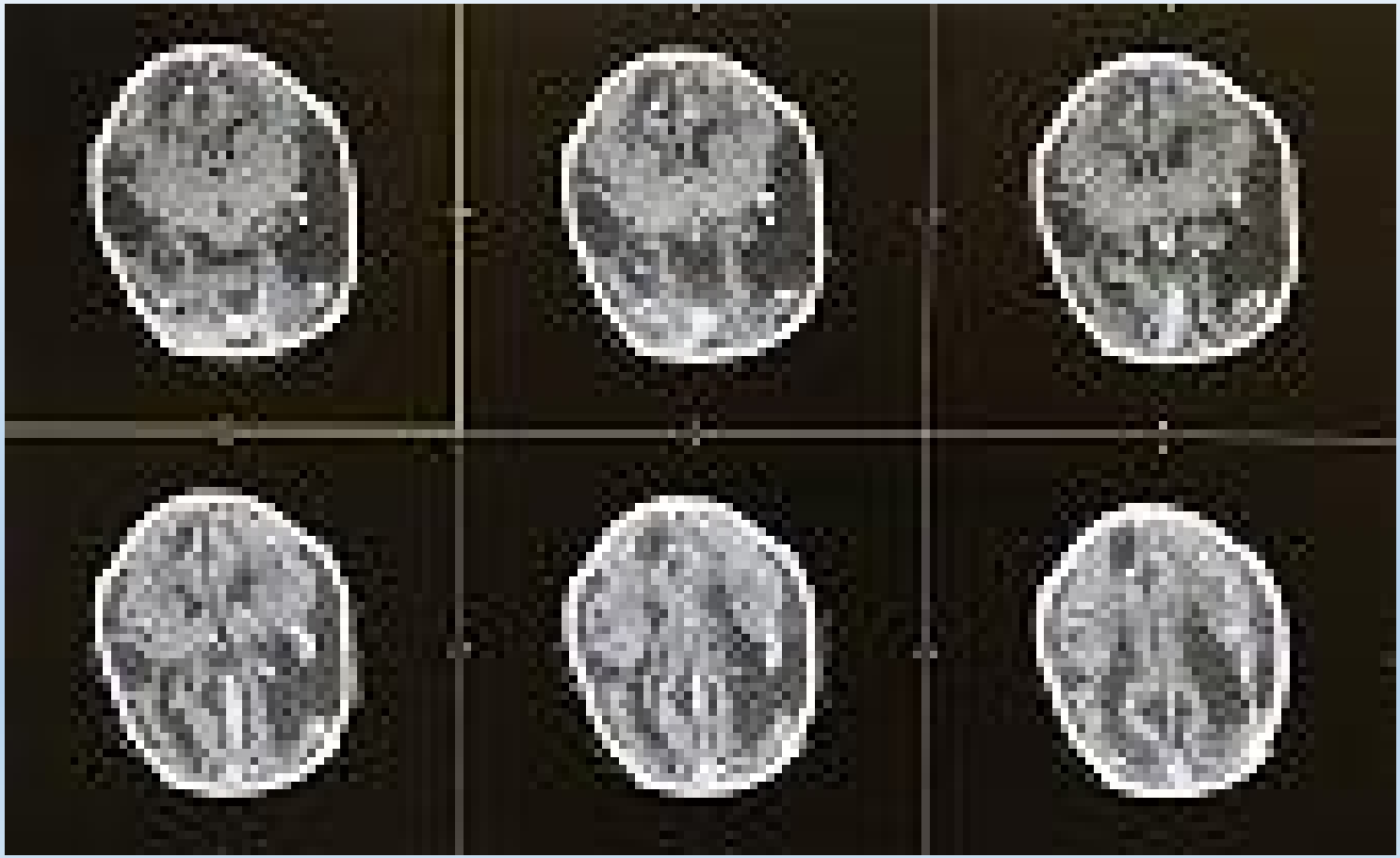
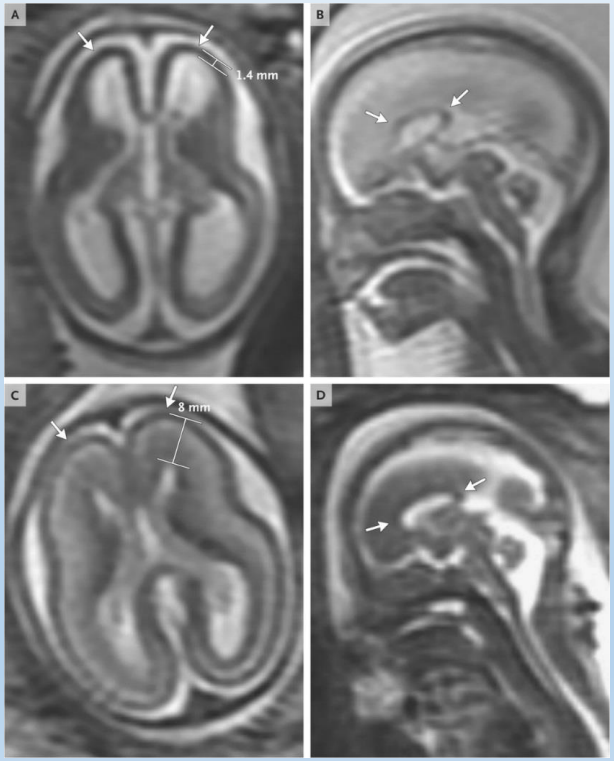
Mario Tama
505771046

Neuroimaging of Congenital Zika Brain



MRI Fetal Brain at 19 Weeks Gestation. Driggers RW, et al. NEJM 30 March 2016



Neurological Complications of Zika - II

- Guillain – Barre Syndrome (GBS) and Others
  - 13 countries and territories have reported increased incidence of GBS as well as myelitis and meningoencephalitis, ADEM (Recife, Brazil)
  - Most GBS appear to be AMAN variety

Diagnostic Tests for Zika - I

- Virus detection by RT-PCR
  - Blood @ one week after symptoms
  - Urine @3 weeks
  - Semen @ several months?

Diagnostic Tests for Zika - II

- Antibody testing
  - IgM as early as 3 days (lasts @ 3 months)
  - IgG from 10 days onward (lasts months to years)
  - Problems with cross reactivity to Dengue; therefore, confirmation by Neutralization Assay necessary
  - Need better validated assays and kits available at point-of-service

Diagnostic Tests for Zika - III

- Current recommendations
  - Early phase: RT-PCR
  - Later phase (2nd week onward): Antibody (esp. IgM)

Therapeutics and Research on Zika Virus

Therapeutics - I

- Pregnant women with Zika
  - Offer ultrasound beginning first trimester
    - Ultrasound better at defining absence rather than presence
    - Non-directive counseling
- Babies with congenital Zika syndrome
  - Supportive and symptomatic care

Therapeutics - II

- GBS
  - Admission to hospital with proactive care
  - ICU for respiratory, bulbar, autonomic complications
  - IVIg or PE when non-ambulatory or progressing

Needs to Combat Zika

- Resources: Financial and health care systems (neurological)
- Surveillance
- Vector (mosquito) control
- Public and health care provider education
- Research
  - Diagnostic tests
  - Vaccine
  - Therapeutics

Vaccine

- None available yet
- Development starting at NIH and private companies

Spraying for Mosquitoes in Honduras

Mosquito Control

- Genetic modification of mosquitoes
- Irradiation of mosquitoes
- Bacterial modification of mosquitoes

Antiviral treatments for Zika

ÅNone available yet


Rio
Carnaval
2016
O MAIOR SHOW DA TERRA
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CHRISTOPHE SIMON
506931512

Helpful Links

- World Health Organization (WHO) www.who.int/
- Pan American Health Organization (PAHO) www.paho.org
- World Federation of Neurology (WFN) www.wfneurology.org
- Centers for Disease Control and Prevention (CDC) www.cdc.gov
- Neurovirus Emerging in the Americas Study (NEAS) www.neasstudy.org/en/home/