Arboviruses:

A Global Public Health Threat

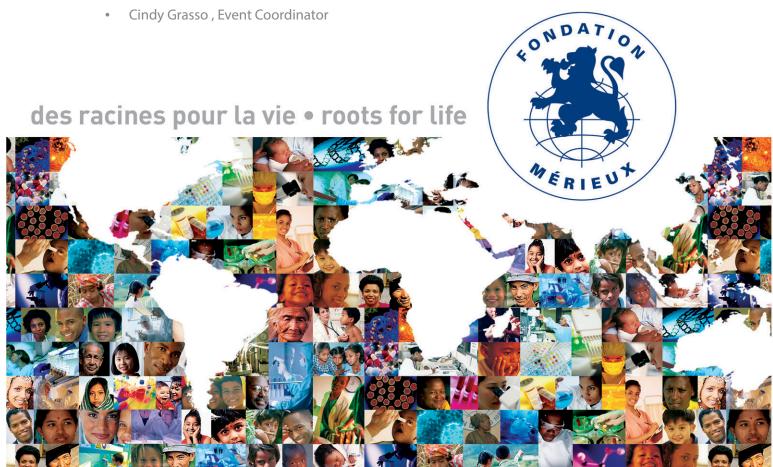
Les Pensières Center for Global Health Veyrier-du-Lac - France

20-22 June 2018

Steering Committee:

- Duane Gubler
- Mauricio Lacerda Nogueira
- Jacques Louis
- Christopher Nelson
- Valentina Picot
- Usa Thisyakorn

In-Kyu Yoon



Background

In retrospect, announcements of a dengue pandemic in the 1990's were a sentinel call to action in the fight against a range of emerging and re-emerging arboviruses.

With the recent outbreak of neurological disorders and neonatal malformations associated with zika virus in Latin America, the yellow fever outbreaks in Angola and Brazil, West Nile Virus in North America, the not-too-distant emergence from sub-Saharan Africa and global spread of chikungunya virus with a relatively recent arrival in the Americas, and the on-going and deepening dengue pandemic in the tropics and especially Asia, arboviruses and specifically flaviviruses are in the news and at the top of social, political and public health agendas.

These events establish an urgency and raise awareness of the need for integrated control and prevention strategies.

These strategies focus on vector control, environmental management, personal protection, social mobilization and political will, case ascertainment and management, surveillance including laboratory confirmation, and vaccination.

It is widely recognized that no single strategy alone can fully address the problem. Timely access to clinical services and appropriate care can reduce mortality dramatically. Vaccines are widely available to protect against japanese encephalitis and yellow fever. The first dengue vaccine was licensed in 2015 and several more candidates are under development. Zika vaccine candidates are in early stages of development and progressing with full support. While diagnostics are available for surveillance and research, recent events have highlighted the need for differential diagnostics, and the need for point-of-care rapid diagnostic tests. Following the application of rigorous evaluations, there is increasing awareness of the efficiency of various prevention strategies against disease. Progress is being made.

Urbanisation, poverty and international trade and travel are widely recognized as contributors to these emerging and re-emerging arboviruses and the diseases they cause. The impact of climate change is also widely touted, although the relationship is complex.

The aim of this meeting is to raise awareness and advance the discussion on these topics.

Scientific programme

Wednesday, June 20th, 2018

| 17:00 - 18:00 | Registration | |
|---------------|--|-------------------|
| 18:00 - 18:20 | Welcome address | Fondation Mérieux |
| 18:20 - 19:00 | Key-note address: Present and future arboviral threats: an overview | Duane Gubler |
| 19:00 | Welcome dinner | |

Thursday, June 21st, 2018

Session 1

| Epidemiology, Diagnostic and Surveillance | | | | |
|---|--|------------------------------|--|--|
| Chair: Usa Thisyakorn | | | | |
| 8:30 - 8:50 | Surveillance for arboviral diseases | Duane Gubler | | |
| 8:50 - 9:05 | Discussion | | | |
| 9:05 - 9:25 | Yellow fever: the current Brazilian outbreak and response | João Bosco Siqueira Jr | | |
| 9:25 - 9:40 | Discussion | | | |
| 9:40 - 10:00 | The interplay between different flaviviruses: overview and results from Brazil | Mauricio Lacerda Nogueira | | |
| 10:00 - 10:15 | Discussion | | | |
| 10:15 - 10:45 | Coffee Break | | | |

Scientific programme

Session 2

| Disease update: emphasis on the exemple of Zika | | |
|---|--|---------------------------|
| Chair: Mauricio La | acerda Nogueira | |
| 10:45 - 11:05 | Zika virus transmission as an endemic disease in Thailand | Rome Buathong |
| 11:05 - 11:20 | Discussion | |
| 11:20 - 11:40 | Evolution of emergence and expansion of Zika virus; difference from Dengue and Chikungunya | Nikos Vasilakis |
| 11:40 - 11:55 | Discussion | |
| 11:55 - 12:15 | The complex relationship between the emerging flaviviruses: Dengue and Zika | Michael Gaunt |
| 12:15 - 12:30 | Discussion | |
| 12:30 - 14:00 | Group Picture and Lunch | |
| 14:00 - 14:20 | Brazilian contributions to the knowledge of Zika virus infection | Patricia Brasil |
| 14:20 - 14:35 | Discussion | |
| 14:35 - 14:55 | Stress-induced unfolded protein response contributes to Zika virus-associated microcephaly | Marc Lecuit |
| 14:55 - 15:10 | Discussion | |
| 15:10 - 15:30 | Progress and hurdles to a safe and effective Zika vaccine | Anna Durbin |
| 15:30 - 15:45 | Discussion | |
| 15:45 - 16:15 | Coffee break | |
| 16:15 - 16:35 | The origins and catalyst for formation of CEPI; CEPI's priorities | George Thiry |
| 16:35 - 16:50 | Discussion | |
| 16:50 - 17:10 | EU-Research Programmes on Zika | Annelies Wilder- Smith |
| 17:10 - 17:25 | Discussion | |
| 19:00 | Dinner | |
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Scientific programme

Friday, June 22nd, 2018

Session 3

| Vectors biology and control | | | | |
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| Chair: Nikos Vasilakis | | | | |
| 8:30 - 9:00 | Overview of Aedes aegypti biology and interactions with dengue and Zika viruses | Louis Lambrechts | | |
| 9:00 - 9:15 | Discussion | | | |
| 9:15 - 9:35 | Wolbachia: how to optimise and sustain its promise of control of Aedes and Aedes-borne viruses | Scott Ritchie | | |
| 9:35 - 9:50 | Discussion | | | |
| 9:50 - 10:20 | Coffee break | | | |

Session 4

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| Dengue Vaccines | | | | |
| Chair: Duane Gubler | | | | |
| 10:20 - 10:40 | Dengue vaccines: status and future | In-Kyu Yoon | | |
| 10:40 - 10:55 | Discussion | | | |
| 10:55 - 11:15 | CYD-TDV - Dengvaxia® - clinical update | Christopher Nelson | | |
| 11:15 - 11:30 | Discussion | | | |
| 11:30 - 11:50 | The first licensed tetravalent dengue vaccine: deliberations on its use | Annelies Wilder- Smith | | |
| 11:50 - 12:05 | Discussion | | | |
| 12:15 - 14:00 | Lunch | | | |
| 14:00 - 14:20 | Dengue diagnostics update: Differential diagnostics for surveillance and research, point-of-care rapid diagnostic tests to support clinical services and screening | Elizabeth Hunsperger | | |
| 14:20 - 14:35 | Discussion | | | |
| 14:35 - 14:45 | Rapid and ultrasensitive detection of pathogens for early and late post-exposure countermeasures | Fransisco Veas | | |
| 14:45 - 14:50 | Discussion | | | |
| 14:50 - 15:00 | Concluding comments | Steering Committee | | |
| 15:00 | End of the meeting | | | |
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