An initiative for rapid research-response to epidemics of emerging infectious disease

Research and ACTion targeting emerging infectious disease

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Time-series in research

Research Preparedness
Research Response
Research begins
Research ends
REACTing: a multidisciplinary network

- Timely initiation of research projects and funding
  - Integrated with existing actors and structures
  - Improve research preparedness
  - Endorsed by Ministry of Research and Ministry of Health
• The **French National Alliance for Life Sciences and Health** (Aviesan) groups together the main stakeholders of life and health sciences in France

• **Aim** : brings together leading scientists involved in the life and health in France

• **REACTing** a network of organization under the umbrella of Aviesan
REACTing

• Not focused on one particular disease
  – Emerging human and zoonotic infections

• Not focused on a particular area of research
  – Surveillance, modelling, economics, communication etc.

• Not focused on northern countries
  – Platforms, surveillance etc. in Southern countries
In the « peacetime »+++: Research preparedness

• Set up a **governance**: reactivity, flexibility
• Preparation of **research tools**
• Identification of research priorities: **likely scenarios of emergence**
• Establishment of **links** between different research entities
• Anticipation of **legal and ethical** issues
• Identification of potential sources of **funds** for research during the crisis
Methodological Centers

- **Methodology Center, Bichat Hospital, Paris**
  - **Pr France MENTRE**
    - Projet Manager: Dr Minerva CERVANTES-GONZALEZ
    - Statistician: Dr Cédric LAOUENAN

- **Methodology Center, Institut Pasteur, Paris**
  - **Pr Arnaud FONTANET**
    - Projet Manager: Dr Isabel PITROU
    - Response Coordinator: Dr Maria Van-Kerkhove
In times of crisis...

• **Define** strategic research priorities
• Improve coordination between participants
• Provide methodological assistance
• Promote international collaborations
• Respond to requests of relevant authorities
• Provide comprehensive information to the public
• Identify additional funding sources
French response to Ebola epidemic: 2014

Definition of French research priorities in July/August 2014

- Diagnostic,
- Treatment
- Vaccine
  (basic science, clinical research, Social and Human sciences)

Funding: seed money from Aviesan and additional funding
From HIV to EBOLA
ANRS Research Sites involved in EBOLA

- Sub-Saharan Africa
  - Cameroon,
  - Burkina Faso,
  - Côte d’Ivoire,
  - Senegal
- South – East Asia
  - Cambodia,
  - Vietnam
- Egypt
- Brazil

Sites
Extra Sites
North Partners

Human and Social Science
JIKI Trial
Cohort of Survivors
EBOVAC 2
About 15 projects evaluated by the Reacting SAB

- Postebogui,
- Activity T-705,
- Jiki,
- JikiMapp,
- Ebovac,
- Ebola France,
- Ebolacure,
- EbeSen,
- Rumeurs,
- Reservoir,
- Convalescent,
- ContactEbogui
- PREVac.
Partnership for Research on Ebola VACcination (PREVAC)
Objective

- To compare 3 vaccine strategies each with placebo for safety and immunogenicity in adults and children in three countries in West Africa where EVD was active during 2014 and 2015 (Guinée, Liberia, Sierra Leone).
Zika
Research priorities identified by REACTing

• ZIKV natural history
• ZIKV infection in pregnant women and microcephaly

In Nov. 2015, Brazil reported an unusual increase in cases of microcephaly, with a suspected link with Zika infection during pregnancy.

• ZIKV Diagnostic Development

The diagnosis is complicated due to co-circulating viruses and possible/frequent cross-reaction.

Comité de Pilotage Reacting :
14 Sep 2015,
11, 15, 28 Dec 2015,
12, 25 Jan 2016
• Cohort study of arbovirus infections, including Zika virus infection, based on hospital cohort of children and adults with suspected arbovirus infection
  Principal Investigator: Pr. André Cabié
• Observational studies on consequences of Zika virus infection during pregnancy
  (Principal Investigator: Pr. Bruno Hoen )
Pr Xavier de Lamballerie, MD, PhD

Piloté par l’Inserm (Pr Xavier de Lamballerie), le projet s'appuiera sur les équipes de différentes institutions de recherche en France, Inserm, IRD, Institut Pasteur ainsi que sur des équipes internationales, notamment d’Amérique Latine et Européenne (Brésil, Mexique, Colombie, Cuba, Equateur, Allemagne, UK, Pays-Bas, Belgique, Italie, Suisse, Espagne, Portugal, Norvège mais aussi Sénégal, Cambodge). Deux partenaires mexicains sont impliqués, l’Institut National de Santé Publique (INSP) et l'Institut Mexicain de Sécurité Sociale (IMSS).
• Experimental studies on Zika virus neurotropism

• Sexual transmission of Zika virus: longitudinal analysis of genital secretions in Zika infected patients
Data generation/Data sharing

• When identifying research priorities...
  (decision tree)
• When launching projects.....