



Institut Pasteur International Network



A GLOBAL NETWORK DEDICATED TO THE FIGHT AGAINST INFECTIOUS DISEASES

ARBOVIRUSES
CHIKUNGUNYA
DENGUE
EBOLA
FLU
HEPATITIS
HIV
LEISHMANIASIS
MALARIA
RABIES
TUBERCULOSIS
YELLOW FEVER

32 INSTITUTES AROUND THE WORLD **25** COUNTRIES

- ALGERIA
- BELGIUM
- BRAZIL
- BULGARIA
- CAMBODIA
- CAMEROON
- CANADA
- CENTRAL AFRICAN REPUBLIC
- CHINA (SHANGHAI, HONG KONG)
- CÔTE D'IVOIRE
- FRANCE (PARIS, LILLE)
- FRENCH GUIANA
- GREECE
- GUADELOUPE
- IRAN
- ITALY
- KOREA
- LAOS
- MADAGASCAR
- MOROCCO
- NEW CALEDONIA
- NIGER
- ROMANIA
- RUSSIA
- SENEGAL
- TUNISIA
- URUGUAY
- VIETNAM (HANOI, HO CHI MINH CITY, NHA TRANG)

The Institut Pasteur, private non-profit foundation, pursues since 1887 an independent scientific policy to keep pace with the latest developments in biological research. One of its goal is to improve biomedical research and knowledge for a more effective fight against diseases. Particular focus is placed on new research topics, multidisciplinary interactions, and the transfer of scientific discoveries to applications. Thus, the Institut Pasteur is involved in a strong competitive edge in biomedical and biotechnological development and is the heart of the Institut Pasteur International Network.

This unique network brings together 32 research institutes worldwide linked by the same missions and values: improve the health of populations worldwide. The Institut Pasteur International Network has made research one of its priorities to fight infectious diseases and conducts innovative research on major global health challenges. The specificity of this network resides in the sustainability of its structures and the involvement of its researchers. The Institut Pasteur and the International Network have a lot of meaningful exchanges on a variety of transverse topics (host-pathogen interactions, microbiomics and genomics...). Thus, this Network is an unique example of successful international cooperation with cross-disciplinary teams associated in efficient basic research, epidemiological surveillance and field operations.

This network participates to the national surveillance activities with “one health” dimension: for a better prevention, outbreak management and control; strive for innovative and competitive research projects adapted to local needs in an international context; contribute to sustainable local capacity and capability building to control emergence and spread of infectious diseases.



• A CRUCIAL NEED FOR AN INTERNATIONAL NETWORK FIGHTING INFECTIOUS DISEASE THROUGHOUT THE WORLD

The actions of the Institut Pasteur International Network are more specifically dedicated to recurring and new infectious pathologies causing morbidity and mortality among populations and especially in children. Numerous Network's teams dedicate themselves to fight against international health issues (such as HIV/AIDS, tuberculosis and malaria), isolate and identify emerging pathogens, anthropozoonotic and vector-borne disease agents and to further investigate the risk factors associated with these infectious pathologies. Moreover, research is currently being developed on antimicrobial/antiparasitic drug resistance, to better manage curative therapies, as well as on somewhat neglected infectious diseases, such as rabies, arboviruses, viral hepatitis, Ebola virus, MERS-Cov coronavirus, leishmaniasis, Buruli ulcer, etc.).

This strong and lasting commitment to public health improvement, takes place in ever changing environments impacted by population growth, increasing urbanization, economic changes and ecological and political upheavals. In line with the International Health Regulations, the Network has expanded local diagnostic capacity and have set up or extended support to infectious disease surveillance programs. The strength of the Pasteur Network resides in its enduring structure and in the commitment of its researchers. As an example, the international Network's teams were actively involved in dealing with the avian influenza and plague epidemics, enterovirus outbreaks and more recently the serious Ebola outbreak in West Africa. Such mobilization is only possible with the involvement of national and international partners.



• A SPECIAL COMMITMENT IN TACKLING WORLDWIDE EMERGING DISEASES

Fostering the research capacities and capabilities in surveillance, monitoring infectious diseases and implementing need-based research projects represent a priority, especially in high-risk, densely populated regions with yet limited health infrastructures. Indeed, lower access rates to treatment increase health care inequalities for the neediest communities. Such an effective network makes it possible to conduct world-class surveillance and investigation on pandemic and epidemic pathogens at the national and regional levels. Since the Ebola epidemic outbreak in Guinea, several scientists from the Institut Pasteur, as part of their mandate as a WHO Collaborating Centre on arboviruses and viral hemorrhagic fevers, as well as scientists from the Institut Pasteur in Dakar have been offering their support to the Ministry of health in Guinea, the World Health Organization and to the French aid plan.



RIIP's mobilisation towards Ebola outbreak in West Africa

• **March 2014, deployment of laboratory specialists to Guinea:** the Institut Pasteur in Dakar as a WHO Collaborating Center on arboviruses and hemorrhagic fever viruses has been one of the first African laboratories in Guinea to participate to the Ebola outbreak investigation and response

• The Institut Pasteur in Dakar identified the first confirmed case of Ebola fever in Conakry in March, 2014 and deployed 4 senior virologists over the last 5 months

• The Institut Pasteur staff has, locally, trained a team of 10 Guinean technicians in the areas of Ebola diagnostics and patient sampling

• Laboratory experts from Institut Pasteur in Lyon and Paris were sent to support the European mobile laboratory in Guéckedou and the reference laboratory at the Donka hospital in Conakry, Guinea

• The unit of Arboviruses and hemorrhagic fevers of the Institut Pasteur in Dakar has tested samples from suspected cases from different countries in West Africa and provided the laboratory of Institut Pasteur Côte d'Ivoire with reagents

• **August 2014,** together with INSERM and Fondation Merieux, Institut Pasteur will be involved in the deployment of a mobile Biosafety Level 4 laboratory in West Africa specially dedicated to the detection and identification of hemorrhagic fever viruses. The Institut Pasteur experts will be

in charge of the training activities of EU and African dedicated task forces related to this specific laboratory. This project is supported by the European Commission (DevCO)

• Technical support to the Ministry of Health in Guinea following WHO request: a researcher from the Institut Pasteur was sent following a new solicitation from the government of Guinea to advise the Ministry of Health

• Establishment of an Ebola Task Force with experts from Institut Pasteur and the Network is currently dealing with scientific challenges related to the disease

● MISSIONS OF THE NETWORK

RESEARCH ACTIVITIES:

- ... Strive for innovative and competitive research projects that are adapted to local needs in an international context
- ... Study of mechanisms, immune response and treatment strategy against infectious diseases
- ... Providing fundamental technologies and tools to bridge the gap between academia and industry in drug discovery committed to the development of new therapies for infectious and chronic diseases

- ... Creating enabling technologies to facilitate next generation drug discovery approaches

PUBLIC HEALTH ACTIVITIES:

- ... Participate to the national surveillance activities with “one health” dimension for a better prevention, outbreak management and control
- ... Contribute to sustainable local capacity and capability building to control emergence and spread of infectious diseases

TEACHING & TRAINING ACTIVITIES:

- ... They also enable technology transfer and the implementation of leading-edge biological methods in environments which would otherwise be unable to have access to such developments
- ... Strengthen human resources
- ... The training programs are developed for researchers, technicians and students in partnership with local universities and institutions. These programs contribute to strengthening professional profiles and capacities



● KEY ACTIONS

RESEARCH, PUBLIC HEALTH AND TRAINING ACTIVITIES FOCUS ON:

- ... Major infectious diseases (HIV/AIDS, tuberculosis, influenza, malaria, hepatitis)
- ... Emerging diseases (HFD, dengue fever, Chikungunya, encephalitis, hemorrhagic fever, hand foot and mouth disease)
- ... Neglected diseases (diarrhea, leptospirosis, rabies, plague, scrub typhus, leishmaniasis, etc.)
- ... Development of new therapies for infectious and chronic diseases, such as tuberculosis, hepatitis, influenza and cancer
- ... Surveillance and outbreaks intervention
- ... Surveillance and research on drug resistance
- ... Development of innovative approaches to diagnosis, prevention and therapies
- ... Courses and workshops promote information, technology transfer and implementation of basic and cutting-edge biological methods in environments that would otherwise be unable to access such technologies.

● FLAGSHIP PROJECTS

THE “MALNUTRITION AND INFECTIONS CHILDHOOD IN AFRICA”

– **FSP MALINEA PROJECT**, funded by the French Ministry of Foreign Affairs and International Development, in collaboration with the NGOs Action Contre la Faim and GRET (Professionals for Fair Development), aims to evaluate interactions between malnutrition, immunity and modification of the intestinal microbiome, and to define new strategies of renutrition in order to improve the quality of care of malnourished children in Madagascar, Niger, Senegal and Central African Republic.

THE “SOUTHEAST ASIA ENCEPHALITIS” (SEAE) PROGRAM: IMPROVED MANAGEMENT OF INFECTIOUS ENCEPHALITIS IN SOUTHEAST ASIA.

This inter-organizational and multidisciplinary consortium, co-funded by the Total Foundation, associates national health authorities from currently six Southeast Asian countries, local major university and national hospitals with key French stakeholders in life and health sciences working with UK collaborative institutes. The SEAE program aims to produce comparable clinical, epidemiological and etiological data on encephalitis/meningo-encephalitis with the objective of informing interventions to reduce the morbidity and mortality by improving prevention, diagnosis and treatment.

ECOMORE PROJECT “ECONOMIC DEVELOPMENT, ECOSYSTEM MODIFICATIONS, AND EMERGING INFECTIOUS DISEASES RISK EVALUATION” (ECOMORE)

program, funded by the Agence Française de Développement (AFD), deals with economic development and impact of environmental modifications on human health in Cambodia, Lao PDR, Vietnam and Myanmar. The core of this project is to: (i) better understand anthropogenic ecological changes responsible for the emergence of infectious diseases, and (ii) measure the health risks for local communities as a result of improvement of surveillance systems and strengthening of national and regional cooperation.

EUWAM-LAB PROJECT EU-funded project which purpose is the establishment of a biosafety level 4 mobile laboratory for in situ interventions on viral hemorrhagic fever outbreaks, in Western Africa funded by EU/DEVCO.

CHARLI PROJECT “CHILDREN’S ANTIBIOTIC RESISTANT INFECTIONS IN LOW-INCOME COUNTRIES”

is an international cohort study. The main objective of the ChARLI project is to assess the incidence as well as the medical and economic consequences of severe childhood and neonatal infections caused by antibiotic resistant bacteria. The investigation will include both healthcare associated, as well as community acquired infections.

A CONSORTIUM FOR OPERATIONAL RESEARCH ON MALARIA IN THE NETWORK

to understand the persistence of malaria despite implementation of effective control measures. The resistance of *P. falciparum* to artemisinin and partner drugs, the change of behavior of vectors and their decreasing susceptibility to insecticides, the dynamic changes of malaria immunity in human populations, and the lack of compliance to control measures are critical issues addressed by the Consortium.

THE MEDILABSECURE PROJECT (DEVCO 2014-2017) aims at consolidating network of laboratories on emerging viruses that are pathogens for humans and/or animals. It encompasses 19 non-EU countries from around the Mediterranean and Black Sea Regions.



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