

Institute Pasteur of Madagascar (IPM)

Established in 1898 and governed by the 1961 and activities extend to Madagascar and countries around the Indian Ocean.

Led by [Professor Christophe Rogier](#) since 2011.

9 Centres & reference laboratories:

- WHO Collaborating Centre for the **plague**;
- National Centre (CNR) for the WHO **Influenza** Reference;
- NRL WHO for **polio**;
- National Reference Laboratory (NRL) and **Arbovirus hemorrhagic** fever virus responsible;
- CNR for Vibrio **cholerae**, **Salmonella** and **Shigella**;
- NRL **mycobacteria**;
- NRL water analysis in **food industry** and control of animal foodstuffs or animal;
- NRL for **rabies**;
- Central Laboratory of **bilharzia**.

RESEARCH UNITS

1- EXPERIMENTAL BACTERIOLOGY UNIT-[Dr. Jean-Marc COLLARD](#), Head of Unit

Research on the resistance of **bacteria to antibiotics** and their mechanisms, and on the **diagnosis** and **molecular epidemiology** of environmental bacteria and neglected disease agents such as **leptospirosis** and **melioidosis**.

1. **Emergence of antibiotic resistance** in hospitals and community sector with a focus on **Enterobacteriaceae** expressing beta-lactamase extended spectrum and the mother - child transmission.
2. the development of **rapid diagnostic** technology based on **LAMP**
3. the effect of malnutrition and the Pediatric Environmental enteropathy (EEP) on the composition of the microbiota

International Collaborations

- Pasteur Institute in **Paris**
 - Pharmacology Unit and Infectious Diseases
 - Molecular Microbial Pathogenesis Unit
 - Platform Genotyping of Pathogens and Public Health
 - Cell Biological Emergency Intervention (CIBU)
- ✓ **International course of medical bacteriology**, which was held from November 17 to 28, 2014 at the Institute Pasteur de Madagascar (IPM), in Antananarivo.

Projects:

1. Study of **genetic environments** gram negative bacteria isolated resistance genes Madagascar
2. Children **Antibiotic Resistance** in Low-Income countries (Charli)
 - International collaborations: Pasteur Institute in **Paris**, Pasteur Institute of **Dakar** Pasteur Institute in **Cambodia**.
3. **Transmission dynamics of multi-resistant** bacteria (BMR) in neonatology
 - International collaborations: Dr. L. Opatowski, Institut Pasteur in **Paris**.
4. Role of intestinal carriage in the global **emergence of multidrug resistant** and hypervirulent *Klebsiella pneumoniae* clones of a population biology approach
 - Collaborations: Pasteur Institutes in **Paris** and from Madagascar, **Cambodia**, **Senegal** and **New Caledonia**.
5. **Rapid diagnostic test** (LAMP) for the detection of **antibiotic resistance**
6. Evaluation of a **molecular test** of isothermal amplification (LAMP) for the rapid diagnosis of bacteremia in children (2015-2017)

2- MEDICAL ENTOMOLOGY UNIT - [Dr. Sebastien Boyer](#), head of the unit: seboyer@pasteur.mg

- identification of **potential vectors** involved in **malaria transmission**, potential vectors of **arboviruses** and followed for a better understanding of **arboviral disease outbreaks** (Fever Rift Valley - RVF, West Nile virus infections),
- Role of **fleas in the plague epidemics**,
- Risk assessment dissemination of **vector-borne diseases** and the study of the interactions between their different actors in their environment to better understand the epidemiology.
- **Surveillance of vectors of arboviruses** (**RVF** infections and **chikungunya**), **malaria** and **plague**,
- Evaluation of the **sensitivity / vector resistance to insecticides** used in control programs.

3- EPIDEMIOLOGY UNIT - [Dr. Patrice Piola](#), head of the unit: ppiola@pasteur.mg

- Conduct of clinical studies on writing study protocols to the **data analysis** and publication of results, on spatiotemporal **modeling** using Geographic Information Systems (**GIS**) applied to health, the **socio-anthropological analysis** of health behavior and practices, and **demographic surveillance** in a public observatory in the district of Moramanga.
- **Epidemiological surveillance** including animation sentinel surveillance network for epidemic-prone diseases and participation in outbreak investigations.

4- UNIT OF IMMUNOLOGY OF INFECTIOUS DISEASES - [Dr. Ines-Womas Vigan](#), Head of Unit: ines@pasteur.mg

- **New rapid diagnostic tests** development (TDR) especially for **cysticercosis**.
- The studies on the relationship between **abnormal hemoglobins**
- **Antimalarial resistance**
- Aspects of **environmental pollution** in partnership with the laboratory of food hygiene and environment (LHAE) of IPM
- Studies on **leptospirosis** were also developed in animals
- **R & D project** is underway for the development of a **rapid test** in collaboration with CNR of **Paris**.

5- UNIT HELMINTHS - [Dr. Fabienne Rasoamananjaha](#), Head of Unit: fabienne@pasteur.mg

- **Epidemiological** investigations to know the situation of **schistosomiasis and STH**
- **Monitoring** and evaluation of the mass distribution of drugs against these **parasites** as part of the integrated approach in the fight against **Neglected Tropical Diseases**,
- **Training** of medical school students and science.

6- RESEARCH UNITS ON MALARIA

- **Advise the Ministry of Public Health** on the effectiveness of control tools recommended by the national policy against malaria and malaria endemicity in Madagascar.
- The research topics focuses on **malaria drugs**, their effectiveness and laboratory **diagnosis of malaria** in the broad sense.

7- UNIT MYCOBACTERIA - [Dr. Voahangy Rasolofo](#), Head of Unit: vrasolof@pasteur.mg

- Performs the diagnosis of **tuberculosis reference** for Clinical Biology Center (CBC) National Program against Tuberculosis.
- It also has the TB **drug resistance surveillance** activities for the NTP.
- Performs implementation and evaluation of **new tools for the diagnosis** of tuberculosis and resistance.

8- UNIT PLAGUE - [Dr. Minoarisoa Rajerison](#), Head of Unit: mino@pasteur.mg

- **Central Plague Laboratory** (LCP) of the Ministry of Public Health and production unit of **rapid diagnostic tests** of the plague. The LCP is the **referent national laboratory** for diagnosis of plague in Madagascar and the African region.
- Understanding the **persistence of plague** in Madagascar and particularly **addresses the genetics of the immune response** of rodent reservoirs of disease, genetic features of the pathogen, the determination of **risk factors** and **modeling** of **transmission**.
- The development of **new diagnostic tools**.
- **Consultancies** (Peru, DRC and Tanzania).

9-VIROLOGY UNIT - [Dr. Jean-Michel Heraud](#), Head of Unit: jmheraud@pasteur.mg

- **National Reference Laboratory** (NRL) for the WHO **polio** and **measles**, WHO National **Reference Centre for the Flu** (CNRG), the **NRL for rabies** and the **NRL for arboviruses** and **hemorrhagic** fever viruses, Involved in **monitoring, research** and **training**.

- Surveillance of acute **flaccid paralysis** and **polio** in Madagascar
- **Measles surveillance** in Madagascar
- Surveillance of **influenza** and **respiratory infections** in Madagascar
- Study of the **etiologies** of acute **respiratory infections** in hospital
- Surveillance of **arboviruses** in Madagascar
- Study of **zoonoses** associated with **rodents** and **arboviruses** in Madagascar
- **Rabies surveillance** in Madagascar
- Study of the ecology of **hantavirus** in Madagascar and the Indian Ocean

FOOD LABORATORY HYGIENE AND ENVIRONMENT- [Alexandra Bastaraud](#), Laboratory Director:
 abastaraud@pasteur.mg

- Activities focus on **monitoring the health risks** related to food, water and the environment.
- **National Reference Center** for Salmonella, Shigella and Vibrio cholera.
- first **quality control laboratory** in Madagascar
- Discover also the **epidemiology- Surveillance** Laboratory of shrimp diseases.

THE INTERNATIONAL VACCINATION CENTRE

Center of **vaccination** that provides **consultations** regarding recommended vaccinations Madagascar and required for international travel. It's finally provider in Madagascar products used in allergy.

The CIV includes Anti-rabies treatment center (CTAR) **treat** people exposed to **rabies** and **rabies vaccine** supplies anti all anti rabies treatment centers in Madagascar, at the expense of IPM.