

PERSONAL INFORMATIONS

Feno Manitra Jacob RAKOTOARIMANANA MD, MPH

Date of birth: 13 June 1984

Married

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EXPERIENCES

Present-2014 **Epidemiologist at Epidemiology and Clinical Research Unit of Institut Pasteur de Madagascar**

Principal investigator of research projects:

-“Post-epidemic characterization of humoral and cellular immune responses in pneumonic plague cases during the epidemic in Antananarivo in 2017”

Funding: Wellcome Trust - DFID

-“Post-epidemic evaluation of pneumonic plague during the 2017 epidemic in Antananarivo (Madagascar): provision of serology and risk of side effects of treatment.”

Funding: USAID

-“Determinants of Health care seeking in pregnant women and children under five in 3 supported areas of USAID.”

Funding: USAID

Epidemiological coordinator of research project RESOFEN and RESOFEN-acli (Health care seeking among pregnant women and children under five) - partnership project with Catholic University of Madagascar UCM / Research Institute for the Development IRD/ Institut Pasteur de Madagascar

Funding: IRD - UNICEF

Assistant Coordinator of research program BIRDY (Bacterial Infections and antibiotic Resistant Diseases among Young children in low-Income countries)

Funding: Government of Monaco Principality of Monaco

ACADEMIC GRADUATIONS *(French graduation)*

2017 University Diploma in Methods and practice in Epidemiology
University of Bordeaux II

2013	Master in Public Health (MPH) Master Degree in Tropical Medicine and International Health Institut de la Francophonie pour la Médecine Tropicale in Laos RDP /National University of Laos
2009	Medical Doctorate Degree in Human Medicine (MD) Medicine Faculty of the University of Antananarivo

TRAININGS AND WORKSHOP

2018-June-July	Summer school in public health 2 weeks of classroom training: R software initiation in data analysis and multiples regression in epidemiology (linear, logistic, cox) Medicine faculty of Kremlin Bicêtre, Paris XI
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OTHER SKILLS

Environment: Windows, internet

Current use of Microsoft: Word, Excel, PowerPoint, Picture Manager, Outlook

Specific software: Microsoft ACCESS, Gantt Project, STATA, Reference Manager, MAPINFO, OpenEpi, Epitools, Mendeley, R

SCIENTIFIC PRODUCTION

ARTICLE

Felana Angella Ihantamalala, Vincent Herbreteau, **Feno M.J. Rakotoarimanana**, Jean Marius Rakotondramanga, Simon Cauchemez, Bienvenue Rahoiljaona, Gwenaëlle Pennober, Caroline O. Buckee, Christophe Rogier, C.J.E. Metcalf, Amy Wesolowski. Estimating sources and sinks of malaria parasites in Madagascar. NATURE COMMUNICATIONS | DOI: 10.1038/s41467-018-06290-2

Ihantamalala FA, **Rakotoarimanana Feno MJ**, Ramiadantsoa T, Rakotondramanga JM, Pennober G, Rakotomanana F, Simon Cauchemez, Charlotte J. E. Metcalf, Vincent Herbreteau and Amy Wesolowski. Spatial and temporal dynamics of malaria in Madagascar. Malaria Journal. 2018;17 (1):58. Available from: <https://malariajournal.biomedcentral.com/articles/10.1186/s12936-018-2206-8>

Perlinot Herindrainy, Mamitiana Alain Noah Rabenandrasana, Zafitsara Zo Andrianirina, **Feno Jacob Rakotoarimanana**, Michael Padgett, Agathe de Lauzanne, Awa Ndir, Elsa Kermorvant-Duchemin, Benoit Garin, Patrice Piola, Jean Marc Collard, Didier Guillemot, Bich-Tram Huynh, Elisabeth Delarocque Astagneau, for the BIRDY study group. Acquisition of extended spectrum beta-lactamase-producing enterobacteriaceae in neonates: A community based cohort in Madagascar. PLoS ONE 13(3): e0193325. <https://doi.org/10.1371/journal.pone.0193325>

ABSTRACT OF RESEARCH PROJECT

Maternal and child health remains a major public health issue. Moving from the millennium goals to sustainable development goals, they still remain among public health priority. In Madagascar, the use of maternal and child care services remains low while mortality and morbidity remain high. With USAID support funding, we designed and conducted a study about Maternal and Health Child Health which aimed to identify the main determinants of health care use for women and children under 5 years of age. It was focused on some types of specific care seeking: use of contraceptive methods, antenatal care during pregnancy, the attendance of skilled care during delivery, and the use of care during the neonatal period and use of vaccination for children under five. This research study has had two main components: epidemiology and anthropology of health. The study took place in 3 districts supported by USAID: Manakara, Moramanga and Antsohihy. We randomly selected 40 Fokontany that met the eligibility criteria within districts. For epidemiology, we did an observational study in community with 2 passages. Inclusion criteria were pregnant women from 6 months of pregnancy, inhabitants in the study areas. Inclusion was done exhaustively within selected Fokontany. A stepwise binary logistic regression model was performed for multivariate statistical analysis.

Results: From 40 selected Fokontany, 512 women were included in the first pass and 482 in the second pass. We found a delay in the beginning of Antenatal care (ANC) consultations (2nd and 3rd trimester of pregnancy). Women's favorite places to deliver are at home (67%). Women in Moramanga and Manakara districts give birth less in the presence of skilled health personal than women in Antsohihy ($p < 0,001$). Having at least one ANC session during pregnancy increases ($OR=8,16$) probabilities to give birth in the presence of a skilled health personal. The higher the level of education, the greater the chance of giving birth in the presence of qualified health personnel. Living in a radius more than 5 km from a health center reduces the chances at $OR = 0,46$ times less compared to women who live closer.

Analyses are still in progress.

Statement of interest

October 9th 2018

Dear Cara Brook,

I apply to participate in this course on epidemiology, environment, mathematics and modeling. I am a medical doctor involving at epidemiology and clinical research of the IPM. My field of work revolves around clinical research and public health activities such as epidemic investigations. Knowledge that i may acquire during this training will be of useful to me for my work and future professional career.

Since 2014, i joined the Epidemiology and Clinical Research Unit of the Pasteur Institute of Madagascar. I worked on different themes: bacterial resistance to community-based antibiotics in children under 2 years of age in low-income countries; a multicentric study of which Madagascar was the pilot recruitment site. At the same time i was working on other projects such as the determinants of care seeking for pregnant women and children under 5 years old. And I am currently working on plague surveillance as well as clinical research projects on plague.

I need this training because epidemiology opens increasingly to ecology, various mathematical and geographical models and as a public health doctor, I am convinced that various quantitative approaches are needed to study a given health event of interest. Still novice in the use of R, my knowledge in programming software analysis is limited but I continue to deepen according to the needs of the projects I'm working on.

As the ipm works on different types of infectious diseases, I expect from this training an understanding but especially a know how that would allow me to design and carry out epidemiological research projects by adding ecological analyzes. I admit that I have a fondness for ecology because it is very little developed in our research unit while it is a fashionable discipline in quantitative research. I want to bring a little more in our research projects. Eventually, I plan to do a thesis in science on plague disease using ecological models.

Hoping that my application retains your attention

My cordial greetings,