

Report on the mission to Kilifi HDSS

Participants:

- Rila RATOVOSON : in charge of Moramanga HDSS: Moramanga Health survey in Urban and Rural Areas in Madagascar: MHURAM, Epidemiology and Clinical Research unit, Institut Pasteur de Madagascar
- Reziky MANGAHASIMBOLA : Data manager of the Epidemiology and Clinical Research unit, Institut Pasteur de Madagascar

Period of the mission: April 8th – 20th, 2019

Mission objective: to share experience and works with the KEMRI - Wellcome Trust on HDSS tools for public health

Context: Mission proposed by Trudie Lang after the visit of the University of Oxford for a workshop on clinical research in July 2018. This activity is part of the ALERRT/EDCTP project – WP on capacity building.

People met during the mission:

- Anthony Scott: PI of Kilifi Health and Demographic Surveillance System
- Amek Nyaguara: Head of Kilifi HDSS
- Christopher Nyundo: Cartographer of Kilifi HDSS
- Georges Mochamah: clinician in charge of Kilifi HDSS's verbal autopsy
- David Walumbe: Field Manager of Kilifi HDSS
- Mark Otiende: Statistician of KHDSS
- Community engagement platform / School engagement
- Data manager and ICT developer
- Data supervisors, field supervisors
- Fieldworkers

- Pediatrician at Pediatric ward
- Clinician at Maternity ward

Context: The Kilifi Health and Demographic Surveillance System (KHDSS) was established in 2000 by Kenya Medical Research Institute (KEMRI), the Wellcome Trust and the University of Oxford. Data collected are: births, pregnancies, migration events and deaths. It is maintained by 3-monthly household visits. The study area was selected to capture the majority of patients admitted to Kilifi District Hospital.

At the time of our mission, the population was enumerated 45 times, and the KHDSS team was preparing the 46th enumeration. The KHDSS has around 290,000 residents enumerated by 36 fieldworkers. In addition, 20 other people in different well-defined professions are involved in the HDSS.

Main points identified during the mission

- KHDSS (surveillance platform = Epidemiology and Demography Department) is closely linked to other KEMRI platforms (Laboratory platform= Bioscience Department, Clinical platform = Clinical Research Department, Community engagement platform= Health Systems and Research Ethics Department)
- The database of KHDSS is able to match of patients (maternity, pediatrics, adult wards) in Kilifi District Hospital to the population register in real time.

- Immunization of children at the vaccine clinics, are also used to link with the population register data.
- Close collaboration between KEMRI and the Ministry of Health facilitates the smooth conduct of all investigations: very few refusals, community approval to record their Number Identity Card to facilitate identification.
- All clinical researches, community surveys are based on HDSS data
- **Moramanga has all the variables required for an HDSS but a restructuration of the database is necessary → the possibility of inviting a KHDSS data manager is to be considered (if ALERRT could finance this mission – To be discussed with Trudie Lang)**
- For the MUHRAM project, the collaboration with the Moramanga Hospital (reinforced by the presence of the IPM in the laboratory) and with the primary health centers in the study area, the Moramanga HDSS could be like the KHDSS if all the stakeholders value this platform
- Possibility of collaboration between KHDSS and MHURAM about Pneumococcal vaccine project (Laurence Baril to discuss with Anthony Scott)

Conduct of the mission:

April 8th: Departure from Antananarivo, arrival to Kilifi

April 9th: Meeting with surveillance platform: Epidemiology and Demography Department:

- Attend the bi-weekly meeting of KEMRI team from the hospital (pediatricians, clinicians, nurse) and the field (supervisors, data manager, responsible HDSS)
- Presentation of KEMRI and KHDSS
- Presentation of Moramanga HDSS : MHURAM
- Presentation of data collection procedures by KHDSS team: preparation of an enumeration, management of migration data, process of verbal autopsy data collection, Kilifi HDSS database management process
- Visit of the KHDSS offices



Photo 1. KHDSS office

April 10th: Field visit to observe data collection (census and verbal autopsy)

Back to KEMRI site:

- Working meeting on the process for managing inconsistencies, duplicates



Photo 2: Fieldworker linking a child's immunization data from the health booklet after enumeration of household

April 11th: Debriefing at the end of 45th enumeration. Meeting between all the investigation team: supervisors (fields, data), managers (Field Manager, Data Manager, head of HDSS)

Challenges faced by the team during the 45th enumeration: Field/Data collection, logistics, managerial/human resources, others...

Feedback on data collected during the 45th enumeration

Meeting with the statistician: presentation of the KHDSS Profile



Photo 3: Briefing with all KHDSS team for feedback of the 45th enumeration

April 12th: Presentation of the research projects that will start soon in KHDSS area:

- Malaria : 1000 genomes project
- Vaccine: KEIR
- Use of bednet in the households

Presentation of the KHDSS database architecture and link to clinical study databases

April 15th: Meeting with the cartographer team: mapping management

Visit of Pediatric ward: Searching data from hospitalized children in the HDSS database
Presentation of the data collected at the pediatric ward

April 16th: Attend the consent and communication Refresher Training

Visit of the Maternity ward: presentation of data collected at the hospital

Meeting on Quality Control issue with the responsible of KHDSS, Data Base Administrator, and data manager team

April 17th: Meeting with the clinician in charge of managing verbal autopsy

Continuation of the data cleaning on Quality Control issue with the responsible of KHDSS, Data Base Administrator, and data manager team

Meeting with the PI of HDSS: Possibility to collaborate with MHURAM on pneumococcal vaccine projects

Meeting with the Community Liaison Officer in relation with the HDSS team in the field

April 18th: Meeting with the Community Engagement Platform: A representative of each community (about 300 people) elected by the villagers visits KEMRI to explain the research carried out in the Institute



Photo 4. Visit of KEMRI by community representative (source: <https://kemri-wellcome.org/>)

Presentation of the school engagement: Introduce research to high school students in colleges in the HDSS area (Researcher → High school in KHDSS area); the 9 best high school students are invited to KEMRI for 3 months.



Photo 5. Visit of researcher to explain research in school (source: <https://kemri-wellcome.org/>)

Meeting about KHDSS enumeration round average cost: each round costs around 190,000 \$.

April 19th: Good Friday

April 20th: Departure from Kilifi, arrival to Antananarivo

Conclusion:

Kilifi, with almost 20 years of experience in surveillance, is one of the largest HDSS in the world. By this exchange, it was possible to note that, if a good collaboration between all the stakeholders (IPM with all the research units involved in Moramanga, the personnel directly involved in HDSS, Ministry of Public Health) is developed, MHURAM could be a good platform not only for clinical research but also for the development of the Moramanga community.



Photo 6. Fieldworkers of KHDSS on their workspace at KEMRI