

Institution: Instituto Nacional de Saúde (INS)
[National Institute of Health Mozambique]
Maputo, Mozambique

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LAB RESOURCES

Please describe the laboratory facilities available in your research institute, including the items listed below (if applicable):

Lab space and equipment (general):

The INS Lab is divided into 7 dedicated labs: Cellular Immunology; Serology; Molecular Biology; Virology; Microbiology; Parasitology; TB and Entomology Labs. Each of them is located in a distinctive space. In general, the equipment available is described below:

- BD FACSCalibur; BD FACSCanto; BD FACSCount; Elispot Reader; CO2 Incubators; NucleoCounter
- ELISA Reader; ELISA Plate Washer
- Thermocyclers; TaqMan (Roche); Ampliprep (Roche); TruGene Sequencer (Siemens); gel electrophoresis system; gel digital documentation system
- Fluorescence microscope; MagPix platform (Luminex); Real time PCR system (ABI); + (Bio-Rad)
- Standard microscopes; spectrophotometer; pH reader; colony counting meter
- Biosafety cabinet class II; -20 and -80 freezers
- TB Liquid Culture System (MIGT, BD)

BSL-2 lab space and equipment:

All Labs are class II.

BSL-3 lab space and equipment:

Not available

Flow cytometry equipment:

BD FACSCalibur; FACSCanto; Count

Please list the research groups in your institute, including the size and areas of expertise for each group:

The INS has several projects. The major ones are described below:

- Continued analysis of the determinants of health, situation and health systems in Mozambique



- Setting up a unit for the analysis of the information generated by the national epidemiological surveillance system.
- Structuring and management of hierarchical network of laboratories for health surveillance
- Investigation and control of outbreaks and health emergencies
- Structuring of sentinel sites for the etiological surveillance of clinical syndromes
- Incorporation of traditional and cultural practices to the health alert system
- Organizing and maintaining a repository of biological heritage
- Creation and development of a national health library
- Qualifications of professionals working in public health laboratory network
- Development of a training program (continuing education) for professionals working at the national health services
- Strengthening of post-graduate programs at masters and doctoral level
- Establishment of a national quality management program for the laboratories
- Management of strategic policies to support equitable access to health services
- Promotion and coordination of the national health research program
- Research technology assessment, food safety, clinical research, vulnerable populations, among others
- Technical cooperation with universities for training at post-graduate level and research
- Development of joint epidemiological and clinical research with hospitals at the country level.

BIOLOGICAL SPECIMEN REPOSITORY

Please describe the biological specimens stored at your institute:

- Plasma
 - Dried Blood Spots
- [No formal regulations on specimen repository have been adopted in Mozambique.]

Does your institute have a database of stored samples: Yes

Please provide details on methods for biological specimen storage at your institute (e.g., are Standardized Operating Procedures used?):

Samples are stored in -20°C and -70°C freezers according to a specific SOP.
Samples are also stored for a short period in fridges (2-8°C).

Please describe the equipment/facilities available for sample storage at your institute, including the items listed below (if applicable):

-80C freezers: Available

Nitrogen storage tanks: Available

Dry ice availability: Not available at the lab. Local companies support the labs whenever is necessary.

Use of a nitrogen generator: There are 2 local companies that provide liquid nitrogen to INS. We do not have a nitrogen generator.

Other: -20°C freezers
Samples are stored in each Lab at appropriate conditions.

TRAINING AND EDUCATION

Please describe the training initiatives your institution has in place for individuals prior to working in clinical studies?

- GCP Course
- Biosafety Training
- Research Methodology Training

Please describe the training initiatives your institution has in place for individuals prior to working in the laboratory?

- GCLP Course
- Biosafety Training
- Quality Management Training
- If working with specific techniques: specific training on how to perform the techniques
- Research Methodology Training

What assays/techniques do you excel in at your institute?

- PCR for HIV-1
- HIV and HBV Viral Load
- ELISA for HIV, measles and rubella
- Western blot
- Flow cytometry techniques
- Diagnosis of H1N1 and other respiratory virus infection using real-time PCR
- Interferon Gama Elispot
- HTLV PCR
- TB culture
- PCR for mosquito species identification

What training could you provide to visiting scientists?

Training on any laboratory technique used at our institute.

What rank are the majority of your trainees? (e.g., approximate numbers of undergraduate students, Masters, PhD, post-doc, MDs)

- Undergraduate students (15), Masters (15)

Does your institute receive funds to support training initiatives? Yes

Please provide details about the funds your institute receive to support training initiatives.

- Fiocruz/Brazil
- CDC/USA
- PEPFAR
- Ministry Science and Technology/Mozambique
- WHO

Does your institution send trainees abroad for additional training? Yes

Please indicate the number of trainees sent abroad per year, the source of funding, the location of training, and the type of training received.

- General lab training – Brazil – 6 trainees – PEPFAR through Fundação Universitária José Bonifácio (FUSB)
- General lab training – Republic of South Africa – 4 trainees– PEPFAR through APHL
- Masters – Brazil – 6 trainees – Mozambican Government and Brazilian Government
- PhD – Brazil – 3 trainees – Mozambican Government and Brazilian Government
- PhD – Sweden – 3 trainees - Sida
- Immunology Lab – Sweden – 2 trainees – Sida and EDCTP

What Masters and/or Doctoral programs does your institution offer?

- Masters in Health Sciences, jointly with Fiocruz/Brazil
- Masters in Field Epidemiology and Laboratory (FELTP), jointly with Eduardo Mondlane University; Mozambique and CDC/USA

COLLABORATIONS

Please list and briefly describe your current collaborations with any African institutions, for either research or training purposes.

- NICD – training in the field of laboratory
- MUHAS – HIV vaccine research
- WITS University – research on HIV disease monitoring

Please list your institution's plans for future collaborations within Africa (additional groups, sites, countries, etc.)

- Mbeya – HIV vaccine research

Please list and briefly describe your institution's collaborations and/or partnerships with entities outside of Africa (e.g., organizations and networks in

the USA, Europe, etc. – including CFARs, NIH clinical trials networks, HPTN, HVTN, AMC, IeDEA, USAID, PEPFAR, etc.

- Fiocruz – partnership around the implementation and monitoring of INS strategic plan; research; masters course in Mozambique; masters students in Brazil; collaboration on information and communication in health
- Swedish Institute for Communicable Disease Control (SMI) and Karolinska Institutet (KI) – HIV vaccine research and training at MSc/PhD levels
- PEPFAR –general training; masters training for FELTP; reference laboratory services; surveillance
- WRAIR/MHRP – HIV Vaccine research
- Universidade Federal do Rio de Janeiro (UFRJ) – research on viral diseases and trainings at MSc/PhD level
- Instituto de Higiene e Medicina Tropical (Portugal) – research and training in malaria

CLINICAL COHORTS

Please describe each existing clinical cohort that you have access to, including specifics like “HIV-TB infected HAART naïve adults”, sample size, sample type, sex, age, and whether clinical samples are currently being collected and/or stored (specify which samples).

- Cohort of youths from the HIV incidence study; youths from 18-24 years old; both gender, DBS, plasma and Urethral/vaginal swabs samples stored at INS. Still collecting samples.
- Cohort of HIV-TB co-infected patients in treatment with NVP vs EFV. Sample size= 500, Adults, both gender; plasma samples stored at INS; an extension of the trial is now ongoing with samples being collected.

Please describe the clinical cohorts that you are planning to establish, including specifics such as “HIV-TB infected HAART naïve adults”, sample type, sex, and age.

- Cohort of HIV infected patients, HAART naïve, both gender, with a minimum of 18 years old, N=1000.

DATA MANAGEMENT

Please describe the DATA MANAGEMENT FACILITIES available in your research institute, including the items listed below (if applicable):

Data management expertise, including staff complement (general):

- Data manager is recruited per project

On-site database design, implementation and trouble-shooting:

- Not available

Details of off-site support (by whom):

- Available per project

Other:

- Data entry room is available at INS; the aim is to have one data entry for all INS.

BIOSTATISTICAL SUPPORT

Please describe the BIostatistical support available in your research institute, including the items listed below (if applicable):

Biostatistical expertise, including staff complement/composition of PhD and Masters level biostatisticians:

- Not available

Specific areas of biostatistical expertise/excellence:

- Not available

Details of off-site support (by whom):

- Available per project