



**INSTITUTE OF HUMAN  
VIROLOGY, NIGERIA**

### Activities of the Biotech Lab:

We select, install, calibrate, certify, repair, and maintain laboratory equipment for optimum results in health facilities supported by IHVN across the country and IHVN campus.

- 1 Design, certification and maintenance of Biosafety Laboratory Level 1,2&3
- 2 Laboratory equipment installation and maintenance
- 3 Certification of Biosafety Cabinet
- 4 Laboratory equipment calibration (Volume, Mass, Temperature, Speed & Time)
- 5 Train users and technicians on the proper use and maintenance of laboratory equipment.
- 6 Maintenance of Liquid Nitrogen plant

### Activities of the Clinical Pathology Unit:

The Clinical Pathology is equipped with the capacity to carry out:

1. DNA extraction from blood samples using Paxgene and Gentra purgene methods
2. DNA extraction from saliva samples using Novogene kit
3. Quality Control of extracted DNA samples
4. Tissue processing using ATP
5. Histological analysis using H&E techniques
6. Immunohistochemistry analysis on tissue samples
7. Genexpert assays on breast and HVS samples
8. Grundium Ocus scanning of tissue slides
9. Counselling training for return of results
10. Separation, aliquoting of blood components, and storage in the biorepository for future analysis

### Activities of the Genomics Lab:

In the Genomics lab, we engage in a variety of advanced molecular biology techniques which include:

1. DNA and RNA extraction (manual and automated)
2. Conventional and Real-Time PCR
3. Manual and automated gel electrophoresis
4. Gene sequencing (Sanger and Next-Generation Sequencing- NextSeq 500 series)
5. HIV and TB drug resistance testing
6. Other Genomics tests
7. Bioinformatics

## Activities of the Quality Assurance Lab:

1. Conducted Needs Assessment and Biosafety/Biosecurity Assessment of National reference laboratories and surveillance/sentinel sites for AMR
2. Developed Capacity Strengthening Plans (CSPs) for 9 Surveillance Site Laboratories supporting AMR for Human Health and submitted reports
3. Renovated Surveillance sites
4. Conducted First Biannual Equipment Maintenance and Calibration and Certification of Biosafety Cabinets at 2 NRLs and 9 Surveillance Sites supporting Human Health
5. Developed End-user equipment maintenance protocol
6. Conducted feasibility Assessment on AMR surveillance capabilities for state and local laboratories in 12 states
  - Four states assessed through physical visits to the states and LGAs
  - Eight states assessed through virtual meetings
7. Conducted virtual training on Biosafety and Biosecurity for 60 staff at laboratory facilities supporting AMR
8. Developed Draft Policy to guide operations and procedures at the biorepositories for archiving bacterial isolates for AMR
  - Freezerworks Software for the management of samples in the Biorepositories has been selected, approved, and being procured
9. Identifying an appropriate External Quality Assessment provider (UK NEQAS) for NRLs and Surveillance facilities for both Human Health and Animal Health. Provided EQA for 11 Human Health sites and 8 Animal Health laboratories through OASYS

## Activities of the Genomics Lab:

1. Developing and reviewing laboratory safety SOPs, ensuring alignment with ISO standards and relevant international/national guidelines.
2. Conducting capacity-building initiatives and providing mentorship on biosafety, biosecurity, waste management, and infection prevention and control (IPC) practices for organization staff.
3. Procuring essential safety supplies to equip laboratories with the necessary protective equipment and materials.
4. Aligning the Standard Operating Procedures (SOPs) Manual with ISO standards to ensure best practices are followed and regularly updated.
5. Conducting annual audits to assess overall compliance with safety regulations and identify areas for improvement.
6. Tracking waste volume to ensure proper disposal and minimize hazards.
7. Providing supportive supervisory visits and monitoring to foster a culture of safety and address concerns or questions from laboratory staff.