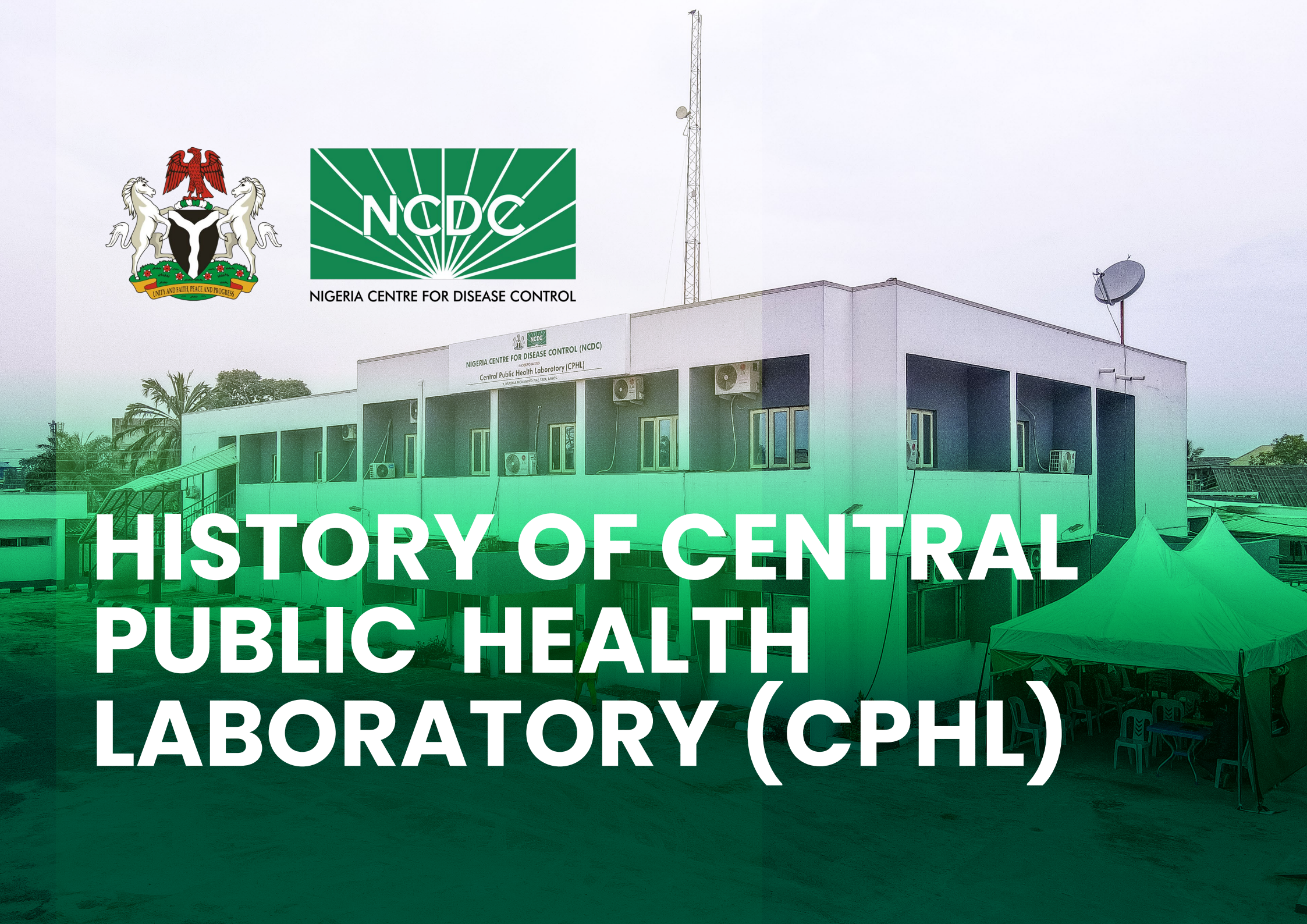




NIGERIA CENTRE FOR DISEASE CONTROL

HISTORY OF CENTRAL PUBLIC HEALTH LABORATORY (CPHL)



Nigeria's Public Health Legacies: Central Public Health Laboratory (CPHL)

The Central Public Health Laboratory (CPHL) in Yaba, Lagos is one of Nigeria's oldest public health facilities. The laboratory evolved from the Federal Laboratory Services which was first established in 1937. CPHL now operates as a campus of NCDC National Reference Laboratory.

This document describes the history of the Central Public Health Laboratory as part of efforts by the Nigeria Centre for Disease Control (NCDC) to preserve and share Nigeria's public health history.



H. Sanya Freeman, Photograph



Pre - 1976

The Federal Laboratory Services was established in 1937 with the headquarters located at Broad Street in Lagos Island. It provided bacteriology, chemical pathology, and hematology services as well as post-mortem services.

The bacteriology section of the laboratory which focused mainly on tuberculosis diagnosis, was within the Medical Compound in Yaba, Lagos State. The medical compound was a convergence of several public health facilities including:

- Vaccine Production (Yellow fever, Smallpox and Rabies) Laboratory (now defunct)
- Central Medical Library (outdated)
- Federal School of Medical Laboratory Technology, Lagos (now located in Jos, Plateau State)
- Drug Manufacturing Laboratory (now defunct)
- Medical Research Council (now Nigerian Institute of Medical Research (NIMR))



Federal Tuberculosis Laboratory

In 1976, following the creation of Lagos State, the State Government took ownership of the building where the Federal Laboratory Services was located. However, the medical compound in Yaba remained a Federal Government entity.

The bacteriology laboratory which was now named the Federal Tuberculosis (TB) Laboratory, Yaba, continued to provide laboratory support for TB control services. It also served as a training facility for medical students to learn about the laboratory response to tuberculosis and leprosy control. The services in the laboratory were further expanded to include:

- Laboratory screening for pre-service medical examination which was compulsory and free for all new entrants into the Federal Civil Service
- Screening of food handlers especially in major food processing companies
- Training of laboratory personnel as an approved centre for training Medical Laboratory Technicians as well as students from polytechnics, colleges and universities
- Diagnosis of other diseases of public health importance e.g. malaria, cholera, dysentery etc.



The formation of CPHL

In 1986, the Federal Government introduced a new focus on Primary Health Care Services. As part of this, a bigger laboratory was constructed with the objectives of establishing public health laboratory standards, providing guidance for public health laboratory services, and supporting the diagnosis of epidemic prone diseases. At the time, most states in Nigeria did not have functional public health laboratories and depended largely on the Federal Government.

In 1989, the Federal Government renamed the Federal Laboratory Services to Central Public Health Laboratory (CPHL). A new building was constructed within the Medical Compound, which serves as its location till date. This was led by the Federal Ministry of Health with support from the United Nations Children's Fund (UNICEF), United States Agency for International Development (USAID), Combatting Childhood Communicable Diseases (CCCD) project and World Health Organization (WHO), among others.

The Central Public Health Laboratory (CPHL) was commissioned by the then Honourable Minister of Health, Late Professor Olikoye Ransome-Kuti on the 3rd of November 1989.



Developing the functions of CPHL

Between 1990 and early 2000, CPHL performed the following functions as part of Divisions in the Federal Ministry of Health (FMoH):

- **Virology (HIV Rapid test and confirmation, Hepatitis Rapid Antibody Screening).**
- **Mycobacteriology (ZN Staining for AFB Microscopy, Skin snips/lesions for ZN staining for Mycobacterium leprae)**
- **Hematology (Full Blood Count, Blood group and Genotype, ESR)**
- **Clinical Chemistry (Blood glucose and urinalysis)**
- **Serology (Widal agglutination test)**
- **Parasitology (Malaria parasite and stool microscopy for ova of parasites and skin snips for onchocerciasis).**
- **Mycology (skin scrapings)**
- **Food Handlers tests**
- **Microbiology (Urine MCS, CSF MCS for CSM diagnosis, Stool MCS for Cholera and other enteric pathogens MCS/ serotyping, wound swab/ High Vaginal Swab (HVS) MCS and Mantoux test.**
- **Providing lab support during the then highly patronised government-subsidised Seminar of TOP Executives for serving and retired Ministers, Permanent Secretaries Chief Judges,**



1990 – Early 2000

Developing the functions of CPHL, Cont'd

- Ambassadors**
- **Training and coordination of the few existing Public Health Labs. An example was the training/orientation of selected State Epidemiologists and Lab Technologists in 1993 as part of Epidemic Preparedness and Response activities**
- **Training of students at various levels – from laboratory technicians to undergraduates**
- **Supporting lab-related dissertations of students studying for the Master of Public Health degrees**
- **Joint research activities with colleagues from College of Medicine of the University of Lagos, Institute of Medical Research, Chevron and companies like Smith-Kline French which evolved to Glaxo-Smith-Kline.**
- **Supporting laboratory surveillance with the Department of Virology, University of Ibadan and National Arbovirus and Vectors Research Centre (NAVRC), Enugu for arboviruses and vectors for, especially, yellow fever..**
- **Serving as condom quality testing lab as part of the National HIV/AIDS control activities**



2002 – 2017

Period of dormancy

Following its stand-alone establishment, CPHL received direct support from FMoH to provide public health laboratory services up till 2002. However, it was merged first with the Division of Port Health Services in 2007, and then with the Division of Epidemiology in 2009. The facility did not receive any direct subvention from the Government of Nigeria from 2002 till its incorporation into NCDC in 2011.

This grossly affected the scope of activities of the laboratory as it descended to a state of decline. The facility depended on internally generated revenue which was unsustainable for public health services. This absence of funding led to a decay of the facility, breakdown of laboratory equipment, limited supply of reagents, lack of stable power and water supply, among others. These challenges were further compounded by the increasing turn-out of technical staff due to either retirement, posting or resignation without complimentary replacements.

Some vertical activities continued through the support of partners but did not translate to institutional development. For example, in 2006 the World Health Organisation (WHO) designated CPHL as the National Reference Laboratory for the diagnosis of yellow fever, measles and rubella and provided the equipment [Enzyme-linked Immunosorbent Assay (ELISA) machine], necessary reagents and consumables required to test samples. However, other activities in the laboratory remained largely dormant.

2017 till date

Period of transformation



In 2011, the Nigeria Centre for Disease Control (NCDC) was established as an agency of FMoH. As part of this, several divisions in FMoH including the Epidemiology Division and laboratory services were transferred to NCDC.

In 2014, CPHL came into the limelight during the West African Ebola Virus Disease (EVD) outbreak in Lagos. A National Emergency Operations Centre (EOC) was activated at CPHL and response activities were coordinated within the laboratory. Given its continued yellow fever/measles/rubella diagnosis supported by WHO, the laboratory was designated by the West African Health Organisation (WAHO), in 2015, as a regional reference laboratory for the diagnosis of cholera and other enteric pathogens.

Although CPHL began a period of transformation associated with the Ebola response, the gains made during this period were lost almost immediately. The laboratory received intermittent funding, unstable power and water supply, and poor supply of reagents.

In 2016, following the appointment of a new Director General at NCDC, a focused period of retransformation began at CPHL. Firstly, a strategy was established to cover the laboratory's infrastructure, services and human resource capacity.

In terms of infrastructure, a renovation began immediately to make the laboratory fit for purpose, secure for services and a comfortable workplace for staff. This led to the complete restructuring of the building to clearly demarcate the laboratory from administrative locations and install required emergency exits, CCTV for security, alternative power supply, complete re-wiring of the building, refurbishment of parts of the building to serve as a mini warehouse for laboratory supplies, construction of a modern sample reception room and walk-through booth house for sample collection, establishment of a research laboratory, installation of an incinerator among several other activities.

In terms of services, CPHL was fully incorporated as a campus of the new NCDC National Reference Laboratory. With this, the activities of the laboratory were defined to align with the overall goals and objectives that NCDC developed in leading public health laboratory services. As a public health laboratory, routine services that were targeted towards revenue generation were discontinued. The laboratory is now fully focused on the diagnosis of diseases of public health concern including monkeypox, cholera, cerebrospinal meningitis, measles, yellow fever, rubella and most recently, COVID-19. The diagnosis of yellow fever, measles and rubella is now fully incorporated as a government function with support from WHO and other partners.

In terms of human resource capacity, special focus has been given to training staff and hiring additional human resource. Prior to 2018, staff at CPHL were not trained in molecular diagnosis and use of PCR. This has now changed with staff confidently leading the molecular diagnosis of pathogens, and training other laboratories across the country.

The last five years has provided an opportunity for transformation of this 87-year old public health institution. This is evidenced by its improved capacity for testing, development and operationalisation of standards for public health laboratory services in line with its raison d'être. In September 2021, the laboratory attained a four out of five-star rating, a leap from zero-star in 2018 based on an external audit for Quality Management System (QMS).

The CPHL has proven to be one of the most important assets for public health in Nigeria, West Africa, and the African region. As part of the NCDC NRL, it continues to lead, develop and strengthen capacity for comprehensive, efficient, and timely management of disease outbreaks and pandemics.

Annex 1: Leadership of CPHL

After its commissioning in 1989, Dr Femi Oyewole was appointed the first Head of CPHL, reporting to the Director of the Department of Disease Control and International Health at the Federal Ministry of Health.

In 1997, Dr F.K Ariyo succeeded Dr. Femi Oyewole and led the laboratory for ten years. Following the retirement of Dr Ariyo, Dr. Ali Onoja became Head of CPHL in 2007. In the same year and following a restructuring, CPHL was placed under the Division of Port Health Services, Department of Public Health in the Federal Ministry of Health.

In 2008, there was a second restructuring and CPHL was moved to the Division of Epidemiology. Dr. Adebayo Adedeji was appointed as Head of the Laboratory and held this position until 2010. Mrs. Geraldine Nwando Mba succeeded Dr. Adedeji and led the laboratory for seven years until 2017.

In 2017, Mrs Olajumoke Babatunde was appointed into this position and was succeeded by Mr. Aniefiok Ekoh in 2021.

Annex 2: Photo Gallery



Commissioning of CPHL by former Honourable Minister of Health, Late Prof. Olikoye Ransome Kuti in 1989



Staff of CPHL in 1989



Dr. Oyewole (5th from right) and Dr. Ariyo (3rd from right) with some senior staff of CPHL in 1989

Before



CPHL before renovation

After



CPHL after renovation

Before



Damaged floor as a result of constant water seepage into wash-up room

After



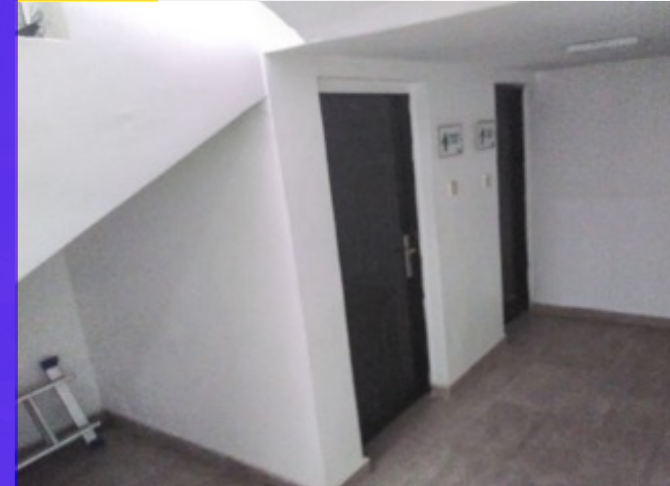
The new look of the lab floor space

Before



Dilapidated Decking

After



The new look of the building's decking

Before



Laboratory staff scooping water from Serology Laboratory

Before



Open waste management system

Before



The ceiling of the laboratory passage before renovation

Before



Ongoing



Construction of cold room for cold chain management.

After



The new look of the Serology Laboratory space

After



Incinerator house with incinerator for burning waste

After



The ceiling of the laboratory passage after renovation

Ongoing



New Structure (PCR Laboratory)



Sample Addition Room



Sample Archive Room



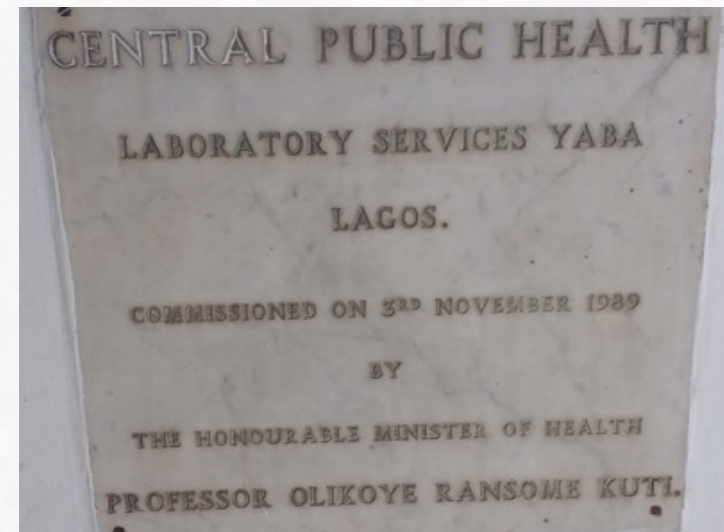
Sample Collection Area/Boot



Sample Collection Area/Boot



Amplification Room



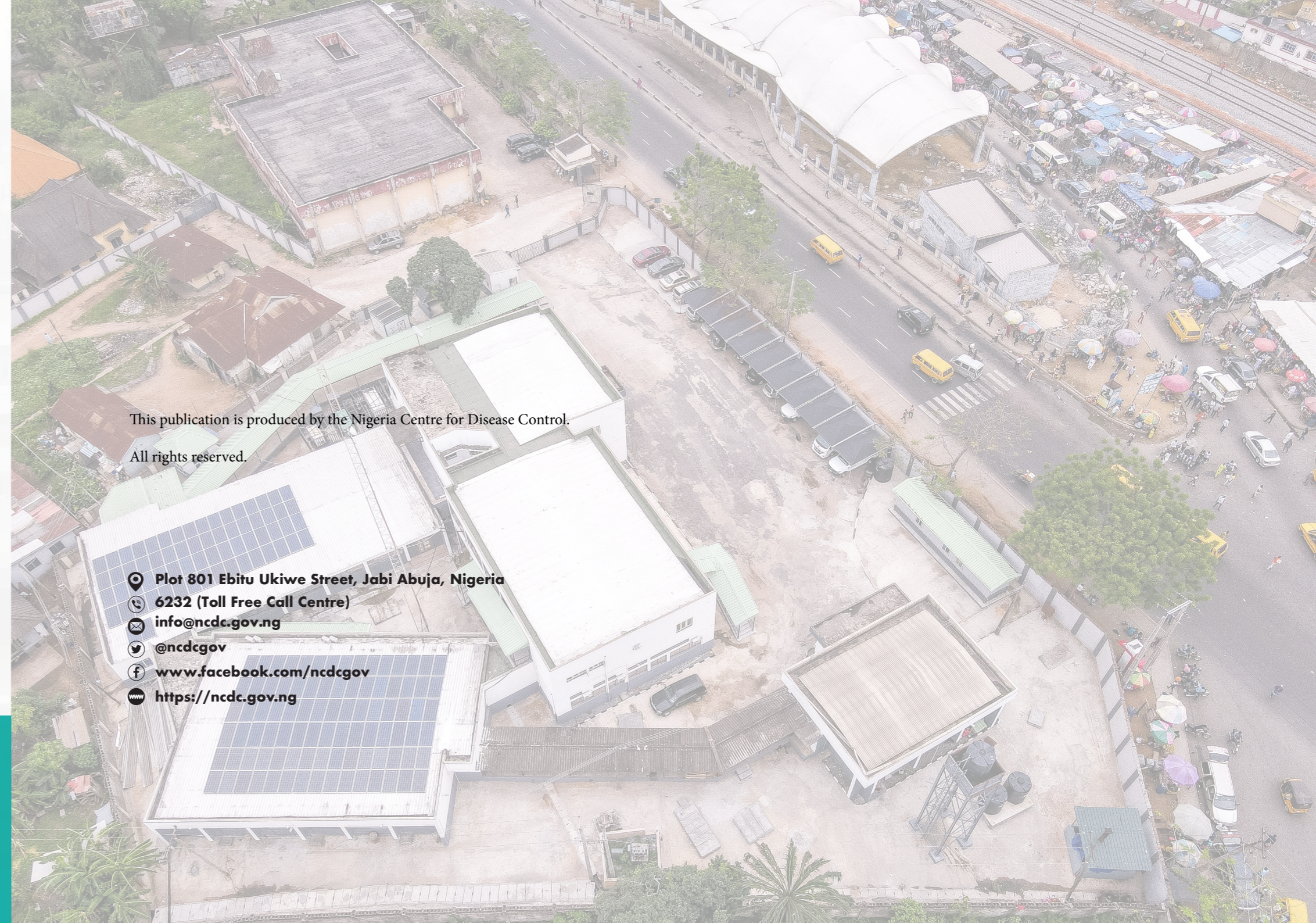
Signage of CPHL 1989 commissioning



Signage of CPHL built in 1943



Extraction Room



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Plot 801 Ebitu Ukiwe Street, Jabi Abuja, Nigeria

6232 (Toll Free Call Centre)

info@ncdc.gov.ng

@ncdcgov

www.facebook.com/ncdcgov

https://ncdc.gov.ng

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