ncdc.gov.ng

2019

NIGERIA CENTRE FOR DISEASE CONTROL
ANNUAL REPORT

NCDC
NIGERIA CENTRE FOR DISEASE CONTROL

2019 Nigeria Centre for Disease Control Annual Report

This publication was produced by Nigeria Centre for Disease Control

Published August, 2020

Cover and interior pages designed by Boboye Onduku/Blo'comms, 2020

2019

NIGERIA CENTRE FOR DISEASE CONTROL

ANNUAL REPORT

NCDC

NIGERIA CENTRE FOR DISEASE CONTROL

CONTENTS

ABBREVIATIONS AND ACRONYMS

AGF	Accountant General of the Federation
AMR	Antimicrobial Resistance
CRS	Congenital Rubella Syndrome
CSM	Cerebrospinal Meningitis
EOC	Emergency Operations Centre
FCT	Federal Capital Territory
FETP	Field Epidemiology Training Programme
FR	Financial Regulations
GIFMIS	Government Integrated Financial Management
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IANPHI	International Association of National Public Health Institutes
ICC	Incident Coordination Centre
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IHVN	Institute of Human Virology Nigeria
IMS	Incident Management System
IPC	Infection Prevention Control
IPPIS	Integrated Payroll and Personnel Information System
ITSON	Integrated Training for Surveillance Officers in Nigeria
JEE	Joint External Evaluation
LGAs	Local Government Areas
LIC	Lassa Fever International Conference
MDA	Ministries, Departments and Agencies
mSERS	Mobile Strengthening Epidemic Response System
NAIIS	Nigeria HIV/AIDS Indicator and Impact Survey
NCDC	Nigeria Centre for Disease Control
NCDCSCS	Nigeria Centre for Disease Control Staff Cooperative Society Limited

NFELTP	Nigeria Field Epidemiology and Laboratory Training Programme
NHF	National Housing Fund
NHIS	National Health Insurance Scheme
NiCaDe	Nigeria Capacity Development for Preparedness and Response for Infectious Diseases
NTD	Neglected Tropical Diseases
NYSC	National Youth Service Corps
PALS	Participatory Approach to Learning in Systems
PCR	Polymerase Chain Reaction
PHE	Public Health England
PHEOC	Public Health Emergency Operations Centre
PSR	Public Service Rules
REDISSE	Regional Disease Surveillance Systems Enhancement
RKI	Robert Koch Institute
RRTs	Rapid Response Teams
RSSH	Resilient and Sustainable Systems for Health
RTSL	Resolve to Save Lives
SDSNOs	State Disease Surveillance and Notification Officers
SMoH	State Ministry of Health
SORMAS	Surveillance Outbreak and Response Analysis System
TAC	TaqMan Array Card
TCs	Treatment Centres
TWG	Technical Working Group
US CDC	US Centers for Disease Control and Prevention
WAHO	West Africa Health Organisation
WARDS	West Africa Regional Disease Surveillance
WHO	World Health Organization

ABOUT NCDC

NIGERIA CENTRE FOR DISEASE CONTROL

NCDC VISION

A healthier and safer Nigeria through the prevention and control of diseases of public health importance

NCDC MISSION

To protect the health of Nigerians through evidence-based prevention, integrated disease surveillance and response activities, using a one health approach, guided by research and led by a skilled workforce

PROFILE

The Nigeria Centre for Disease Control is the country's public health agency with the mandate to protect the health of Nigerians, from the threat and occurrence of infectious diseases

SUPPORTING THE NEXT GENERATION OF PUBLIC HEALTH LEADERS

"At NCDC, sustainability is highly related to our core values of hard work and dedication."

WELCOME MESSAGE

Dear Colleagues and Friends,

Health security has many facets. For us at the Nigeria Centre for Disease Control, health security means protecting Nigerians from the impact of infectious diseases. Therefore, we attach great importance to building a strong national public health institute to prevent, detect and respond to outbreaks of infectious diseases.

In the year under review we focused largely on strengthening our core capacities across disease surveillance, public health laboratory services, health emergency preparedness and response as well as disease prevention and programme coordination. With Nigeria's population density, tropical climate and increasing population movement, we remain at high risk of infectious disease outbreaks. The more we succeed in strengthening our core capacities, the more resilient our health security will be.

In this report, you will read about our response to major outbreaks in 2019, our project to establish Emergency Operations Centres (EOC) in all states in Nigeria, establishment of bioinformatics and genetic sequencing capacity at our National Reference Laboratory, the mid-term Joint External Evaluation of International Health Regulations capacity in Nigeria, our expanded partnerships and progress made in strengthening NCDC as the country's NPHI.

At NCDC, sustainability is highly related to our core values of hard work and dedication. In 2019, we developed a new strategy to focus on building health security capacity at State level in Nigeria. We also write about this new strategy and what it means for Nigeria.

In this report, you will read about activities undertaken by staff of NCDC, with a steadfast commitment to protecting the health of all Nigerians and an unwavering focus on building a stronger and more resilient national public health institute. This is who we are, where we have come from – and where we are going.

I am very grateful for the leadership of the Honourable Minister and Honourable Minister of State for Health, who continue to provide strong support for our work at NCDC.

I invite you to explore this report and learn about our commitment towards achieving health security in Nigeria.

Chikwe Ihekweazu

DR CHIKWE IHEKWEAZU

Director General, Nigeria Centre for Disease Control

August 2020

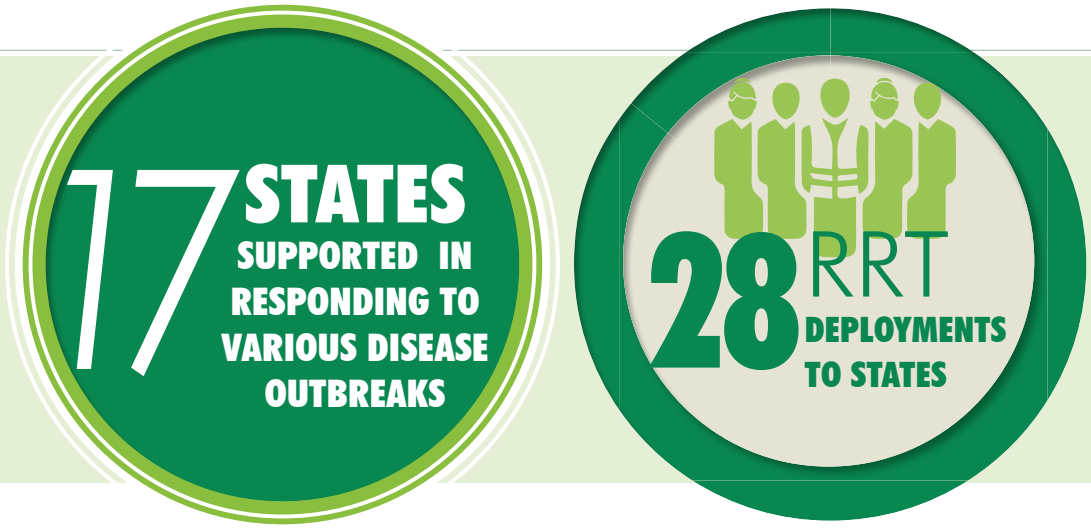
1

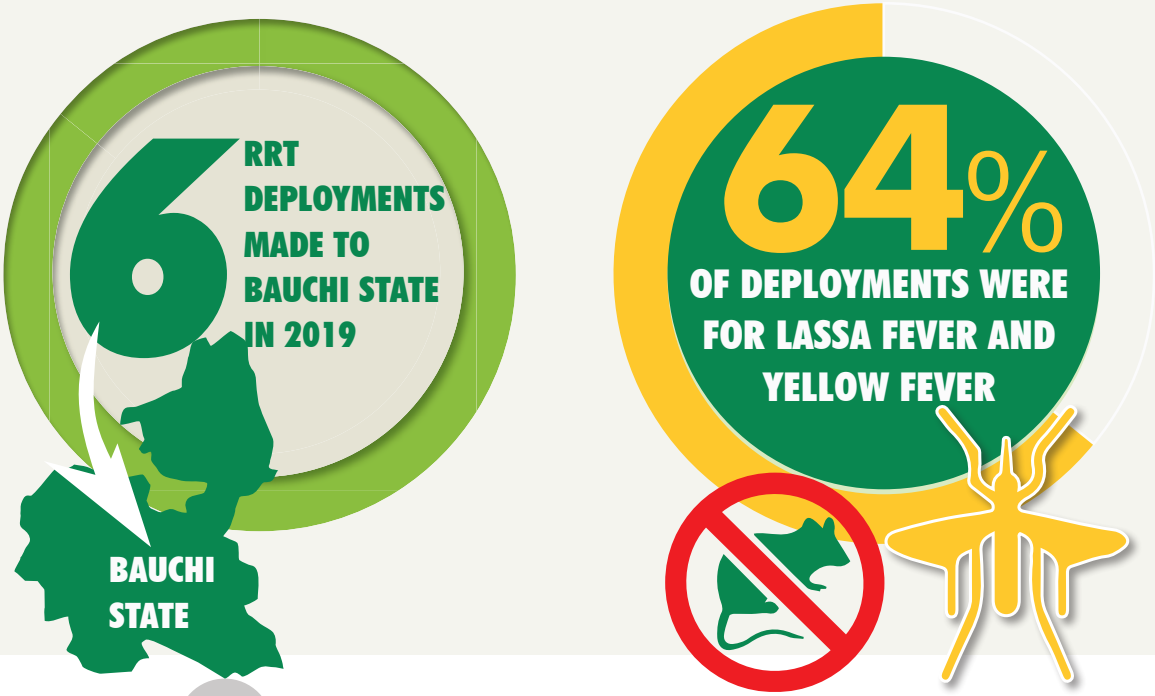
OUTBREAK RESPONSE IN NIGERIA IN 2019

In 2019, the Nigeria Centre for Disease Control (NCDC) responded to outbreaks of Lassa fever, yellow fever, measles, cholera and monkeypox. Our response included deployment of Rapid Response Teams (RRTs), provision of medical supplies and related activities.

The NCDC deployed RRTs to 17 states; a decrease of 19% in comparison to the 21 states supported in 2018. There was also a reduction in deployments of RRTs by 45.1% compared to 2018 (51 in 2018 and 28 in 2019).

The state with most deployments from NCDC was Bauchi State (*see Figure 1*). Lassa fever and yellow fever accounted for about 64% of all deployments (*see Figure 2 and 3*).





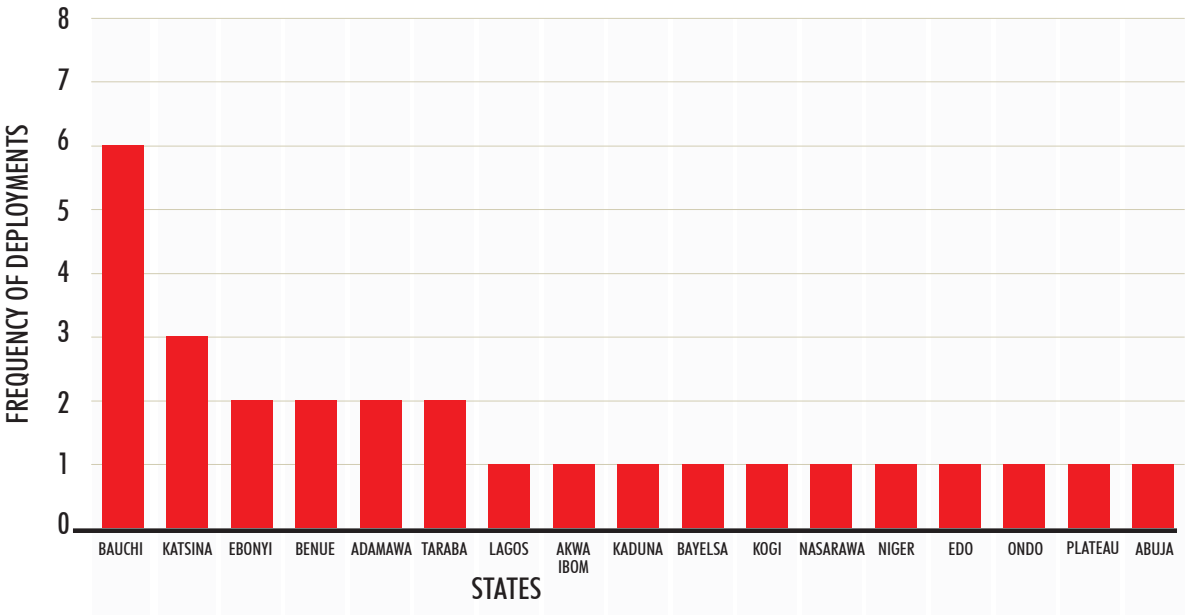


Figure 1: Frequency of deployment of NCDC RRTs to States in 2019 in Nigeria

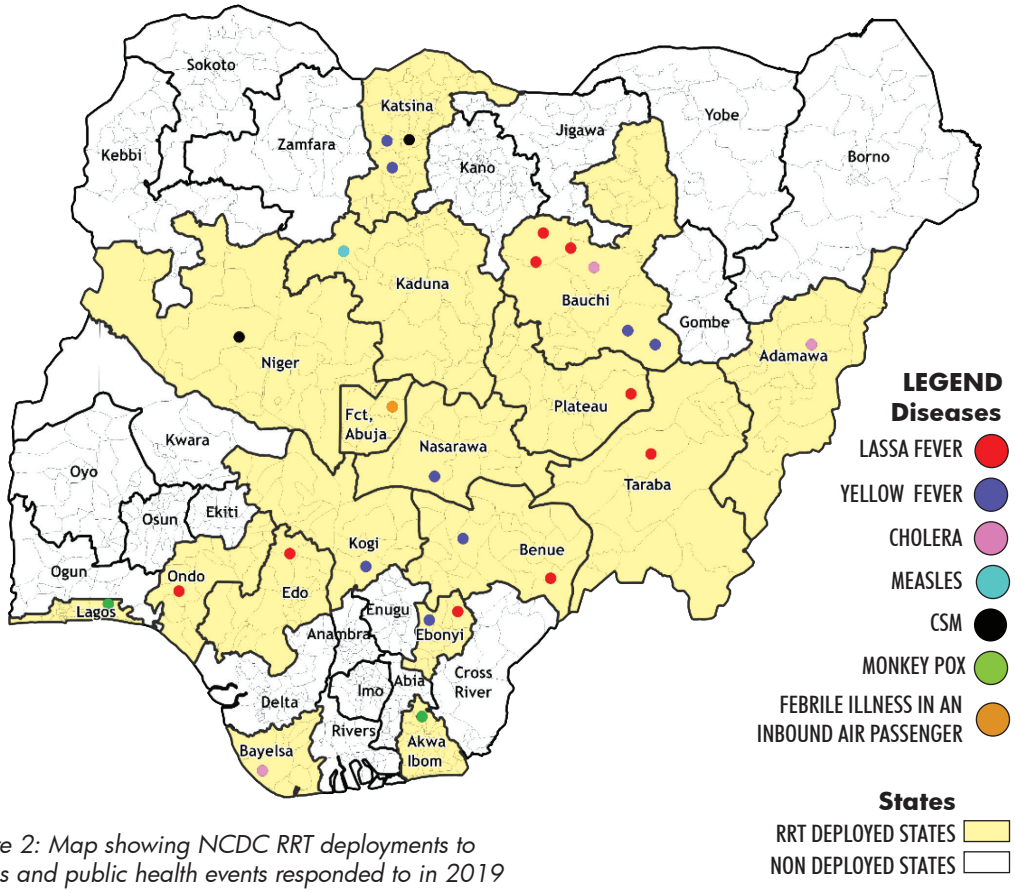


Figure 2: Map showing NCDC RRT deployments to States and public health events responded to in 2019

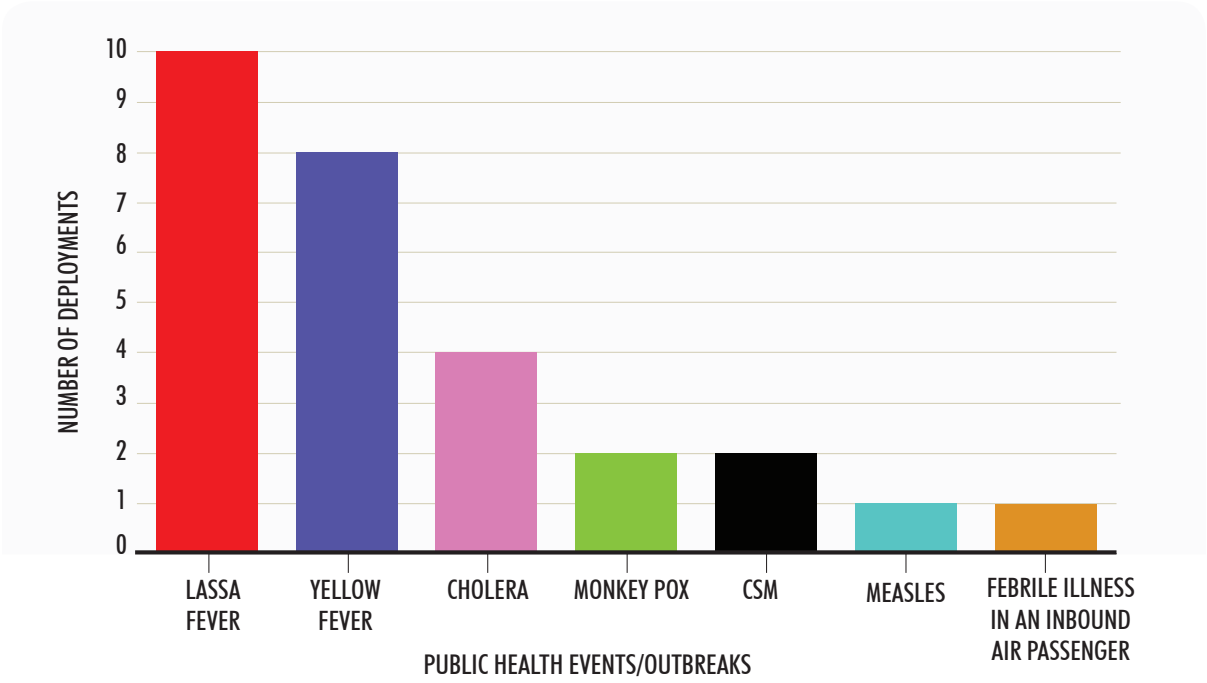


Figure 3: Frequency of NCDC RRT deployments based on public health event/outbreaks in 2019 in Nigeria

2

DEPARTMENT OF HEALTH EMERGENCY PREPAREDNESS AND RESPONSE

Manages preparedness, response, supply chain and logistics functions of the agency

DEPARTMENT OF HEALTH EMERGENCY PREPAREDNESS AND RESPONSE

HEAD OF DEPARTMENT/DIRECTOR
Dr. John Oladejo

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS*
29	11

2.1 Coordination and Response of Public Health Emergency Operations Centres (PHEOCs)

In April 2018, NCDC established the first State Public Health Emergency Operations Centre (PHEOC) in Nigeria, in Zamfara State. In 2019, NCDC expanded the number of states with PHEOCs from 11 to 21; trained and mentored 437 State frontline responders; and trained 23 security personnel using the Incident Management System (IMS). NCDC also maintains a cohort of well trained and functional 630 multi-sectoral staff strength (surge and core) across all 21 states with PHEOCs.

KEY STRIDE BY NUMBERS

10 ADDITIONAL STATE PHEOC ESTABLISHED

In states where the Surveillance Outbreak and Response Analysis System (SORMAS) has been rolled out, the PHEOCs leverage on 'real-time' information systems for prompt outbreak detection and response. Trained PHEOC staff can now activate a coordinated emergency response within 120 minutes of the identification of a public health emergency.

States with established PHEOCs provide the physical space and manpower while NCDC continues to support with the training of PHEOC staff and provision of required equipment. This collaborative effort has helped to improve disease detection as well as coordination of information, resources and response to public health events. Our goal is to have a fully functional PHEOC in each state across the country by the end of 2020.

The establishment of State PHEOCs has been funded through various sources including the Government of Nigeria, Bill and Melinda Gates Foundation and the West Africa Health Organisation (WAHO).

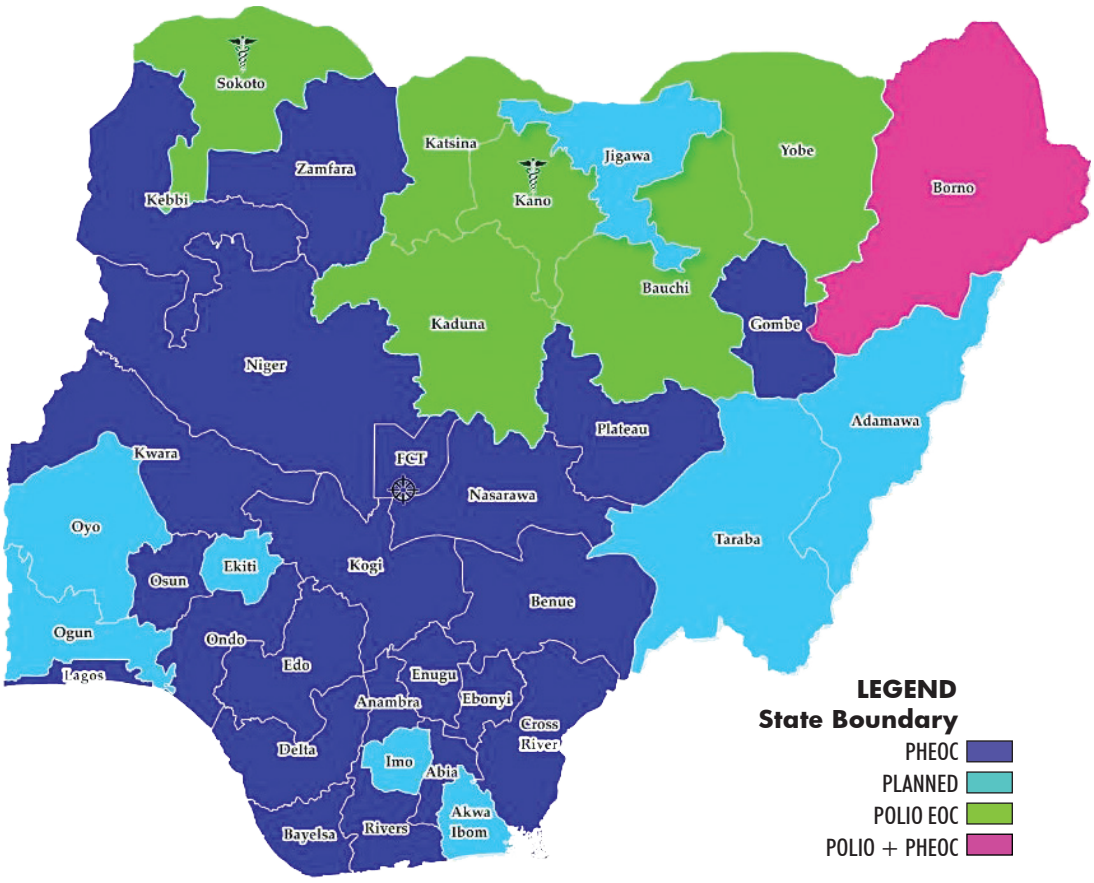


Figure 4: Public Health Emergency Operation Centres (PHEOCS) Across the Country as at December 9, 2019

KEY STRIDE BY NUMBERS

291 STATE LEVEL RRT OFFICERS TRAINED

2.2 Rapid Response Teams (RRTs) Establishment in 36 States and Federal Capital Territory

In line with the One Health approach, inter-disciplinary Rapid Response Teams (RRTs) were established and trained by NCDC in all states in Nigeria in 2019. These RRTs are responsible for leading the preparedness and response to infectious disease outbreaks in states in Nigeria. A total of 291 state level officers were trained across the country. These state officers have the responsibility to train other health workers especially at the Local Government level. The training and establishment of state-level RRTs was funded through the World Bank Regional Disease Surveillance Systems Enhancement (REDISSE) project.

2.3 Medical Countermeasures for Outbreak Preparedness and Response

In 2019, NCDC supported states and treatment centres with medicines and consumables for the management of cases of Lassa fever, Cerebrospinal Meningitis, measles, yellow fever, cholera and monkeypox.

The disease with the most need for medical supplies was Lassa fever. As part of our mandate, NCDC supported states as presented below.

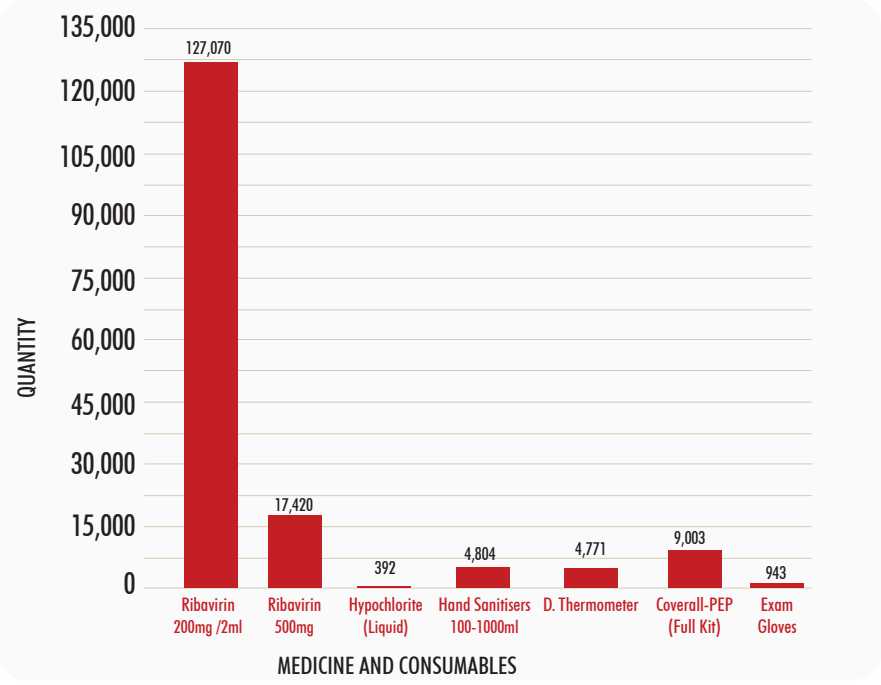


Figure 5: Annual consumption pattern of medicines and consumables distributed to the SMOH and TCs in 2019

3

DEPARTMENT OF DISEASE SURVEILLANCE AND EPIDEMIOLOGY

Collects, collates and analyses data on priority diseases using the Integrated Disease Surveillance and Response (IDSR) strategy

DEPARTMENT OF DISEASE SURVEILLANCE AND EPIDEMIOLOGY

HEAD OF DEPARTMENT

Mrs. Olubunmi Ojo

(RETIRED SEPTEMBER 2019)

Mrs. Elsie Ilori

(OCTOBER 2019 - DATE)

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS IN 2019*
41	6

3.1 Nigeria's International Health Regulations Capacity

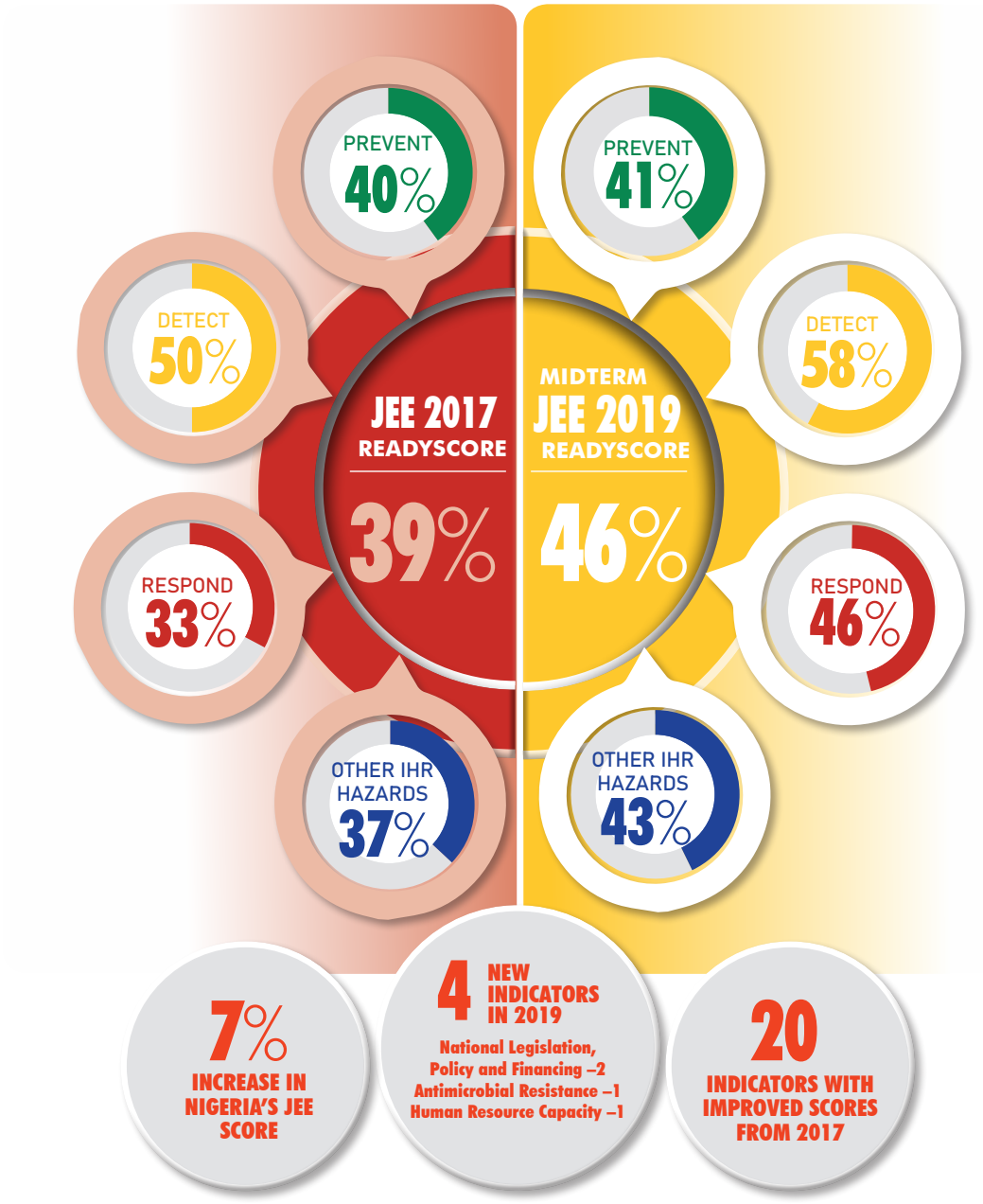
In 2019, Nigeria became the first country to carry out a mid-term Joint External Evaluation (JEE) of International Health Regulations (IHR) core capacities. The results showed that Nigeria achieved an overall score of 46%, an improvement from the baseline score of 39% recorded in 2017.

The review was conducted based on standard international criteria as contained in the WHO JEE 2.0 tool for self-assessment and grading. Using the WHO

benchmark tool, target actions were identified, and a one-year implementation matrix was created for 2020.

The midterm JEE included stakeholders from relevant Ministries, Departments and Agencies with responsibility for IHR implementation and compliance in Nigeria.

Nigeria's next major JEE is scheduled for 2022, five years after the first JEE in 2017.



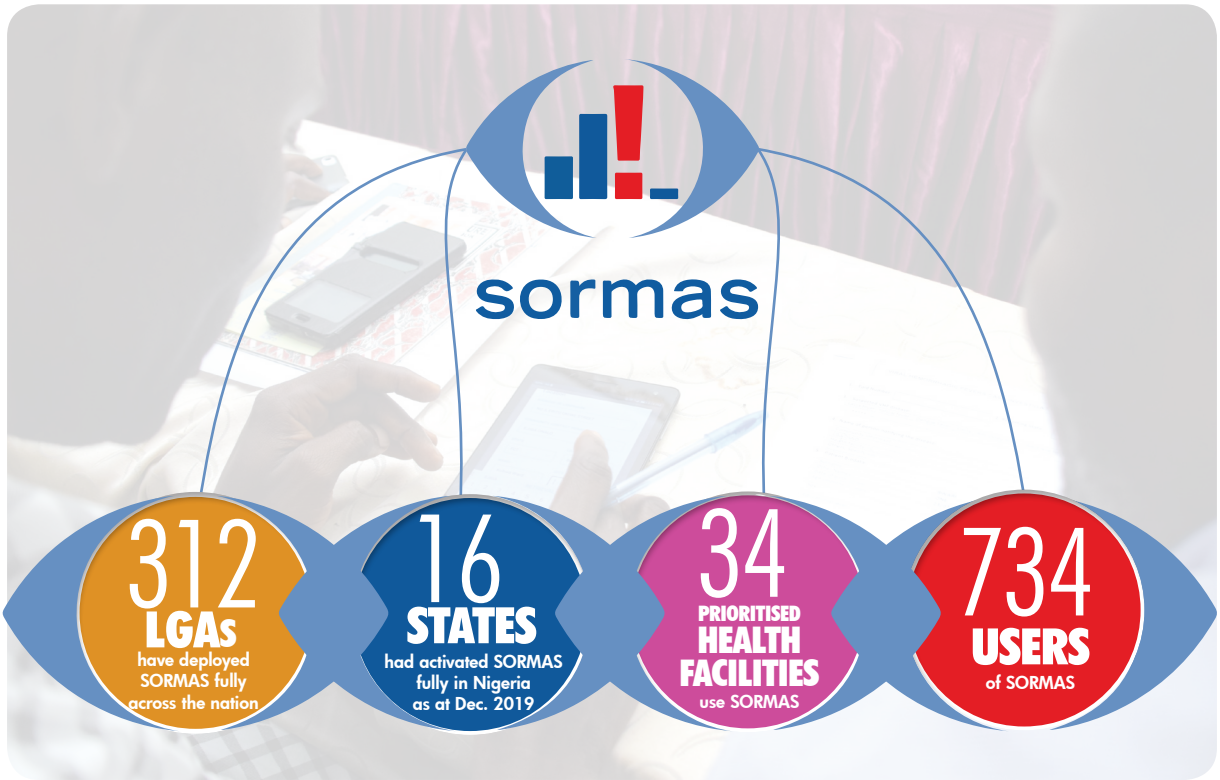
3.2 SORMAS for Case-Based Digital Surveillance

In 2017, the Nigeria Centre for Disease Control (NCDC) adopted Surveillance, Outbreak Response Management and Analysis System (SORMAS) as the tool for case-based digital surveillance. SORMAS integrates all the necessary functionalities in surveillance and outbreak response such as case investigation, contact tracing, rumour management and laboratory management of samples.

In 2019, additional updates were made to improve the efficiency of this tool. The point of entry and case management modules were developed and included on the platform. This has enhanced surveillance at points of entry and improved the collation and management of clinical data.

At the end of 2019, SORMAS had been fully deployed and adopted for digital surveillance in 312 Local Government Areas (LGAs) across 16 states (Figure 8) and is currently being used in 34 prioritised health facilities by 734 health officers across Nigeria.

The goal is to ensure that by 2021, SORMAS will be fully deployed in all the 774 LGAs in Nigeria.



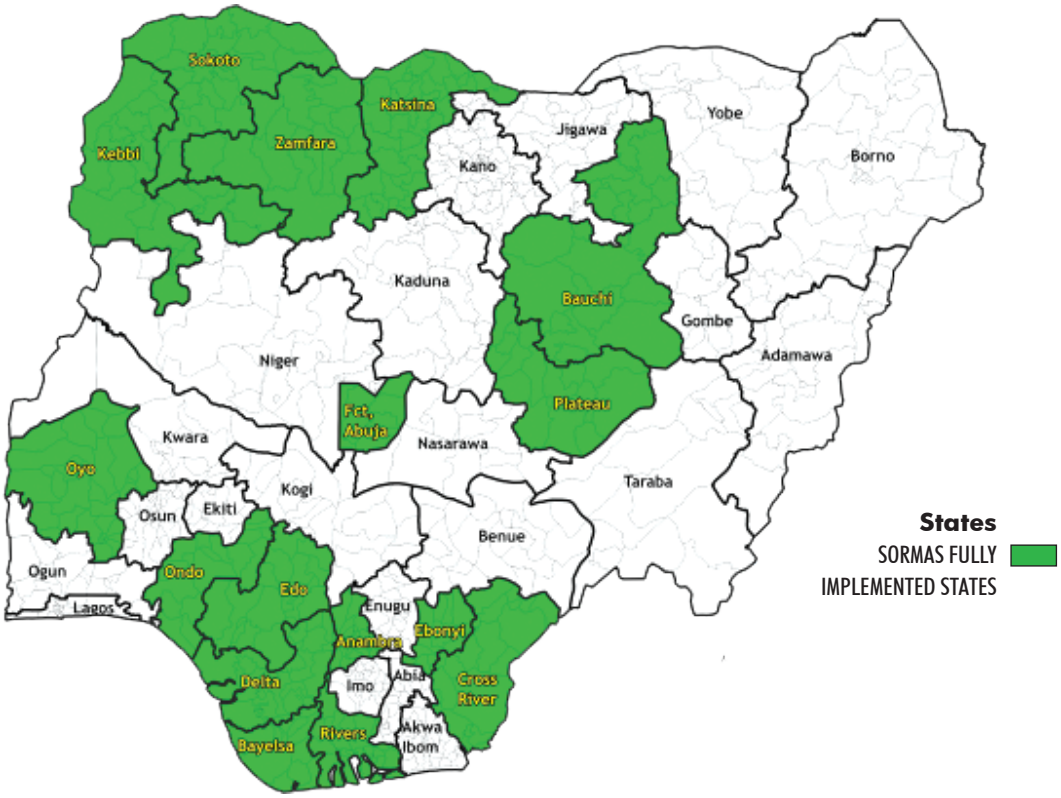


Figure 6: Nigerian States that have fully implemented SORMAS

3.3 New Workforce Development Plan for Surveillance in Nigeria

In 2019, a new harmonised training package known as Integrated Training for Surveillance Officers in Nigeria (ITSON) was developed. This training package integrates previous training curricula for WHO Integrated Disease Surveillance and Response (IDSR), US-CDC Frontline Field Epidemiology Training Programme (FETP), West Africa Regional Disease Surveillance project (WARDS) and Mobile Strengthening Epidemic Response System (mSERS). It also incorporates new areas of learning such as One Health and use of Incident Management System (IMS).

This training module was developed to address training needs for enhanced surveillance and improved workforce development at the sub-national levels.

In 2020, NCDC will begin the roll out of the ITSON training package in states. This will help to address the gaps in achievement of the set target of 1 epidemiologist per 200,000 persons (WHO target) and strengthen the surveillance systems across the country to improve detection, reporting and response to threats from diseases, conditions and events.

KEY STRIDE BY NUMBERS 774 LGAs WITH 100% mSERS DEPLOYMENT

3.4 Nationwide Deployment of Mobile Strengthening Epidemic Response System (mSERS)

In 2019, NCDC completed the roll out of mSERS in all states and the Federal Capital Territory. mSERS is an SMS-based platform for reporting of epidemic-prone priority diseases from LGA level through the state level and to the national level. It is currently used for weekly Integrated Disease and Surveillance Response (IDSR) 002 reporting and structured to follow the IDSR 002 format and time line.

The deployment of mSERS commenced with a pilot in three (3) states (FCT, Lagos and Kano) in 2016. It also included training of Surveillance Officers at the national level, State Directors of Public Health, State Epidemiologists, State Disease Surveillance and Notification Officers (SDSNOs), State Laboratory focal persons and LGA DSNOs.

In September 2019, mSERS deployment was completed in 774 LGAs of the 36 states and FCT Abuja to attain a 100% coverage (Figure 7). Following the review of the IDSR Technical Guideline, the system is being upgraded and updated to capture the nine (9) newly listed diseases earmarked for weekly reporting.

The goal is to ensure that the reviewed application is updated for all users by mid-2020. The mSERS application will be integrated with the SORMAS application in a single device for all users to improve user experience and avoid redundancy due to use of multiple devices. The roll out of mSERS in Nigeria was supported by US-CDC through the University of Maryland Baltimore and Georgetown University.

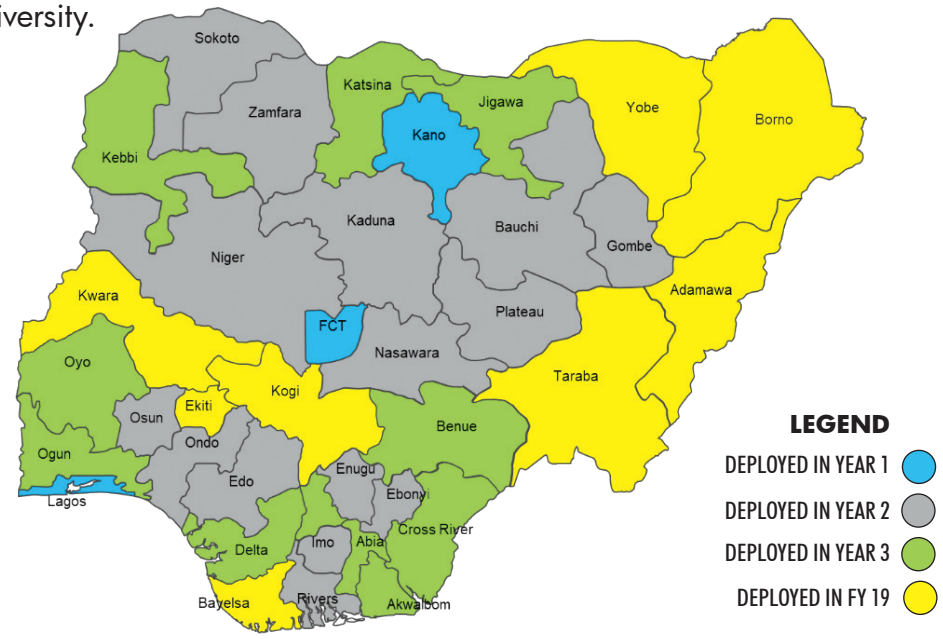


Figure 7: Status of mSERS Deployment across the country

4

DEPARTMENT OF LABORATORY SERVICES

Leads the diagnosis of public health diseases in Nigeria through the National Reference Laboratory (NRL) and network of public health laboratories.

DEPARTMENT OF LABORATORY SERVICES - NRL Gaduwa, Abuja and CPHL Yaba, Lagos

HEAD OF DEPARTMENT/DIRECTOR

Mrs. Nwando Mba

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS IN 2019*
32	17

MAJOR ACHIEVEMENTS IN 2019

- Established capacity for genetic sequencing
- Obtained partial accreditation from WHO for yellow fever PCR testing
- Fully functional research laboratory
- Established mega laboratory for HIV/AIDS

4.1 Testing at the National Reference Laboratory

In 2019, a total of 3,141 samples were tested at NRL for yellow fever, measles, rubella, monkeypox, cholera, cerebrospinal meningitis and influenza. In addition, the laboratory's HIV mega-lab tested over 66,000 samples.

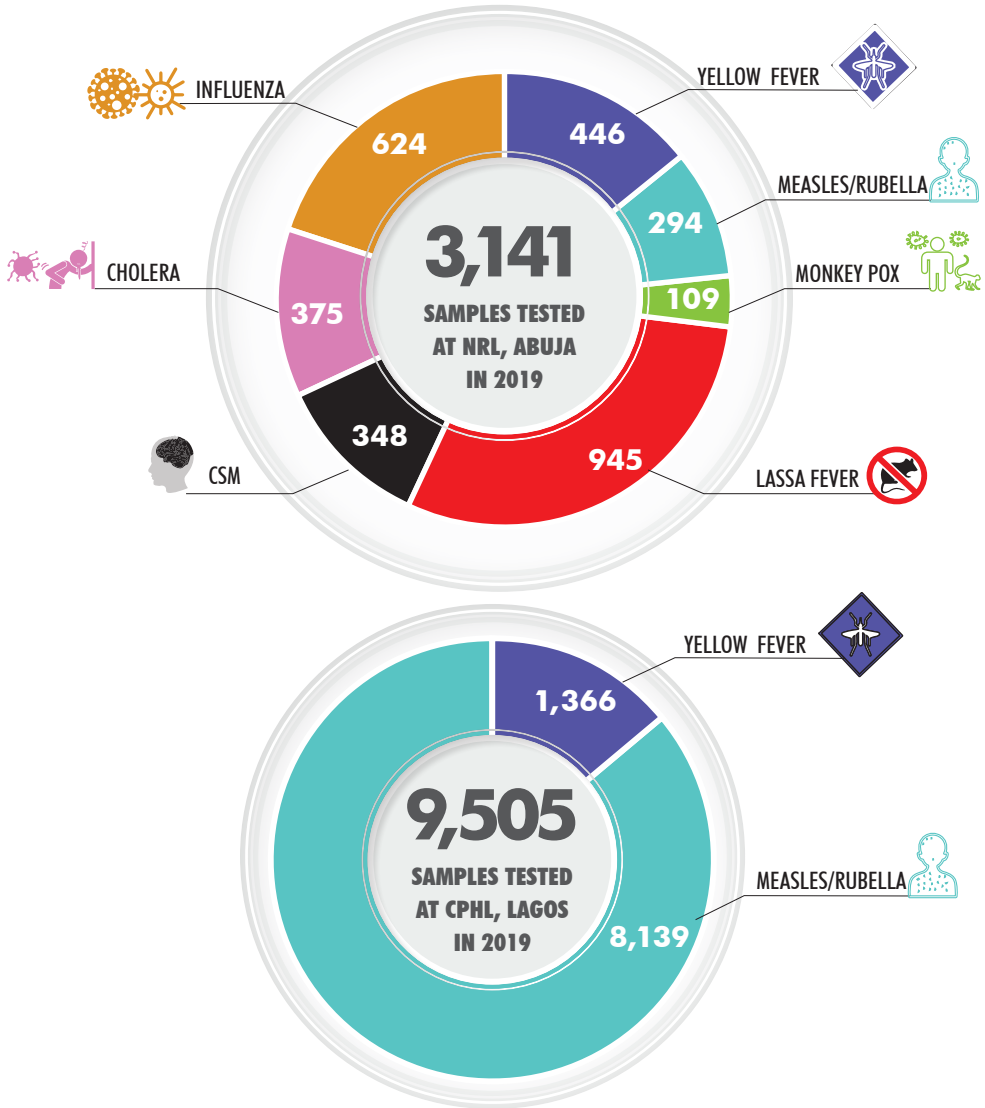
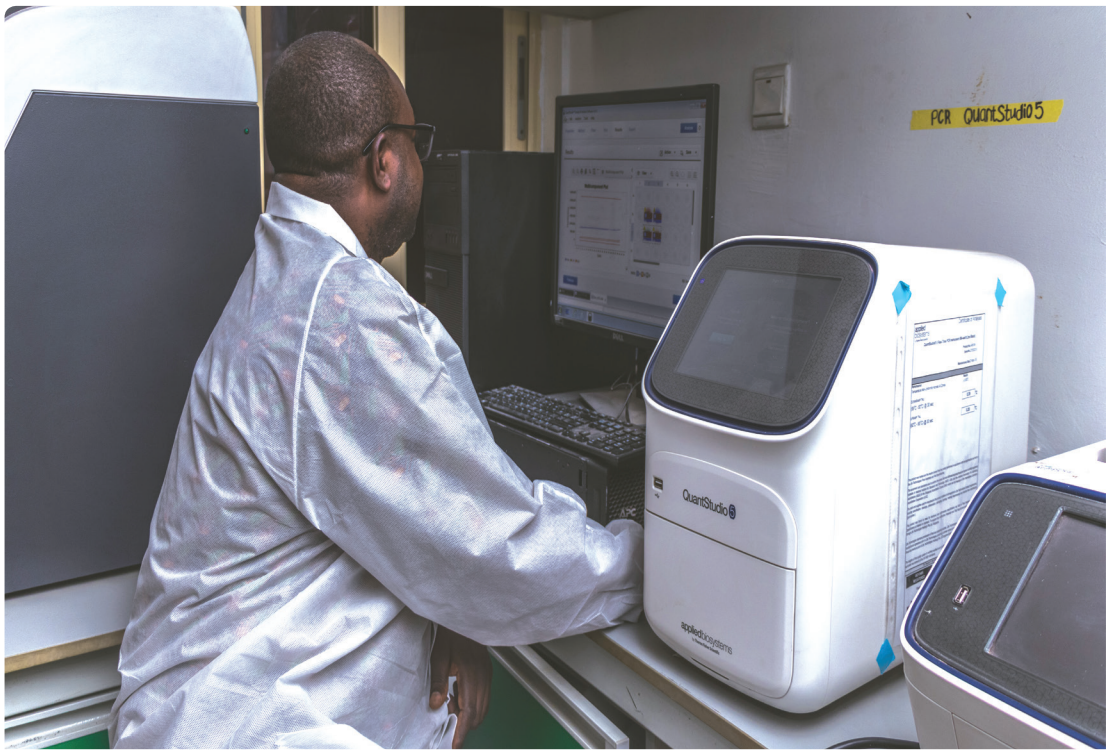


Figure 8: Samples tested at NRL Gaduwa, Abuja and CPHL, Lagos

While recognising the use of various testing platforms for different diseases (molecular, serological and bacterial culture methods), the laboratory recorded an improvement in overall turnaround time with an average of 24 hours to 3 days for all pathogens.

4.2 Genomics and Sequencing Capacity Established at National Reference Laboratory (NRL)



In the second quarter of 2019, NCDC established a research unit for the National Reference Laboratory (NRL). The research laboratory is well equipped with contemporary molecular and genomics research equipment to support diagnostics and strengthen scientific investigation of outbreak causes. This provides access to cutting edge infrastructure for genotyping, microarray, nucleic acid isolation, and sequencing services.

In the first quarter of 2019, NCDC launched the use of TaqMan Array Card (TAC) to test 'Lassa negative' samples pooled during the 2018 Lassa outbreak. The use of this technology has enabled further insights into possible causes of febrile illness in Nigeria, that is not Lassa fever. Supported by Public Health England, this study will guide preparedness and response activities in Nigeria.

The NRL also has a Genetic Analyser for Sanger sequencing of amplicons and small pathogens.

4.3 Heralding Next Generation Sequencing at National Reference Laboratory (NRL)

In 2019, the NRL carried out its first Next Generation Sequencing using the Oxford Nanopore MinION technology. Lassa fever and yellow fever negative samples were sequenced with Min-ION to track transmission patterns of these diseases in Nigeria. In addition, the laboratory was part of a regional MinION sequencing of Vibrio Cholerae hosted by NCDC with participants from the Republics of Cameroon and Niger. This was supported by Johns Hopkins University.

Nigeria contributed sequencing data to the global cholera database in 2019, after an eight-year gap since West Africa last contributed to this database. Given the establishment of this capacity at NRL, NCDC will continue to contribute to global knowledge and control of cholera.

4.4 Building Bioinformatics Capacity

In moving from a diagnostics to research and diagnostics laboratory, staff of the NRL are being trained on various innovations. NCDC was part of the Pan African Bioinformatics Program funded by H3Africa BIONET in collaboration with the University of Cape Town.

4.5 Central Laboratory for Nigeria HIV/AIDS Indicator and Impact Survey

In 2019, Nigeria completed the largest ever population-based HIV/AIDS Indicator and Impact Survey (NAIIS) recorded globally. According to the NAIIS result, HIV prevalence in Nigeria is 1.5%.

The NCDC NRL served as the central laboratory for the survey. This led to the establishment of a large biorepository that houses the survey samples for the Government of Nigeria.

A Mega PCR laboratory was also established within the NRL, with the capacity to run 3,000 samples per day. This is supported by the US Centers for Disease Control and Prevention, through the Institute of Human Virology Nigeria .

4.6 Multiplex Bead Assay for Nigeria Multi Disease Surveillance Study

Multi-disease surveillance platforms have been developed at NCDC in partnership with the United States Centers for Disease Control and Prevention (US-CDC). In 2020, NCDC will use this platform to estimate the prevalence of priority pathogens in Nigeria, using samples from NAIIS.

A world class HIV Mega Multiplex Laboratory was set up at the NRL for conducting massive studies as well as tracking the 'recency status' of HIV infection. About 10,000 samples were processed for the HIV component of the work using Magpix in 2019. In addition, a training on TRI-OPLEX system for detection of Dengue, Zika and Chikungunya virus was conducted at the NRL with support from the World Health Organization (WHO).

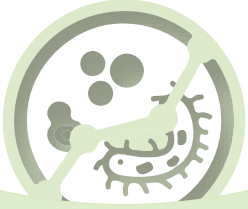
4.7 Diagnosis of Onchocerciasis

In 2019, NCDC established the capacity for onchocerciasis diagnosis within the National Reference Laboratory. Through this, NCDC will support the Neglected Tropical Diseases (NTD) Unit of the Federal Ministry of Health with diagnosis.

PROCESSED FOR THE HIV COMPONENT OF THE MULTIPLEX BEAD ASSAY FOR NIGERIA MULTI DISEASE SURVEILLANCE STUDY USING MAGPIX IN 2019

5

DEPARTMENT OF PREVENTION, PROGRAMMES AND KNOWLEDGE MANAGEMENT



Develops health promotion and disease prevention plans which address priority endemic infectious diseases in Nigeria

DEPARTMENT OF PREVENTION, PROGRAMMES AND KNOWLEDGE MANAGEMENT

HEAD OF DEPARTMENT/DIRECTOR

Dr. Joshua Obasanya

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS IN 2019*
31	9

5.1 Testing at the National Reference Laboratory

Nigeria became a recipient of the Fleming Fund in 2019 at country and regional levels. In recognition of the global threat of antimicrobial resistance, the Fleming Fund was conceptualised by the UK Government to improve global surveillance of Antimicrobial Resistance in low- and medium-income countries.

The Fleming fund Nigeria grant has a four-year duration April 2019 – April 2022 with value of up to GBP$10,000,000 to strengthen One Health governance structure for AMR and AMU surveillance, strengthen AMR and AMU surveillance system in the human health and animal sectors as well as establish foundation for AMR surveillance in aquatic species and environment.

NCDC has commenced the implementation of the project in Nigeria in collaboration with other awardee institutions.

5.2 Establishing Infection Prevention Control (IPC) Centres of Excellence

In 2019, NCDC formally established an IPC unit within the agency. This unit has led the introduction of various interventions.

On 2019 World Hygiene Day (4th May, 2019), NCDC launched the development of a network of 40 health facilities (public and private) which will be supported in next five years to become IPC centres of excellence. This is towards reducing the occurrence of health care worker infections in Nigeria.

In addition, NCDC launched the *Turn Nigeria Orange* campaign, aimed at supporting health facilities across Nigeria to have the basic standards for infection prevention and control. The campaign was launched by former Chair of the Senate Committee on Healthcare Services, Senator Lanre Tejuoso, as a champion for IPC in Nigeria.

NCDC unveiled the Participatory Approach to Learning in Systems (PALS), a component of our Infection Prevention Control project. Colleagues from different states were trained as trainers of change agents whose goal is to improve IPC practice in health facilities in their states.

5.3 Resilient and Sustainable Systems for Health (RSSH) Project

In 2019, NCDC received its first RSSH Global Fund grant. This is to strengthen quality assurance, biosafety and biosecurity in laboratories in Nigeria.

As a baseline, 74 laboratories in 36 states were assessed. Thereafter, training on Sample transportation and Quality Management System were conducted for quality officers and the leadership of various laboratories.

5.4 IMPACT Nigeria Distinguished Fellows Programme

In 2019, NCDC implemented her first IMPACT Nigeria Distinguished Fellows Programme. Supported by the International Association of National Public Health Institutes (IANPHI), there were 23 members in the first cohort. Each trainee implemented a project through the six-month training, aimed at strengthening health security in Nigeria.

KEY STRIDE BY NUMBERS

23

TRAINEES FORMED THE FIRST COHORT OF THE IMPACT NIGERIA DISTINGUISHED FELLOWS PROGRAMME

5.5 Nigeria Capacity Development for Preparedness and Response for Infectious Diseases (NiCADE) Project

The NCDC and Germany's Robert Koch Institute (RKI) launched the NiCaDe project in 2019.

This is an expansion of the existing collaboration between both institutions, to include: intensifying surveillance of endemic viral infections of high public health concern; improving surveillance of antimicrobial resistance (AMR) and antibiotic stewardship; improving infection prevention and control (IPC),and surveillance for Hepatitis E, Rotavirus and AMR. This collaboration demonstrated the fact that countries are mutually dependent on each other, for health security.

5.6 AMR Guardian Pledge Launch

As part of activities to mark the National Antibiotic Awareness Week in 2019, NCDC with the support of Public Health England, launched a digital platform, antibioticguardian.com/africa, to document pledges from all Nigerians to undertake behaviours encouraging responsible use of antibiotics. This was launched by Senator Ibrahim Oloriegbe as Champion for AMR in Nigeria.

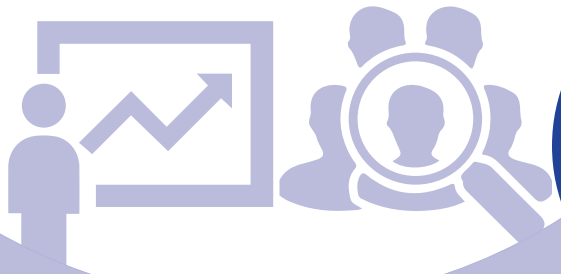
5.7 Nigeria Field Epidemiology and Laboratory Training Programme

In 2019, NCDC began the full transition of the Nigeria Field Epidemiology and Laboratory Training Programme (NFELTP) to the Government of Nigeria. For 11 years, the programme has been largely supported by the US Government.

In 2019, 47 NFELTP cohort 11 residents were recruited and sponsored by the Government of Nigeria, the first time majority of Residents will be funded by the Government.

6

DEPARTMENT OF ADMINISTRATION AND HUMAN RESOURCES



Responsible for human capital development and assets management. It also deals with staff career progression, recruitment, posting, discipline, establishment matters, record keeping and general services.

DEPARTMENT OF ADMINISTRATION AND HUMAN RESOURCE

HEAD OF DEPARTMENT/DIRECTOR

Mr. Yakubu Y. Abdullahi

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS IN 2019*
29	9

6.1 Major Administrative Achievements in 2019

The welfare of staff is an integral part of NCDC's daily operations. In 2019, the Department of Administration and Human Resource led the introduction and strengthening of various administrative processes, some of which are listed below:

- Development of a new staff organogram with Terms of Reference and Key Performance Indicators for all staff

- Enrolment of all eligible staff into the Government-approved Integrated Payroll and Personnel Information System (IPPIS)
- Establishment of Nigeria Centre for Disease Control Staff Cooperative Society Limited (NCDCSCS)
- Establishment of NCDC Senior Staff Committee
- Establishment of the NCDC Sports Club
- Inclusion of NCDC on National Housing Fund platform
- Training of NCDC drivers and introduction of drivers' uniform
- Introduction of new life and health insurance insurance package for all staff
- Improved management of NCDC vehicle fleet
- Building of new cafeteria in all campuses

NCDC football team

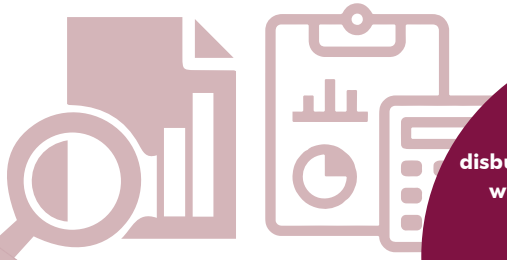
Send forth/induction of corps members

- *Workers' Day parade*

- *DG and NCDC drivers*

7

DEPARTMENT OF FINANCE AND ACCOUNTS



Responsible for ensuring accountability in the management and disbursement of funds in accordance with the following extant rules;

- **Federal Republic of Nigeria Financial Regulations (FR);**
- **Public Service Rules (PSR), and other Financial /Treasury circulars;**
- **NCDC Best Practice Manual; and**
- **World Bank and Donors' Financial Guidelines.**

DEPARTMENT OF FINANCE AND ACCOUNTS

HEAD OF DEPARTMENT

Mr. Buhari Abdullahi

NUMBER OF STAFF	*NUMBER OF CORPS MEMBERS IN 2019*
17	1

7.1 Computerisation of the Accounting System

In 2019, the Finance and Accounts department installed a computerised financial system and built the capacity of NCDC Finance Team on the use of the computerised accounting system.

This innovation brought about improved outbreak response activities with prompt disbursement of funds; improved capability to provide better accountability to the

funders; improved decision-making to enable the achievement of set objectives; and overall improved credibility of NCDC's finance and accounting system.

7.2 Staff Enrollment on GIFMIS

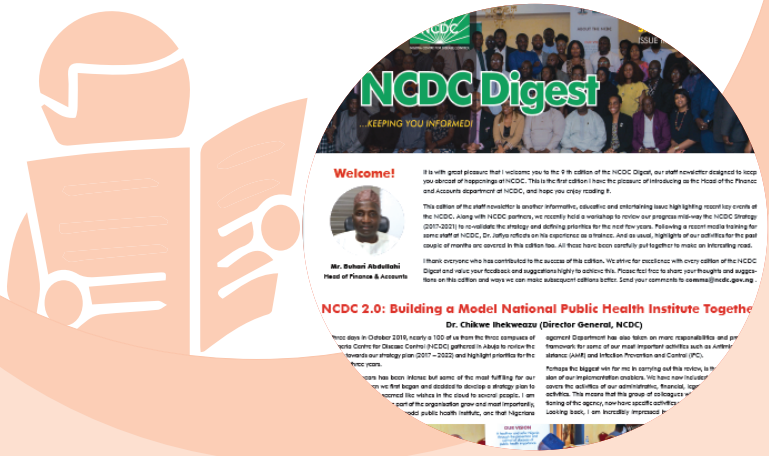
To ensure workers receive their payments and allowance directly from NCDC, the Department enrolled staff including NYSC and casual staff on the GIFMIS platform.

7.3 IPPIS Payroll Desk

The Finance and Account Department activated the NCDC IPPIS Payroll desk office to assist with addressing issues relating to IPPIS payments.

8

NCDC IN THE NEWS AND MEDIA



8.1 Newsletter Production

In 2019, NCDC began the production of in-house newsletters, once in three months. These newsletters covered stories and lessons from colleagues across the agency's three campuses.

8.2 Media Representation and Training

In 2019, Directors and senior management staff were part of media training, supported by IANPHI and the US CDC.

9

OTHER MAJOR EVENTS AND ACTIVITIES IN 2019

9.1 Lassa Fever International Conference

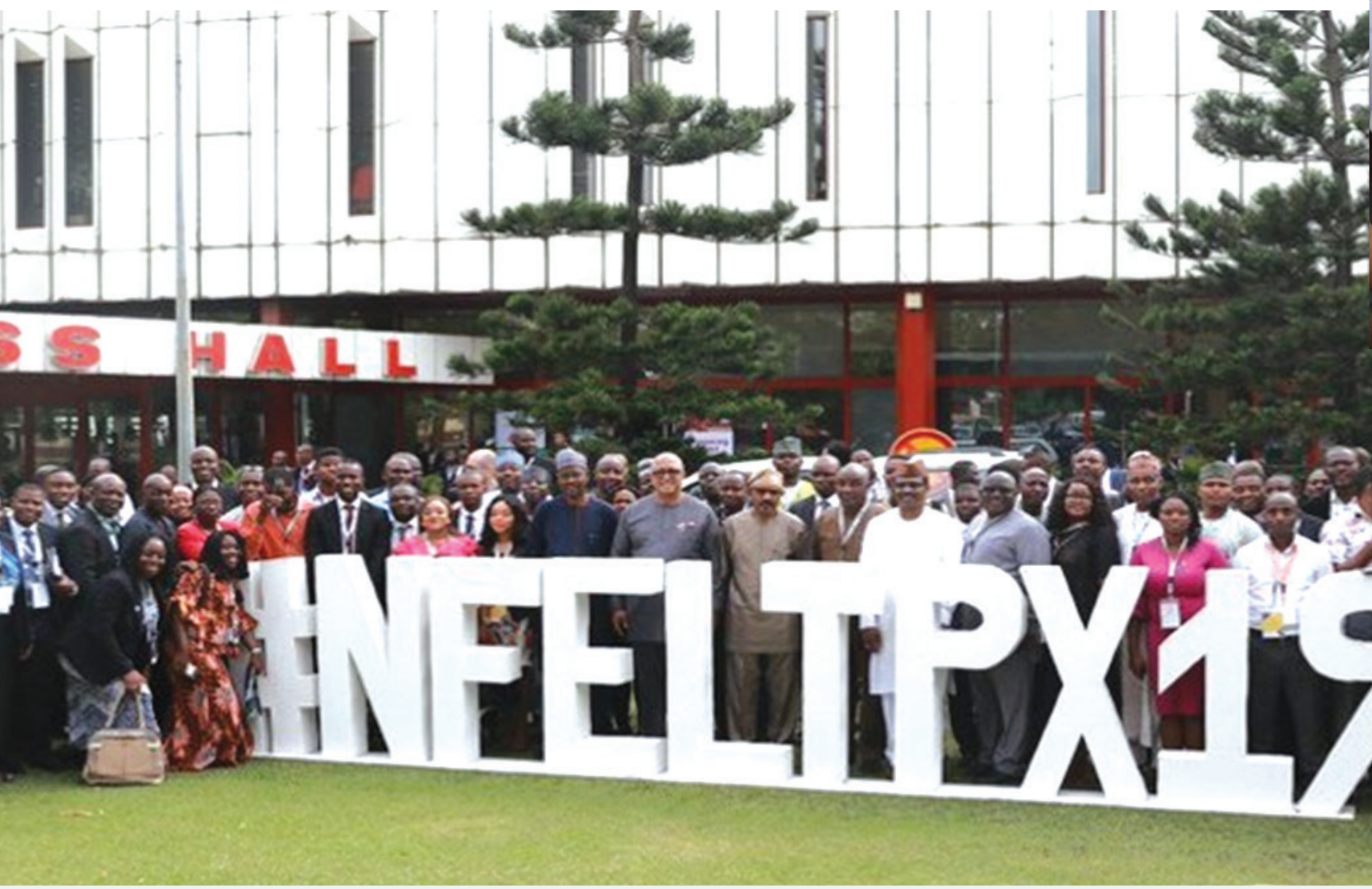
Nigeria Centre for Disease Control (NCDC) commenced activities for the year 2019 having the legal backing of the NCDC Act that was signed into law by President Muhammadu Buhari in November 2018. In January 2019, the Nigeria Centre for Disease Control in collaboration with partners hosted the first ever Lassa Fever International Conference (LIC). This conference brought together over 1000 health workers, scientists, policy makers and leaders from across 20 countries to Abuja. There were over 160 presentations and key note addresses to share knowledge, innovations and reflections, 50 years after the Lassa virus was first discovered. The conference was supported by partners including WHO, Africa CDC, CEPI, FIND, Bernhard Nocht Institute, UK Public Health Rapid Support Team, MSF, UNICEF, AFENET and University of Maryland Baltimore.

9.2 Lassa Fever Research Consortium

On the sidelines of #LIC2019, NCDC established a national Lassa fever Research Consortium. This includes the three main treatment centres, laboratories and institutions working on the virus. NCDC serves as the secretariat for this consortium, which has begun its first major project by implementing a CEPI-funded Lassa fever epidemiology study in Nigeria.

9.3 Signing of MoU with Robert Koch Institute, Resolve to Save Lives (RTSL) & Biomeriéux

NCDC signed formal agreements with the Robert Koch Institute, Resolve to Save Lives and Biomeriéux. NCDC continues to strengthen its partnerships with institutions.

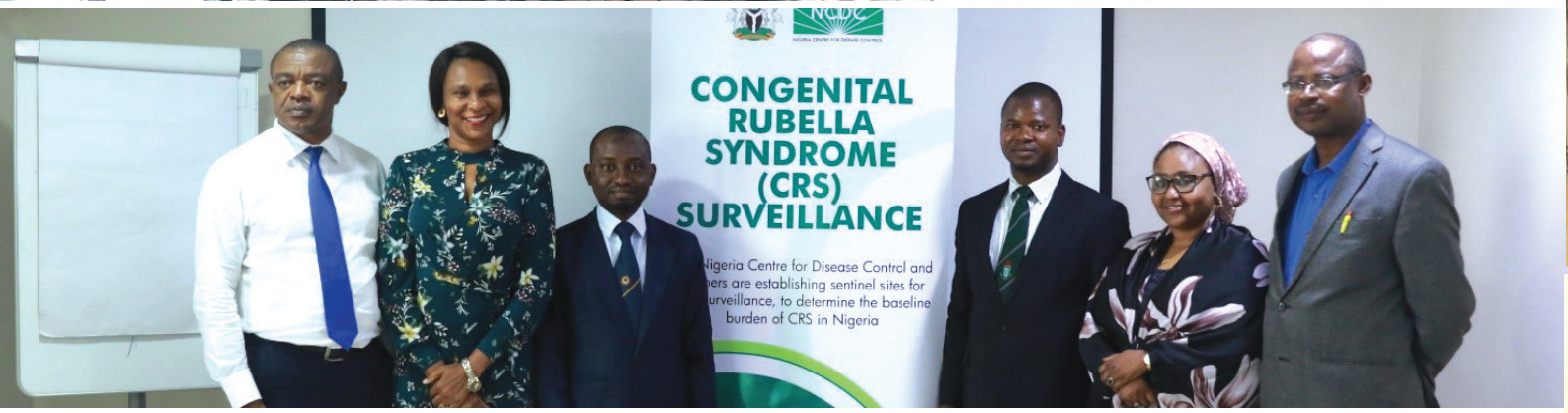


9.4 NFELTP Conference

NCDC and the Nigeria Field Epidemiology and Laboratory Training Programme (NFELTP) hosted the 4th NCDC/NFELTP Annual Scientific Conference in Abuja, with the theme '*Applied Epidemiology: Providing Evidence for Public Health Action.*'

9.5 Strengthening States for Health Security Strategy Launched

NCDC's strategy to strengthen capacities at State level was launched and introduced at the National Executive Council meeting chaired by the Vice President of the Federal Republic of Nigeria.



9.6 Rubella Expert Committee Launch

NCDC began national surveillance for Congenital Rubella Syndrome (CRS), and inaugurated an expert committee to support the implementation of the programme in Nigeria.

9.7 NCDC Strategy Review

Members of staff of NCDC and partners met over three days to review progress of the NCDC Strategy and define priorities for the remaining two years of the strategy.

9.8 NCDC Partners Meeting

NCDC held its first Partners Roundtable, meeting with representatives from over 30 organisations working to support various areas of NCDC's work.

10

WHAT SOME OF OUR STAFF DID IN 2019

10.1 Top Management Leadership and Development Programme at the Lagos Business School: NCDC's Top Management including the Director-General and all Directors were part of a 10-month Executive Leadership and Development Programme at the Lagos Business School, supported by the Gates Foundation and Tony Blair Institute for Global Change

10.2. Three members of staff were selected as Fleming Fund Fellows: Three members of staff – Dr. Abiodun Egwuenu, Emmanuel Benyeogor and Eme Ekeng were selected as part of the first cohort of Fleming Fund Fellows for a one-year fellowship course

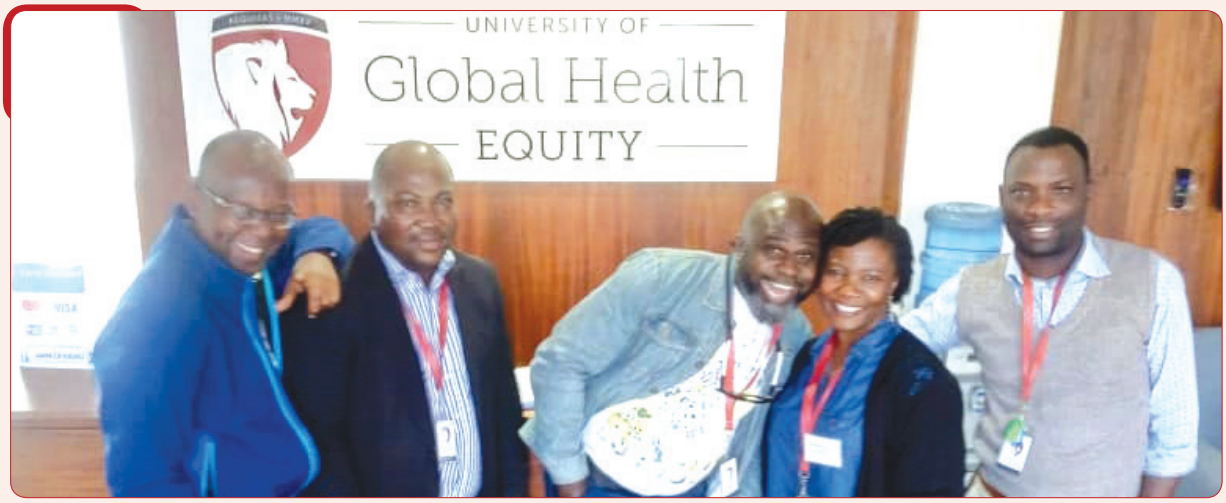
10.3 Two members of staff in Japan for PhD programmes, supported by JICA: Two members of staff- Dr Tosin Afowowe and Dr. Stephen Akar were selected for a fully-funded PhD programme in Japan, supported by JICA

10.4 Selected as Member of the Gates Foundation funded International Program In Public Health Leadership: Dr Oyeladun Okunromade was selected as a Member of the competitive International Program In Public Health Leadership sponsored by the Bill and Melinda Gates Foundation

10.5 Selected as part of the Chatham House Africa Public Health Leaders Fellowship: Dr. Adesola Yinka-Ogunleye was selected as part of the 2018/2019 Chatham House Africa Public Health Leaders Fellowship

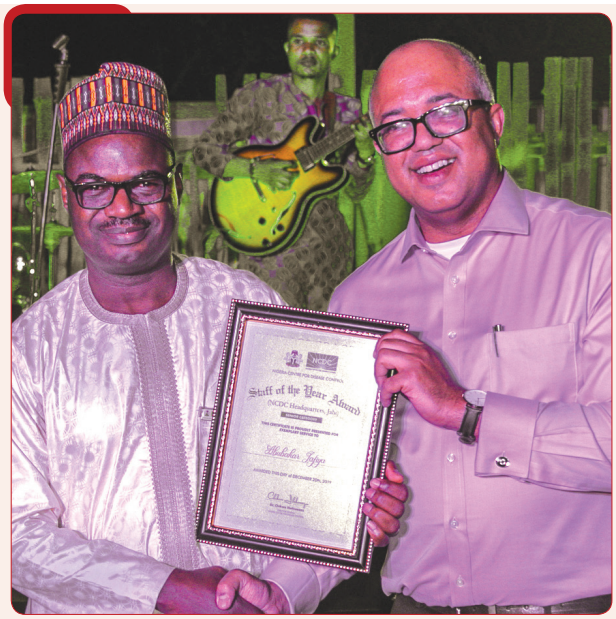
10.6 Selected as part of the US CDC's Public Health Emergency Management Fellowship: Dr Olaolu Aderinola and Womi Eteng were selected as part of the US-CDC's Public Health Emergency Management Fellowship

10.7 Part of Resolve to Save Live's inaugural Program Management for Epidemic Preparedness (PMEP) class: Dr. Kola Jinadu, Dr Olufemi Ayoola, Pharmacist Chibuzo Eneh, Anthony Ahumibe and Olugbenga Akinbiyi were part of Resolve to Save Live's inaugural Program Management for Epidemic Preparedness (PMEP) class in Rwanda



10. 8 Participated in the Federal Ministry of Power, Works and Housing Drivers Training Course: Mr Shehu Mohammed completed and passed a training course organised by the Federal Ministry of Power, Works and Housing for drivers

10.9 Recognised as Staff of the Year: Every year, NCDC awards staff who distinguish themselves in the delivery of our mandate. They are awarded based on commitment to service, punctuality, willingness to support other staff and other criteria. In 2019 the following staff were awarded across our three campuses:



Staff of the Year Award Mid-level Category, NCDC Headquarters – Dr. Jafiyar Abubakar

Staff of the Year Award Mid-level Category, NCDC Headquarters – Anwar Abubakar

Staff of the Year Award Mid-level Category, Transport Officers Category – Mallam Shehu Abubakar

10.9 Recognised as Staff of the Year

Staff of the Year award Senior Category, NRL Gaduwa – Mr. Anthony Ahumibe

Staff of the Year Award Mid-level Category, NRL Gaduwa – Innocent Okoli

CPHL Yaba Staff of the Year – Bukola Aderoju

11

LIST OF PUBLICATIONS IN 2019


rever
miology, Clinical Features, Diagnosis,
nagement and Prevention

Danny A. Asogun, MBBS, FWACP, Stephan Günther, MD,
George O. Akpede, MBBS, FWACP, FCMPaed,
Chikwe Ihekweazu, MBBS, MPH, FFPH,
Alimuddin Zumla, MBChB, MSc, PhD, MD, FRCP(Lond), FRCP(Edin), FRCPath(UK), FAAS

KEYWORDS

• Lassa fever • Epidemiology • Rodents • Clinical features • Diagnosis • Prevention
• Epidemic • Nosocomial transmission

KEY POINTS

• Lassa fever is an acute zoonotic disease of humans endemic to West Africa, caused by the Lassa virus, an enveloped, single-stranded RNA arenavirus.
assa fever outbreaks continue in West Africa with up to 500,000 cases of Lassa fev
nually with 10,000 deaths. Case fatality rates in hospitalized patients is up to 50%
ry infection of humans occurs from contact with Lassa virus-infected rodents
erson-to-person transmission occurs and can be prevented by institu
ntrol measures.
eriod ranges from 2 to 21 days. Initial presentation of L
other febrile illnesses.

TITLE OF PUBLICATION:

Lassa Fever Epidemiology, Clinical Features, Diagnosis, Management and Prevention

AUTHORS:

Danny A. Asogun, Stephan Günther, George O. Akpede, **Chikwe Ihekweazu**, Alimuddin Zumla

JOURNAL/MONTH OF PUBLICATION:

Infectious Disease Clinics of North America. December 2019

DOI: 10.1016/j.idc.2019.08.002

SUMMARY

This publication summarises major findings on Lassa fever epidemiology, clinical features, diagnosis, management and preventive measures

TITLE OF PUBLICATION:

Sequelae of Lassa Fever: Post-viral Cerebellar Ataxia

AUTHORS:

Chiomah Ezeomah, Adeyi Adoga, **Chikwe Ihekweazu,** Slobodan Paessler, Irma Cisneros, Oyewale Tomori, David Walker

JOURNAL /MONTH OF PUBLICATION:

Open Forum Infectious Diseases. December 2019

DOI: https://doi.org/10.1093/ofid/ofz512

SUMMARY

This publication focuses on highlighting the gaps in scientific knowledge where further research is needed, and possible ways of diagnosing postviral ataxia after Lassa fever in resource-limited settings.

TITLE OF PUBLICATION:

Performance of the Public Health System During a Full-Scale Yellow Fever Simulation Exercise in Lagos State, Nigeria, in 2018: How Prepared are We for the Next Outbreak?

AUTHORS:

Oyeladun Funmi Okunromade, Virgil K. Lokossou, Ike Anya, **Augustine Olajide Dada**, Ahmad M. Njidda , **Yahya O. Disu**, **Mahmood Muazu Dalhat**, Carlos Faria De Brito, Muhammad Shakir Balogun, Patrick Nguku, **Olubunmi Eyitayo Ojo**, **Chikwe Ihekweazu**, Stanley Okolo

JOURNAL/MONTH OF PUBLICATION:

Journal of Health Security. November 2019

DOI: *10.1089/hs.2019.0048*

SUMMARY:

In 2018, NCDC in collaboration with WAHO conduced the largest single-disease simulation exercise in Africa. This publication described the yellow fever simulation exercise and its usefulness in understanding public health officials' roles and responsibilities; enabling knowledge transfer among individuals and organizations; and identifying specific strengths and weaknesses in Nigeria's public health system

TITLE OF PUBLICATION:

Lay Media Reporting Of Monkeypox In Nigeria

AUTHORS:

Oyeronke Oyebanji, Ugonna Ofonagoro, Oluwatosin Akande, Ifeanyi Nsofor, Chika Ukenedo, **Tarik Benjamin Mohammed**, **Chimezie Anueyiagu**, **Jeremiah Agenyi**, **Adesola Yinka-Ogunleye**, **Chikwe Ihekweazu**

JOURNAL AND MONTH OF PUBLICATION:

BMJ Global Health. November 2019

DOI: *http://dx.doi.org/10.1136/bmjgh-2019-002019*

SUMMARY

This publication describes the Nigerian media's reporting of the monkeypox outbreak in 2017 and offers recommendations for media reporting of disease outbreaks

TITLE OF PUBLICATION:

A New Twenty-First Century Science for Effective Epidemic Response

AUTHORS:

Juliet Bedford, Jeremy Farrar, **Chikwe Ihekweazu**, Gagandeep Kang, Marion Koopmans and John Nkengasong

JOURNAL/MONTH OF PUBLICATION:

Nature. October 2019.

DOI: https://doi.org/10.1038/s41586-019-1717-y

SUMMARY

This publication by global health leaders including NCDC's Director General posits for an integrated cycle of preparation, response and recovery for epidemic response

TITLE OF PUBLICATION:

Spatiotemporal Analysis of Serogroup C Meningococcal Meningitis Spread in Niger and Nigeria and Implications for Epidemic Response

AUTHORS:

Laura V Cooper, Olivier Ronveaux, Katya Fernandez, Clement Lingani, Kadade Goumbi, **Chikwe Ihekweazu**, Marie-Pierre Preziosi, Antoine Durupt, Caroline L. Trotter

JOURNAL / MONTH OF PUBLICATION:

Journal of Infectious Diseases. October 2019

DOI: https://doi.org/10.1093/infdis/jiz343

SUMMARY:

The publication presents evidence to support a change in methods for epidemic response to meningitis, including lowering the intervention threshold and targeting neighboring districts for reactive vaccination

TITLE OF PUBLICATION:

Descriptive Epidemiology of Cholera Outbreak in Nigeria, January–November, 2018: Implications for The Global Roadmap Strategy

AUTHORS:

Kelly Osezele Elimian, Anwar Musah, Somto Mezue, **Oyeronke Oyebanji, Sebastian Yennan, Arisekola Jinadu, Nanpring Williams, Adesola Ogunleye,** Ibrahima Soce Fall, Michel Yao, **Womi-Eteng Eteng**, Patrick Abok, **Michael Popoola,** Martin Chukwuji, Linda Haj Omar, **Eme Ekeng**, Thieno Balde, Ibrahim Mamadu, Ayodele Adeyemo, Geoffrey Namara, Ifeanyi Okudo, Wondimagegnehu Alemu, Clement Peter & **Chikwe Ihekweazu**

JOURNAL /MONTH OF PUBLICATION: **BMC Public Health. September 2019**

DOI: https://doi.org/10.1186/s12889-019-7559-6

SUMMARY:

This publication presents the epidemiology of the 2018 cholera outbreak in Nigeria from January to November, 2018 and its implications for the global roadmap strategy for cholera which Nigeria is implementing.

TITLE OF PUBLICATION:

Outbreak of Human Monkeypox in Nigeria in 2017–18: A Clinical and Epidemiological Report

AUTHORS:

Adesola Yinka-Ogunleye, Olusola Aruna, **Mahmood Dalhat**, Dimie Ogoina, Andrea McCollum, **Yahyah Disu**, Ibrahim Mamadu, **Afolabi Akinpelu**, **Adama Ahmad**, **Joel Burga**, Adolphe Ndoreraho, Edouard Nkunzimana, Lamin Manneh, **Amina Mohammed**, **Olawunmi Adeoye**, Daniel Tom-Aba, Bernard Silenou, Oladipupo Ipadeola, Muhammad Saleh, Ayodele Adeyemo, Ifeoma Nwadiutor, Neni Aworabhi, Patience Uke, Doris John, Paul Wakama, Mary Reynolds, Matthew R Mauldin, Jeffrey Doty, Kimberly Wilkins, Joy Musa, Asheena Khalakdina, **Adebayo Adedeji**, **Nwando Mba**, **Olubunmi Ojo**, Gerard Krause, **Chikwe Ihekweazu**

JOURNAL AND MONTH OF PUBLICATION: **Lancet Infectious Diseases. July 2019**

DOI: https://doi.org/10.1016/S1473-3099(19)30294-4

SUMMARY:

In 2017, Nigeria recorded the first case of monkeypox, nearly 40 years after the last outbreak. This publication discusses the epidemiological and clinical characteristics of human monkeypox cases that occurred between September 2017 and September 2018.

TITLE OF PUBLICATION:

Participatory Approach to Quality Development in Infection Prevention and Control (IPC) In Nigerian Health Facilities

AUTHORS:

Ute Zocher, **Chioma Dan-Nwafor**, **Disu Yahya**, Okokon Italta, Stefan Kloth, Tim Eckmanns, Karoline Lail, Oberländer, Mohammad Saleh, **Abiodun Ogunniyi**, **Tochi Joy Okwor**, **Joshua Obasanya**, **Chikwe Ihekweazu**, Gabriele Poggensee

JOURNAL /MONTH OF PUBLICATION:

Infection Prevention in Practice June 2019

DOI: https://doi.org/10.1016/j.infpip.2019.100012

SUMMARY:

This publication presents the development of a multi-module training programme for health care workers to improve IPC standards and its implementation, by NCDC and the Robert Koch Institute

TITLE OF PUBLICATION:

Epidemiologic and Clinical Features of Lassa Fever Outbreak in Nigeria, January 1–May 6, 2018.

AUTHORS:

Elsie A. Ilori, Yuki Furuse, Oladipupo B. Ipadeola, **Chioma C. Dan-Nwafor**, **Anwar Abubakar**, **Oboma E. Womi-Eteng**, Ephraim Ogbaini-Emovon, Sylvanus Okogbenin, Uche Unigwe, Emeka Ogah, Olufemi Ayodeji, Chukwuyem Abejegah, Ahmed A. Liasu, Emmanuel O. Musa, Solomon F. Woldetsadik, Clement L.P. Lasuba, Wondimagegnehu Alemu, **Chikwe Ihekweazu** and Nigeria Lassa Fever National Response Team

JOURNAL /MONTH OF PUBLICATION:

Emerging Infectious Diseases June 2019

SUMMARY:

This publication presents the epidemiologic and clinical features of the unprecedented Lassa fever outbreak in Nigeria from January to May 2018

TITLE OF PUBLICATION:

Measures to Control Protracted Large Lassa Fever Outbreak in Nigeria, 1 January - 28 April 2019.

AUTHORS:

Chioma C. Dan-Nwafor, Yuki Furuse, **Elsie A. Ilori,** Oladipupo Ipadeola, **Kachikwulu O. Akabike, Anthony Ahumibe,** Winifred Ukponu, **Lawal Bakare, Tochi J. Okwor, Gbenga Joseph, Nwando G. Mba, Adejoke Akano,** Adebola T. Olayinka, Ihekerenma Okoli, Rita A. Okea, Favour Makava, Nkem Ugbogulu, Saliu Oladele, Geoffrey Namara, Esther N. Muwanguzi, Dhamari Naidoo, Samuel K. Mutbam, Ifeanyi Okudo, Solomon F. Woldetsadik, Clement Lasuba, **Chikwe Ihekweazu**

JOURNAL/MONTH OF PUBLICATION:

Euro Surveillance. May 2019

DOI: 10.2807/15607917.ES.2019.24.20.1900272.

SUMMARY

This publication describes Nigeria's response to the large Lassa fever outbreak in 2019 including the establishment of emergency thresholds to guide declaration of an outbreak and improved guidelines for case management.

TITLE OF PUBLICATION:

Increase in Lassa Fever Cases in Nigeria, January–March 2018

AUTHORS:

Elsie A. Ilori, Christina Frank, **Chioma C. Dan-Nwafor**, Oladipupo Ipadeola, Amrei Krings, Winifred Ukponu, **Oboma E. Womi-Eteng**, Ayodele Adeyemo, Samuel K. Mutbam, Emmanuel O. Musa, Clement L.P. Lasuba, Wondimagegnehu Alemu, Sylvanus Okogbenin, Ephraim Ogbaini, Uche Unigwe, Emeka Ogah, Robinson Onoh, Chukwuyem Abejegah, Olufemi Ayodeji and **Chikwe Ihekweazu**

JOURNAL /MONTH OF PUBLICATION:

Emerging Infectious Diseases Journal. May 2019

DOI: 10.3201/eid2505.181247

SUMMARY:

This publication describes factors that contributed to the 2018 Lassa fever outbreak in Nigeria, using data available through the Nigerian Disease Surveillance System

TITLE OF PUBLICATION:

The 2017 Human Monkeypox Outbreak In Nigeria—Report Of Outbreak Experience And Response in the Niger Delta University Teaching Hospital, Bayelsa State, Nigeria

AUTHORS:

Dimie Ogoina James Hendris Izibewule, **Adesola Ogunleye,** Ebi Ederiane, Uchenna Anebonam, Aworabhi Neni, Abisoye Oyeyemi, Ebimitula Nicholas Etebu, **Chikwe Ihekweazu**

JOURNAL/MONTH OF PUBLICATION:

PLOS ONE. April 2019

DOI: 10.1371/journal.pone.0214229

SUMMARY

The Niger Delta University Teaching Hospital played a key role in the management of monkeypox cases in Nigeria in 2017. This was in close collaboration with NCDC and the Bayelsa State Ministry of Health. This publication reveals gaps in outbreak response and recommendations for hospitals to strengthen epidemic preparedness and response activities

TITLE OF PUBLICATION:

Human Monkeypox: Epidemiologic and Clinical Characteristics, Diagnosis, and Prevention

AUTHORS:

Eskild Petersen, Anu Kantele, Marion Koopmans, Danny Asogun, **Adesola Yinka-Ogunleye, Chikwe Ihekweazu,** Alimuddin Zumla

JOURNAL /MONTH OF PUBLICATION:

Infectious Disease Clinics. March 2019

DOI: 10.1016/j.idc.2019.03.001

SUMMARY:

The NCDC was part of a publication with colleagues from other global health institutions, to review the epidemiology, clinical features, and management of monkeypox and discuss the growing public health threat that the disease presents

TITLE OF PUBLICATION:

A Cluster of Nosocomial Lassa Fever Cases in a Tertiary Health Facility in Nigeria: Description and Lessons Learned, 2018

AUTHORS:

Chioma C. Dan-Nwafor, Oladipupo Ipadeola, Elizabeth Smout, **Elsie Ilori,** Ayodele Adeyemo, Chukwuma Umeokonkwo, Damian Nwidi, **Williams Nwachukwu**, Winifred Ukponu, Emeka Omabe, Uchenna Anaebonam, Nneka Igwenyi, **Gordon Igbodo, Womi Eteng, Ikemefule Uzoma**, Muhammed Saleh, Joseph Agboeze, Samuel Mutbam, **Chikwe Ihekweazu**

JOURNAL/MONTH OF PUBLICATION:

International Journal of Infectious Diseases. March 2019

DOI: 10.1016/j.ijid.2019.03.030

SUMMARY

The publication describes a cluster of Lassa fever infections among Health care workers in a treatment centre during an outbreak in 2018, infection prevention control interventions and recommendations for future outbreaks.

TITLE OF PUBLICATION:

Sharing Experiences from the Field: Updates from the Nigeria Field Epidemiology and Laboratory Training Program

AUTHORS:

Patrick Mboya Nguku, Chukwuma David Umeokonkwo, Muhammad Shakir Balogun, Ndadilnasiya Endie Waziri, Adebobola Toluwalashe Bashorun, Godwin Ntadom and **Chikwe Ihekweazu**

JOURNAL/MONTH OF PUBLICATION:

The Pan African Medical Journal. January 2019

DOI: 10.11604/pamj.supp.2019.32.1.18136

SUMMARY

The publication describes outbreak investigations and studies carried out by Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) residents, as a way of disseminating important public health findings

12

NCDC'S PARTNERS


World Health Organization
AFRICA CDC
Centres for Disease Control and Prevention
Safeguarding Africa's Health
CEDEAO
OOAS
WAHO
ECOWAS
CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION
RESOLVE
TO SAVE LIVES
AFENET
African Field Epidemiology Network
A healthier Africa
WORLD BANK
TONY BLAIR
INSTITUTE
FOR GLOBAL
CHANGE


ROBERT KOCH INSTITUT
Public Health England
BILL & MELINDA GATES foundation
JICA
giz
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
msh
Management Sciences for Health
WRAIR
Walter Reed Army Institute of Research
Soldier Health • World Health
MEDECINS SANS FRONTIERES

GEORGETOWN UNIVERSITY

The Fleming Fund

13

2020 TARGETS

In 2020, we will focus on supporting all 36 states in Nigeria and the Federal Capital Territory, in strengthening their sub-national capacity.

Our major priorities are to:

1. **Support states in developing a coordination platform for preparedness and response to infectious disease outbreaks through establishment of State Public Health Emergency Operations Centres (EOCs)**

2. **Support states in deploying and using Surveillance Outbreak Response Management Analysis System (SORMAS) as the digital tool for case-based surveillance of communicable diseases**

3. **Support states in developing capacity to carry out basic public health diagnosis for diseases of public health importance, through establishment of public health laboratories**

4. **Support states in establishing Rapid Response Teams (RRTs)**

5. **Support states in developing a network for communication and collaboration among each other**

NOTES

NOTES

NIGERIA CENTRE FOR DISEASE CONTROL

Plot 801 Ebitu Ukiwe Street, Jabi Abuja, Nigeria

0800 970 0010 (Toll-Free Call Number)

SMS 0809 955 5577 0708 711 0839

info@ncdc.gov.ng

@ncdcgov

ncdc.gov.ng