JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

FEDERAL REPUBLIC OF NIGERIA

Mission report:
June 11-20, 2017

World Health Organization

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Contents

ACKNOWLEDGEMENTS

Abbreviations

AFENET	African Field Epidemiology Network
AFP	acute flaccid paralysis
AMR	antimicrobial resistance
ASLM	African society for laboratory medicine
ARIS	Animal Resources Information System
BSL	Biosafety level
CSM	Cerebrospinal meningitis
EBS	Event based surveillance
EOC	Emergency Operations Centre
EQA	External quality assurance
EVD	Ebola virus disease
FAO	Food and Agriculture Organization of the United Nations
FMOH	Federal Ministry of Health
FMARD	Federal Ministry of Agriculture and Rural Development
NPHCDA	National Primary Health Care Development Agency
FCT	Federal Capital Territory
FG	Federal Government
GLASS	Global antimicrobial resistance surveillance system
HCAI	Health-care associate infections
HIV	Human immunodeficiency Virus
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IPC	Infection prevention and control
LGA	Local Government Area
MAKIA	Mallam Aminu Kano International Airport
MMIA	Murtala Mohammed Airport
MOU	Memorandum of Understanding
NAIA	Nnamdi Azikiwe International Airport
NADIS	National Animal Disease Information and Surveillance
NAP	National Action Plan
NAFDAC	National Agency for Food and Drug Administration and Control
NCDC	Nigeria Centre for Disease Control
NEMA	National Emergency Management Agency
NFELTP	Nigeria Field Epidemiology and Laboratory Training Programme

NFETP	Nigeria Field Epidemiology Training Programme
NFP	National Focal Point
NFSMC	National Food Safety Management Committee
NNRA	Nigerian Nuclear Regulatory Authority
OIE	World Organisation for Animal Health
PCR	Polymerase Chain Reaction
PHC	Primary Health Care
PHEs	Public Health Emergencies
PoEs	Points of Entry
RRTs	Rapid Response Teams
SANAS	South African National Accreditation System
SOPs	Standard Operating Procedures
TB	Tuberculosis
VHF	Viral Haemorrhagic Fever
WAHIS	World Animal Health Information System
XDR	Extensively drug-resistant tuberculosis

Executive summary

Findings from the joint external evaluation

Nigeria has made commendable progress in the broad area of prevent but will need additional investments to move to a higher level:

- A top priority is to fast track the legislation, regulatory and policy frameworks to support IHR implementation at the Federal, State, and Local Government levels

- A critical piece of legislation is the finalization of the legislative approval for the Nigeria Centre for Disease Control (NCDC)

- To support implementation of "the One health approach" there is a need to establish a multi-sectoral, multi-disciplinary coordination mechanism (political and technical) at Federal Government, State and Local Government Area levels

Nigeria has made tremendous progress in bio-surveillance for vertical diseases such as polio, TB, HIV/AIDs, but will need additional efforts to:

- Strengthen laboratory capacity, especially specimen shipping, transportation and referral

- Scale up, enhance and sustain the Integrated Disease Surveillance and Response (IDSR) programme nation-wide at all levels (FG, State, LGA, PHC facilities), capitalizing on the polio investments

- Develop and implement a comprehensive public health workforce strategy

Nigeria has made tremendous progress in response to PHEs-Ebola, Lassa Fever, Meningitis, Cholera etc. but will need additional efforts to:

- Formulate, cost, implement, monitor and evaluate a national action plan for health security that is aligned with sector strategies, addresses all hazards and is based on a comprehensive risk assessment and mapping

- Enhance the EOC/IMS system at federal level and strengthen sub-national RRTs supported by an all hazard risk communication strategy/plan

- Strengthen inter-sectoral collaboration for emergency response particularly between human and animal health, the environmental sectors and security agencies underpinned on an all hazards approach

Nigeria has several PoEs that are already doing commendable routine (screening, have holding areas) and emergency actions, etc. Major setback is not officially designating the PoE:

- Designate, before the end of 2017, a few PoEs-Airports, Ports and some ground crossings
  - Airports
    - Abuja International Airport
    - Lagos International Airport
    - Kano International Airport
  - Lagos Sea Port
  - High volume ground crossings
    - Benin border
    - Cameroun border
    - Niger border

- Finalise Public Health contingency plan for PoEs that is linked to the national plan for health security
- Establish and sustain capacities for routine and emergency preparedness and response for the designated PoEs

Federal Republic of Nigeria scores

Technical areas	Indicators	Score
National legislation, policy and financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005)	1
	P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with IHR (2005)	1
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	2
Antimicrobial resistance	P.3.1 Antimicrobial resistance detection	2
	P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens	2
	P.3.3 Health care-associated infection (HCAI) prevention and control programmes	2
	P.3.4 Antimicrobial stewardship activities	2
Zoonotic diseases	P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	2
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	1
Food safety	P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases	2
Biosafety and biosecurity	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	1
	P.6.2 Biosafety and biosecurity training and practices	1
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	3
	P.7.2 National vaccine access and delivery	4
National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	3
	D.1.2 Specimen referral and transport system	1
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	2
	D.1.4 Laboratory quality system	2
Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Integration and analysis of surveillance data	3
	D.2.4 Syndromic surveillance systems	3
Reporting	D.3.1 System for efficient reporting to FAO, OIE and WHO	3
	D.3.2 Reporting network and protocols in country	2
Workforce development	D.4.1 Human resources available to implement IHR core capacity requirements	3
	D.4.2 FETP[1] or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	2
Preparedness	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	1
	R.1.2 Priority public health risks and resources are mapped and utilized	1

[1]   FETP: Field epidemiology training programme

Emergency response operations	R.2.1 Capacity to activate emergency operations	2
	R.2.2 EOC operating procedures and plans	2
	R.2.3 Emergency operations programme	3
	R.2.4 Case management procedures implemented for IHR relevant hazards.	2
Linking public health and security authorities	R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	1
Medical countermeasures and personnel deployment	R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency	1
	R.4.2 System in place for sending and receiving health personnel during a public health emergency	1
Risk communication	R.5.1 Risk communication systems (plans, mechanisms, etc.)	1
	R.5.2 Internal and partner communication and coordination	3
	R.5.3 Public communication	2
	R.5.4 Communication engagement with affected communities	3
	R.5.5 Dynamic listening and rumour management	3
Points of entry	PoE.1 Routine capacities established at points of entry	1
	PoE.2 Effective public health response at points of entry	1
Chemical events	CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies	1
	CE.2 Enabling environment in place for management of chemical events	2
Radiation emergencies	RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment in place for management of radiation emergencies	3

PREVENT

National legislation, policy and financing

Introduction

The International Health Regulations (IHR) (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if a new or revised legislation may not be specifically required, states may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance in a more effective manner. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in their implementation. See detailed guidance on IHR (2005) implementation in national legislation at http://www.who.int/ihr/legal_issues/legislation/en/index.html. In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

Target

Adequate legal framework for States Parties to support and enable the implementation of all their obligations, and rights to comply with and implement the IHR (2005). New or modified legislation in some States Parties for implementation of the IHR (2005). Where new or revised legislation may not be specifically required under the State Party's legal system, States may revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner. States Parties ensure provision of adequate funding for IHR implementation through the national budget or other mechanism.

Nigeria level of capabilities

The Federal Republic of Nigeria has enacted several laws which address health care and public health and specifically facilitate the implementation of IHR (2005). These laws address basic public health functions including surveillance, response, quarantine, food safety, and agricultural trade. Nigeria has at least ten national laws, guidelines, or policies, as well as one regional agreement with five neighbouring countries, which establishes a platform for regional collaboration in disease control. Some of the laws, regulations, policies and guidelines include:

1. The Quarantine Act of 1926

2. The 1999 constitution of Federal Republic of Nigeria (Sec. 169 of)

3. National Health Act 2014.

4. Decree No. 29 of the Federal Republic of Nigeria (established the NPHCDA 1992)

5. National guideline for Poison, information, control and management centres

6. National policy on Food Safety and its Implementation strategy 2014.

7. Veterinary surgeons Act 2014, cap V3 Laws of the Federation of Nigeria 2004 as amended

8. The Animal Disease Act 2004.

9. IHR through IDSR Guidelines

While these laws or guidelines are important, the administrative and political structure of the country complicates the implementation of the laws at all the three levels of governance. The administrative semi-autonomy of the states has established an additional layer that often encumbers the application of laws, regulation, guidelines and other instruments addressing IHR. It is also noted that some laws and regulations were enacted many years back, and do not address the prevailing public health environment. It is also acknowledged that specific public health capacities have not consistently resulted from the passage and application of these laws. In particular, clarity on public health authority, technical independence, and dedicated funding mechanisms are absent from an assortment of national public health laws ultimately jeopardizing successful fulfilment of various institutions' vision and goals. This reality most notably impacts the Nigeria Centre for Disease Control, which currently operates without a legislative mandate.

As a best practice some states have robust public health legislation and policies which result in the establishment of a favourable public health environment and dedicated public health funding mechanisms. Unfortunately, this best practice is absent from the national level. Additional strengths were noted in the application of the IDSR framework as a foundation for surveillance and response activities throughout the country.

Recommendations for priority actions

The country's priority actions are:

- Conduct a comprehensive assessment of existing legislative and policy frameworks to identify gaps that impede compliance with the International Health Regulations.

- Advocate for revision of legal instruments and policies to address existing gaps and challenges within the national administrative environment.

- Completion of pending legislative actions ("Nigeria Centre for Disease Control Bill" and the "Health Bill of 2013") in order to give key public health institutions (e.g. Nigeria Centre for Disease Control) the legal mandate needed to accomplish national goals.

- National government should articulate specific policies, guidance, and guidelines to States and Local Government Areas regarding obligations, roles and responsibilities to increase their respective ownership and implementation of the provisions of the National Health Act, and for accountability in allocation and application of resources for public health in line with the Basic Health Provision Fund (2014).

- Streamline roles and responsibilities in the various Ministries and Agencies that have responsibilities in IHR implementation to minimize duplication within their respective mandates.

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005) – Score 1

Strengths/best practices
- The country has diverse legislation, other legal instruments and policies in place that facilitate the implementation of the IHR (2005)and officials are thoroughly versed in these legislative acts and policies which govern public health activity in Nigeria.

- Nearly every health-related sector (primary health care, surveillance, response, quarantine, food safety, environment, and agriculture) is represented within a particular guideline, policy, bill, or legislative act.

- As new health management structures are established to address evolving needs (such as the NCDC), the country is enacting appropriate laws to empower these structures. The recent designation of NCDC (the country's national public health institute) as the IHR National Focal Point is timely to ensure coordination of health securities in Nigeria is domiciled in one government agency as it is recommended that IHR is implemented within IDSR.

- Nigeria is a signatory to a cross-border agreement with five neighbouring countries that allows for communication and coordination during public health events. This has facilitated regional engagement to address public health priorities.

- The Federal Government has directly and indirectly mobilised funds for the implementation of public health activities in the country. States too are variably financing public health activities, with some states providing appreciable resources.

Areas that need strengthening and challenges

- Nigeria has not yet conducted an assessment of the enumerated documents to determine whether these instruments are sufficient to achieve IHR compliance. This exercise would provide an opportunity to establish all existing constitutional and other legal instruments, decrees and policies that empower or impede the implementation of IHR, and identify existing gaps and remedies.

- A number of the legal instruments and policies are old and need review. It is also evident that a number of laws, including the bill that establishes the NCDC are still undergoing enactment. There is therefore the need to complete this process, and while doing so, ensure the enacted laws address prevailing needs.

- Where laws, policies and guidelines exist, there are challenges in their application and enforcement across the three tiers of governance owing to the semi-autonomous nature of the sub-national tiers. This calls for concerted efforts to address administrative issues that impede the seamless application of laws, policies and guidelines

P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) – Score 1

Strengths/best practices

- Among the most noteworthy best practices observed in Nigeria is the existence of a national public health institute [Nigeria Centre for Disease Control (NCDC)] that was recently designated as the National IHR Focal Point. This designation further increases the visibility of the IHR, as the NCDC, which currently functions as the centre of Nigeria's public health infrastructure, is better placed to lead the country's progress towards full IHR compliance. Additionally, the Integrated Disease Surveillance and Response Guidelines, which were revised in 2013 have been used by the NCDC to conduct surveillance and response activities in the country.

- The country has successfully applied public health laws and regulations in certain States, which have prioritized financial allocations for public health.

- Another strength identified is the successful multi-sector coordination that occurs episodically during public health events, most notably demonstrated in the rapid interruption of Ebola viral haemorrhagic fever transmission in 2014.

Areas that need strengthening and challenges

- Although a formal assessment of national legislation and policies has not been carried out, Nigeria public health leaders were able to describe the impact of gaps in State and LGA ownership and accountability that result, in part, because the National Health Act (2014) lacks clear directives to the sub-national administrative levels to prioritize contributions to the Basic Health Provision Fund.

- Other national agencies arising from legislative acts also remain under-funded and without the authorities necessary to impact policy (this includes the Poison, Information, Control and Management Centre and the National Primary Healthcare Development Agency).

- The NCDC itself, other than its designation as an IHR National Focal Point, is without a specific legislative mandate.

- Additionally, across the various government sectors which have public health responsibilities, few agreements or memoranda exist to harmonize efforts and minimize duplication.

- It is notable too that the revision of existing laws, policies and guidelines and enactment of new ones is not informed by assessments that objectively ascertain existing gaps.

IHR coordination, communication and advocacy

Introduction

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient and alert response systems. Coordination of nationwide resources, including the designation of a national IHR focal point, which is a national centre for IHR communications, is a key requisite for IHR implementation.

Target

Multisectoral/multidisciplinary approaches through national partnerships that allow efficient, alert and responsive systems for effective implementation of the IHR (2005). Coordinate nationwide resources, including sustainable functioning of a national IHR focal point – a national centre for IHR (2005) communications which is a key requisite for IHR (2005) implementation – that is accessible at all times. States Parties provide WHO with contact details of national IHR focal points, continuously update and annually confirm them.

Nigeria level of capabilities

The Nigeria Centre for Disease Control and Prevention (NCDC) became the NFP in 2011, transferring from the Federal Ministry of Health. The NCDC has assumed the responsibility for leading and coordinating efforts to detect and respond to outbreaks including public health events of international concern. Although legislation specifying NCDC's responsibilities, including NCDC's role as the NFP, has been written, the legislation has not yet been codified, creating challenges for NCDC in carrying out its responsibilities.

However, coordination mechanisms exist across the relevant sectors, governed by standard operating procedures and communication protocols. Multi-sectoral stakeholders have been identified at the federal and state levels of the health system to ensure a One Health, and all hazards, approach to IHR. Each stakeholder has a designated focal point responsible for engagement with the NFP at NCDC. However, a formally-defined One Health multi-sectoral platform for coordination of public health responses, and for after-action review of such responses, does not exist. While such a formal platform does not exist, experiences has been gained through several recent outbreak responses, including Ebola, Lassa fever, Avian Influenza and meningococcal meningitis.

Recommendations for priority actions

- Establish legislative foundation for NCDC as NFP.

- Establishment of a One Health platform for intersectoral collaboration of outbreak responses that involve the human and animal sectors.

- Develop all hazard standard operational procedures for IHR coordination between IHR NFP and stakeholders.

Indicators and scores

P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR – Score 2

Strengths/best practices

- Standard operating procedures or equivalent exist to guide coordination between the IHR NFP and relevant sectors.

- Annual updates on the status of IHR implementation have been published since 2010.

- Nigeria NFP is a recognized leader in West Africa.

- Mature Nigeria Field Epidemiology and Laboratory Training Programme (NFELTP).

Areas that need strengthening and challenges

- Since there is limited interaction been human and animal health sectors, need to establish One Health, multi-sectoral group for IHR.

- Delay in passage of the legislation establishing NCDC.

- An information exchange system for communication between the relevant stakeholders as not been developed.

Antimicrobial resistance

Introduction

Bacteria and other microbes evolve in response to their environment and inevitably develop mechanisms to resist being killed by antimicrobial agents. For many decades, the problem was manageable as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade, however, this problem has become a crisis. Antimicrobial resistance is evolving at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.

Target

Support work coordinated by FAO, OIE and WHO to develop an integrated global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a One Health approach). Each country has: (i) its own national comprehensive plan to combat antimicrobial resistance; (ii) strengthened surveillance and laboratory capacity at the national and international levels following international standards developed as per the framework of the Global Action Plan; and (iii) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid point-of-care diagnostics, including systems to preserve new antibiotics..

Nigeria level of capabilities

Nigeria submitted a National Action Plan (NAP) for AMR to WHO in May 2017. The NAP was developed according to the One Health approach, however the One Health components of the NAP are not well developed. Furthermore, the NAP has yet to be implemented. Nigeria participates in the WHO GLASS surveillance programme. Nigeria has identified an interim AMR National Reference Laboratory, but this laboratory only receives bacteria isolated from humans; national reference laboratories for bacteria from animals or from food are not yet established. Nigeria is establishing an AMR surveillance system; nine sentinel laboratories from several locations in Nigeria have been identified for the AMR surveillance system. These laboratories are being trained and equipped, but participation in surveillance has not yet begun.

Although a law was recently enacted requiring that antimicrobials used in humans be available only by prescription, antimicrobial stewardship in Nigeria is relatively limited. Antimicrobials are widely used in food animals and available without prescription or veterinary oversight. Furthermore, data is lacking on antimicrobial use in humans and animals. Infection prevention and control (IPC) procedures and programmes are not well developed in Nigeria. There is a Nigeria IPC policy, and IPC training is occurring across the country. This approach needs to be scaled up to the private sector and community levels across the country, so capacity can be further strengthened.

Recommendations for priority actions

- Implement the Nigeria National Action Plan on AMR.
- Strengthen the "One Health" components in the Nigeria National Action Plan on AMR.
- Strengthen stewardship on antimicrobial use in humans and food animals.

PREVENT

Indicators and scores

P.3.1 Antimicrobial resistance detection – Score 2

Strengths/best practices

- A National Action Plan on AMR, with a One Health approach, was developed, approved, and submitted to WHO in May 2017.
- An AMR National Reference Laboratory, though interim, has been designated and nine sentinel laboratories for AMR surveillance among selected pathogens have been identified.

Areas that need strengthening/challenges

- The AMR National Reference Laboratory only receives bacteria isolated from humans; there is no reference laboratory for bacteria isolated from animals or from food.
- Information about the various laboratories' capability to test for AMR is lacking. Furthermore, a network for laboratories conducting AMR surveillance is yet to commence .
- AMR surveillance has not yet begun, therefore AMR data still needs to be collected, analyzed. interpreted, reported and published.

P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens – Score 2

Strengths/best practices

- The National Action Plan on AMR includes surveillance for human infections caused by AMR pathogens.
- Nigeria is enrolled in the WHO GLASS surveillance network for AMR.
- A situation analysis which details the most common human pathogens, and prevalence of resistance patterns of these pathogens, has been conducted.

Areas that need strengthening/challenges

- No food chain sources are included in the AMR surveillance.
- Furthermore, figures on the number of different livestock in Nigeria are unreliable and need to be updated.

P.3.3 Health care-associated infection (HCAI) prevention and control programmes – Score 2

Strengths/best practices

- There is an approved national IPC and prevention of healthcare associated infections.
- The TB and HIV control programmes have IPC policies and incorporate IPC into activities.
- The TB control programme guidelines for screening of health workers (XDR) and TB treatment centres have HCAI guidelines.
- The HIV control programme conducts population-based surveys to detect HCAI within high-risk groups and conducts Integrated Biological and Behavioural Surveillance Survey every 4 years.

Areas that need strengthening/challenges

- Nigeria has different programmes with different IPC policies, thus harmonization is needed.
- There is currently no information on availability and implementation of IPC at hospitals nor on number of trained IPC professionals. Furthermore there is no national system for evaluating IPC measures.
- Information on the number of tertiary health facilities with isolation units is lacking.

P.3.4 Antimicrobial stewardship activities – Score 2

Strengths/best practices

- The National Action Plan includes a component on antimicrobial stewardship.

- There is a legal requirement to have a prescription for antimicrobial use in humans.

- No best practices in regard to antimicrobial stewardship were identified.

Areas that need strengthening/challenges

- Data on antimicrobial use, including prescription patterns, are lacking - for both humans and food animals.

- The enforcement of the need for a prescription for antimicrobial use in humans is lacking.

- There is no requirement that antimicrobials used in animals be available only by prescription and therefore antimicrobials are widely available, over the counter, for use in animals.

PREVENT

Zoonotic diseases

Introduction

Zoonotic diseases are communicable diseases that can spread between animals and humans. These diseases are caused by viruses, bacteria, parasites and fungi carried by animals, insects or inanimate vectors that aid in its transmission. Approximately 75% of recently emerging infectious diseases affecting humans is of animal origin; and approximately 60% of all human pathogens are zoonotic.

Target

Adopted measured behaviors, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.

Nigeria level of capabilities

The majority of emerging diseases in humans are zoonotic. It is likely that zoonotic diseases will continue to emerge in areas where human population is dense and biodiversity is high, as in parts of Nigeria. The diverse and complex ecosystems in Nigeria facilitate the human–animal interface and predispose humans and animals to be at risk for zoonotic diseases. Nigeria has focused activities on six zoonotic diseases of particular interest: anthrax, avian influenza, brucellosis, bovine tuberculosis, Lassa fever, and rabies. However, a formal process has not been conducted for identification of the top priority zoonotic diseases through a "One Health" deliberation process, with input and participation in priority setting by the human and veterinary medicine communities, and public health and agriculture sectors.

The following potential zoonotic diseases in humans are reported weekly through the national Integrated Disease Surveillance and Response System: acute haemorrhagic fever syndrome, anthrax, Lassa fever, yellow fever, plague, and rabies. Potential zoonotic diseases in animals are also reported intermittently to the Ministry of Agriculture. Nigeria operates the National Animal Disease Information and Surveillance (NADIS) system for reporting of transboundary animal diseases, which includes avian influenza. Neither event-based nor syndromic surveillance is well established in the animal health sector. There is no routine sharing of surveillance information about zoonotic diseases between the Ministry of Health and the Ministry of Agriculture. The laboratory system in the Ministry of Agriculture is less developed, with limited laboratory confirmation of outbreaks of zoonotic diseases. Furthermore, laboratory information or specimens related to zoonotic diseases are not routinely shared between the Ministry of Health and Ministry of Agriculture.

The veterinary public health workforce is enhanced by the participation of veterinarians in two programmes of the Nigeria Field Epidemiology Training Programme (NFELTP): the 2-year advanced Field Epidemiology Training Programme (FETP) course which includes a master's degree, and the 3-month FETP frontline course. Since the establishment of the NFELTP advanced course in 2008, 14% (54 of 374) FETP graduates have been veterinarians. Since the launch of the FETP frontline training in 2006, 27 veterinarians have been trained in FETP frontline. Many of the veterinarians that have graduated from FETP advanced and frontline courses are employed by the Ministry of Agriculture at the national and state level.

A number of agencies are involved in zoonotic disease-related issues including: (1) the Department of Public Health of the Federal Ministry of Agriculture, (2) Department of Public Health, Port Health Services of the Federal Ministry of Health, (3) Nigeria Centre for Disease Control (4) Veterinary Council of Nigeria, (5) National Agricultural Quarantine Services, and (6) National Veterinary Research Institute. However, there are no formal, routinely scheduled meetings between the public health and animal health sectors to share information or collaborate. When a zoonotic disease outbreak is reported, joint outbreak investigations

from both sectors may be undertaken but there is no formal policy, strategy or plan for responding to zoonotic outbreaks.

Recommendations for priority actions

- Enhance collaboration between Ministry of Health and Ministry of Agriculture at the national, state and district levels.

- Strengthen linkage between public health and animal health laboratories.

- Enhance surveillance of zoonotic diseases by holding a meeting of appropriate stakeholders to identify the top priority zoonotic diseases to include in zoonotic disease surveillance system

Indicators and scores

P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens – Score 2

Strengths/best practices

- Nigeria Integrated Disease Surveillance and Response (IDSR) in the Ministry of Health/NCDC is well established and routinely includes information of human cases of a limited number zoonotic diseases.

- The National Animal Disease Information System (NADIS) is established in the Ministry of Agriculture.

- Surveillance for avian influenza among poultry is established.

- Surveillance and public health management of dog bites, including testing of dogs for rabies, is available.

- Situational awareness reports produced such as quarterly newsletter by FMARD and Nigerian Agricultural Quarantine services and the Weekly Epidemiological Report by NCDC.

Areas that need strengthening/ challenges

- The highest priority zoonotic diseases for surveillance have not been formally identified through a One Health approach involving input from both the Ministry of Health and Ministry of Agriculture.

- A robust surveillance system for the highest priority zoonotic diseases in animals is lacking in the Ministry of Agriculture.

- There is no routine forum or formal mechanism for sharing of results, surveillance data, reports or laboratory specimens between the Ministry of Agriculture and the Ministry of Health.

P.4.2 Veterinary or animal health workforce – Score 3

Strengths/best practices

- The NFELTP that is part of AFENET (African Field Epidemiology Network) is well established and has trained a large number of veterinarians in the FETP advanced and Frontline training programmes.

- Public health training of veterinarians is also conducted by McArthur Foundation and Veterinary Council of Nigeria.

- Veterinarians trained in public health, including graduates of NFELTP programmes, are employed by the Ministry of Agriculture at the national and state levels.

Areas that need strengthening/challenges

- Given the large size of Nigeria, more veterinarians at central, state and district levels need to be trained in public health through the FETP advanced and Frontline programmes.

- To meet the goal of having a trained veterinarian at all district levels, FETP of veterinarians is particularly needed for veterinarians from district and state levels.

P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases established and functional – Score 1

Strengths/best practices

- Joint field investigations of outbreaks of zoonotic diseases, including Lassa fever and rabies, have been conducted, particularly by the NFELTP, and have included veterinarians.

- A policy document and a response plan exists for Avian Influenza.

- Rabies guidelines have been developed and are awaiting approval

Areas that need strengthening/challenges

- Policy documents and response plans for selected priority zoonotic diseases are needed.

- Enhanced capacity for timely and coordinated intersectoral outbreak response and field investigations for priority zoonotic diseases is needed.

Food safety

Introduction

Food- and water-borne diarrhoeal diseases are leading causes of illness and death, particularly in less developed countries. The rapid globalization of food production and trade has increased the potential likelihood of international incidents involving contaminated food. The identification of the source of an outbreak and its containment is critical for control. Risk management capacity with regard to control throughout the food chain continuum must be developed. If epidemiological analysis identifies food as the source of an event, based on a risk assessment, suitable risk management options that ensure the prevention of human cases (or further cases) need to be put in place.

Target

Surveillance and response capacity among States Parties for food- and water-borne disease risks or events by strengthening effective communication and collaboration among the sectors responsible for food safety, and safe water and sanitation..

Nigeria level of capabilities

The National Food Safety Management Committee (NFSMC) and Interministerial Committee on Food Safety were established with the approval of the National Policy on Food Safety and Its Implementation Strategy in 2016 by the National Health Council. The NFSMC is statutorily composed of over 30 stakeholders, both public and private, obligated to coordinate food safety risk profiling and management across all sectors. The NFSMC and Interministerial Committee on Food Safety have validated and adopted the National Food Safety and Quality Bill and Food Safety Institutional Reform Framework for transmission to the Federal Executive Council. The NFSMC has been organized and is supposed to develop a plan together with NCDC for food safety emergency response including outbreak investigation and recalls, but this has not yet been implemented. Governmental authorities involved in food safety include: (1) Federal Ministry of Health (FMOH), particularly the National Agency for Food and Drug Administration and Control and the NCDC, (2) Federal Ministry of Agriculture and Rural Development (FMARD), particularly the Federal Department of Agriculture, and Veterinary and Pest Control Services, (3) Federal Department of Fisheries, (4) Federal Ministry of Environment, (4) Federal Ministry of Industry, Trade and Investment, particularly Standard Organization of Nigeria, (5) Federal Ministry of Science and Technology, and (6) Nigerian Institute of Food Science and Technology.

The National Agency for Food and Drug Administration and Control is responsible for food regulation. It has implemented a structured food inspection and control system, particularly in food manufacturers producing pre-packaged foods and for importation of pre-packaged foods. It also serves as the International Food Safety Authorities Network (INFOSAN) Emergency Contact Point for Nigeria. An additional INFOSAN Contact Point for Nigeria is based in FMOH. The National Agency for Food and Drug Administration and Control provides food safety information to stakeholders across the "farm-to-fork" continuum including to food manufacturers, restaurants, caterers and veterinary services. It also conducts risk profiling of food safety problems to help identify opportunities for authorities to implement appropriate risk management measures. It has authority over meat inspection, but there is minimal oversight in the largest slaughterhouses. If animals are slaughtered for meat in a smaller facility, the facility is typically not inspected and generally has minimal access to running water and appropriate waste disposal products.

Public health surveillance for diarrheal diseases, cholera and typhoid, which may be foodborne, is included in the national IDSR system. There is no formal system, however, for reporting foodborne outbreaks specifically. When foodborne outbreaks are detected, the NCDC has an outbreak response team and coordinates, and participates in, the field investigations, but if a foodborne outbreak is suspected, nothing specifically is changed from the routine response to an outbreak; outbreak investigations of suspected foodborne outbreaks are not multisectoral investigations. There is no system of rapid information exchange during suspected foodborne outbreaks, and between focal points for food safety. Nigeria has developed a manual and conducts training on foodborne disease investigations. However, there is limited laboratory capacity to support foodborne outbreak investigations through testing of specimens from humans, food or the environment.

Recommendations for priority actions

- Strengthen inter-sectoral and interdisciplinary collaboration, coordination and information-sharing on food safety and foodborne disease.

- Strengthen surveillance of foodborne disease and monitoring of contamination in the food chain and enhance foodborne outbreak and emergency investigations and response.

- Strengthen food safety capacity including relevant laboratory capacity in the public health, food safety, and agriculture and veterinary sectors at central, state and district levels.

Indicators and scores

P.5.1 Mechanisms for multisectoral collaboration established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases – Score 2

Strengths/best practices
- Passage of the National Policy for Food Safety and its Implementation Strategy in 2016

- Creation of the National Food Safety Management Committee (NFSMC) and the Interministerial Committee on Food Safety.

- Outbreak investigations by NCDC are robust and timely, although a multisectoral response system for foodborne diseases and food safety emergencies is not established.

Areas that need strengthening/challenges
- Inter-sectorial collaboration on food safety and foodborne diseases is inadequate.

- Overall need for food safety capacity building in the public health, food safety and agriculture and animal health sectors at central, state and district levels.

- Foodborne disease surveillance, monitoring of contaminants in the food chain, and outbreak/emergency investigation and response capacities need strengthening.

- Laboratory infrastructure, equipment and expertise for food safety is inadequate.

Biosafety and biosecurity

Introduction

It is vital to work with pathogens in the laboratory to ensure that the global community possesses a robust set of tools – such as drugs, diagnostics, and vaccines – to counter the ever-evolving threat of infectious diseases.

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. At the same time, the expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns regarding the need to ensure proper biosafety and biosecurity to protect researchers and the community. Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment.

Target

A whole-of-government national biosafety and biosecurity system with especially dangerous pathogens identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach conducted to promote a shared culture of responsibility, reduce dual-use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures in place as appropriate.

Nigeria level of capabilities

Nigeria has made significant progress in the area of Biosafety. There is a National Biosafety Management Agency which serves as the regulatory authority. National Biosafety Regulations are in place and the National Biosafety Management Agency has federal funding available to support biosafety programmes and training for laboratories. Nigeria has an existing Biosafety Association and a Biosecurity Association.

There is a significant need for Biosecurity regulation and implementation throughout the country. Biosecurity is mentioned in regulations but is focused on genetically modified microorganisms not laboratory biosecurity. In addition, Nigeria does not have a list of dangerous pathogens or toxins for control.

Nigeria is a signatory and has ratified the Biological Weapons and the Chemical Weapons Conventions. In addition, Nigeria has adopted UN Security Council Resolution 1540, which states that the proliferation of nuclear, chemical and biological means of delivery constitutes a threat to international peace and security.

Recommendations for priority actions

- Enact Biosafety and Biosecurity Legislation.

- Establish a multi-sectoral national coordination, oversight and enforcement mechanism for response and control of dangerous pathogens.

- Provide adequate funding and training for Biosafety and Biosecurity programmes.

- Perform an audit of institutions and locations with dangerous pathogens and toxin control in order to develop a plan for consolidation.

PREVENT

Indicators and scores

P.6.1 Whole-of-government biosafety and biosecurity system in place for human, animal and agriculture facilities – Score 1

Strengths/best practices

- Nigeria has established a biosafety regulation and regulatory authority.

- Biosafety policies have been established for the human and agricultural sectors.

- They also have institutional biosafety manuals and existence of Biosafety Officers in some of the facilities.

- In addition, Nigeria has availability of Biosafety Level-2 laboratories in the country.

- Nigeria is in the process of developing laboratory Biosecurity legislation. There is dedicated funding for Biosafety implementation in the country through National Biosafety Management Agency.

Areas that need strengthening/challenges

- Nigeria needs Biosecurity policies and programmes with dedicated funding to be developed and implemented.

- Development of multi-sectoral Biosafety and Biosecurity, incident and emergency response, and bioterrorism response plans are critical for response to any event involving dangerous pathogens.

- Development of Institutional Biosecurity programmes and national coordination of biosecurity activities is important in order to establish a comprehensive Biosecurity programme.

- Consolidation of institutions and locations with dangerous pathogens and toxin control with training support would help to reduce the risk of theft or release of dangerous pathogens.

- Laboratory audits should be used to determine the locations and current inventories of dangerous pathogens.

- It was also mentioned that there is a need for political stakeholders to be made aware of the need for Biosafety and Biosecurity regulations and to perform awareness training with the public regarding dangerous pathogens.

P.6.2 Biosafety and biosecurity training and practices – Score 1

Strengths/best practices

- Nigeria has a Biosafety training available at the institutional level.

- There are training guide manuals for biosafety, and availability of checklists for Biosafety and physical containment.

- In addition, there are a number of human and veterinary health personnel who have completed the Field Epidemiology Training Programme which has some components of Biosafety.

Areas that need strengthening/challenges

- Nigeria needs consolidation and training support of institution and locations for dangerous pathogens and toxin control.

Immunization

Introduction

Immunizations are estimated to prevent more than two million deaths a year globally. Immunization is one of the most successful global health interventions and cost-effective ways to save lives and prevent disease.

Target

A national vaccine delivery system – with nationwide reach, effective distributions, access for marginalized populations, adequate cold chain and ongoing quality control – that is able to respond to new disease threats.

Nigeria level of capabilities

Nigeria has a national immunization programme governed by a cumulative multi-year plan (2013—2020). The programme includes the following vaccine preventable diseases: diphtheria, haemophilus influenza B, hepatitis B, human papilloma virus, measles, meningitis, poliomyelitis, pertussis, pneumonia, pneumococcal disease, rotavirus, rubella, tetanus, tuberculosis, and yellow fever. This programme was developed to align with the WHO Global Vaccine Action Plan. Immunization is mandatory according to the Vaccine Policy of Nigeria. However the plan does not currently include zoonotic diseases.

The District Vaccine Data Management Tool, District Health Information System 2, Multiple Indicator Cluster Survey, National Demographic Health Survey, and National Immunization Coverage Survey are the major vaccine coverage monitoring mechanisms in the country. The National Primary Health Care Development Agency, in collaboration with various multilateral and non-governmental partners, is charged with ensuring vaccine access for the target population(s), as well as monitoring vaccine coverage for the country. Cold chain management and temperature monitoring is facilitated through a system known as "Beyond Wireless." NICS/MICS are done every three years to validate the administrative coverage rates obtained from the routine system. The last coverage survey for measles vaccine was completed in April 2016.

Though the programme has been suspended due to inadequate resources, a successful best practice that previously improved the coverage rates among the 0—5 year target group was the Midwives Service Scheme Conditional Cash Transfer to Mothers programme. Nigeria has also prioritized long-lasting insecticide treated nets distribution to mothers and community engagement during Maternal and Child Health week. Additionally, the JEE team discovered that Nigeria previously had the capability to manufacture and distribute its own vaccines; in the future, the NCDC would like to eventually lead the country in resuming this activity.

Recommendations for priority actions

- Dedicate resources to information management system for vaccine data to ultimately improve data quality (completeness, timeliness and reliability)

- Develop strategies to improve national coverage, especially focusing on historically low coverage areas

- Include vaccines for zoonotic disease, particularly in special populations such as health care workers and veterinarians

PREVENT

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme – Score 3

Strengths/best practices

- Country plan aligned with the Global Vaccine Action Plan.

- 70-89% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as reported in the admin data and confirmed by coverage surveys; plan is in place to reach 90% within the next three years.

- No stock-outs reported at national, state, or local level for nearly three years.

- Cold chain equipment available in 60% of wards nationwide.

Areas that need strengthening/challenges

- Expansion of public health workforce to meet demands of routine immunization and campaigns.

- Increase the proportion of wards and health facilities with requisite cold chain equipment.

- Improve social mobilization/community engagement activities.

P.7.2 National vaccine access and delivery – Score 4

Strengths/best practices

- Adequate provisions aimed at ensuring that cold chains is maintained up till the end user via effective vaccine delivery systems using refrigerated vans, cold boxes, vaccine carriers.

- Availability of Cold Chain equipment at the national, zonal, state and health facilities in 60% of wards nationwide.

- Real time monitoring system across the national, zonal and state level (Beyond wireless portal), which is a software to continuously measure the temperature of the cold chain system.

- Availability of the necessary structures at all levels.

- Real time monitoring system across the national, zonal and state level (Beyond wireless portal). This is a software which records the temperatures of the cold chain.

Areas that need strengthening/challenges

- Insufficient human resources to support routine and reactive vaccination campaigns.

- Non-payment of health worker salaries.

- Social cultural beliefs resulting in rejection.

- Poor political will especially at state, LGAs.

- Multiple data information systems for monitoring vaccine coverage and delivery.

DETECT

National laboratory system

Introduction

Public health laboratories provide essential services including disease and outbreak detection, emergency response, environmental monitoring and disease surveillance. State and local public health laboratories can serve as a focal point for a national system, through their core functions for human, veterinary and food safety including disease prevention, control and surveillance; integrated data management; reference and specialized testing; laboratory oversight; emergency response; public health research; training and education; and partnerships and communication.

> **Target**
>
> *Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.*

Nigeria level of capabilities

The IHR core capacity under detection provides for the assessment of core indicators for the national laboratory system. Nigeria has a laboratory system with a three-tiered structure fashioned along the nation's health care delivery system (primary, secondary and tertiary). There are 3,068 private medical laboratories registered within the country with the landmass of 910,770 sqm and human population of approximately of 188 million (2015), 36 states with 774 LGAs.

Reference laboratories exist for all integrated disease surveillance and response (IDSR) priority diseases at the federal governmental level and academic entities. However, each laboratory deals with specific (not all) IDSR priority diseases such as follows: 8 TB reference labs, three (3) of which have BSL-3 laboratories, one (1) national Influenza reference laboratory with PCR test capacity and virus isolation using cell culture (Gaduwa NCDC), twenty-six (26) centralized PCR laboratories for HIV viral load testing and early infant diagnosis, one (1) national veterinary laboratory for zoonotic disease confirmation, four (4) measles laboratories, two (2) polio laboratories (Ibadan and Maiduguri), two (2) CSM PCR-confirmation laboratories, one (1) cholera reference laboratory, and four (4) VHF reference laboratories.

Only a few core tests (HIV, Malaria) are accessible for Nigerian people across the country and are conducted at different levels with differing capacities. It is difficult to determine the percentage of people who have accessibility to HIV-serology testing and Malaria-rapid diagnostic kits. Although in-country capability to conduct higher level diagnostic testing exists (PCR, cell culture, sequencing), the laboratories are limited at the national level and the capability is less than that needed for the entire country.

The 10 core tests are among the priority diseases, to which a National Laboratory Network should respond. The capacity for performing laboratory testing for the priority diseases is in the process of enhancement. In the event of the Ebola Virus Disease outbreak in Nigeria that occurred by the introduction of EVD patient from West Africa, the University of Lagos Teaching Hospital responded to the outbreak properly with the virological test for EVD, resulting in early detection of the outbreak. Furthermore, Nigeria is one of the Lassa fever-endemic countries and has a well-operated laboratory diagnostic capacity in the country. On the other hand, the number of laboratories, in which these tests other than VHF can be performed, is limited for Nigeria. The capability of the Nigerian Nationwide laboratory system to perform detection and

characterization of the pathogens causing epidemic disease, including both known and novel threats, safely, accurately, and in a timely manner from all parts of the country should be enhanced step by step.

No established system is in place for transporting specimens from intermediate level/districts to national laboratories, only ad hoc transporting. A specimen transportation system is a fundamental element for making proper laboratory diagnosis in a timely manner, providing accurate surveillance, and response to infectious disease outbreaks. The specimen referral and transportation system has been established only for some specific infectious diseases such as polio, measles and influenza as a form of Ad-hoc system in Nigeria. No system is in place for transporting specimens from intermediate level/districts to national laboratories including cold chain.

During the site visit to the Mainland Infectious Disease Hospital, in Lagos, and University of Lagos Teaching Hospital, all of which are in Lagos, it is confirmed that the specimen transportation including cold chain is established. The system enabled the laboratories in these institutes to perform microbiological tests properly and in a timely manner. However, it must be noted that the system is ad hoc rather than structured.

Recommendations for priority actions

- Enhance the laboratory infrastructure and resources available to sustain an integrated national laboratory network.

- Implement Strengthening Laboratory Management Toward Accreditation Programme for the national laboratory network with a focus on biosafety, biosecurity and quality assurance.

- Develop a robust sample and vaccine transportation system which ensures cold chain.

- To adopt basic laboratory information sharing system among the relevant stakeholders.

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases – Score 3

Strengths/best practices
- SOPs for all core tests have been prepared.

- A laboratory inspection system including EQA is available but restricted to private laboratories.

- A National Technical Working group has been established to advise the FMOH on national laboratory matters.

- Ten laboratories have been accredited by WHO-AFRO (3 - 5 stars).

- Participation in international accreditation, South African National Accreditation System, WHO AFRO, ASLM, is currently under process for making the laboratory results reliable and processes aligned.

- NCDC plays an important role in the capacity enhancement of the laboratory testing for the priority diseases in the country.

Areas that need strengthening/challenges
- Accreditation of testing laboratories lacks leadership commitment, has funding issues, and no regulatory framework.

- There is a lack of national policy and operational guidelines for implementation of Biosafety, biosecurity and biocontainment.

- There is a lack of harmonization in reagents and quality assurance among laboratories participating in diagnosis of priority diseases in IDSR, leading to limited standardisation and quality assurance for laboratory reagents and procedures for IDSR diseases.

- There is a lack of laboratory equipment platform harmonization and poor equipment maintenance culture across the board for harmonisation of laboratory equipment, and routine and timely equipment maintenance.

- There needs to be enforcement of national standards for laboratory infrastructure and creation of incentives for practitioners to support medical diagnosis.

- There is weak integration of laboratory services resulting from parallel information structure and non-interoperability of information platforms

- There is inadequate enrolment of laboratories in EQA programme and lack of political will to support laboratory services' participation in proficiency testing.

- Inadequate knowledge of laboratory personnel on inventory taking and logistics management of supplies.

- Inconsistency in laboratory inspection and supervision.

- Lack of integration between human and animal health.

- Lack of regular laboratory inspection.

D.1.2 Specimen referral and transport system – Score 1

Strengths/best practices

- The specimen referral and transportation system has been established for some specific infectious diseases such as polio, measles and influenza as a form of Ad-hoc system in Nigeria.

Areas that need strengthening/challenges

- The specimen referral network is supported by partners in several areas such as polio-associated specimen transportation, with national guidelines, however, is not universal across the country.

- There is no national policy and guidelines on sample referral.

- There has been loss of stored samples due to erratic and/or limited power supply.

- There is no national policy on material transfer agreement, potentially resulting in the illegal transfer of these samples outside the country.

- There is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation not known.

- Insufficient quantities of commercial grade triple packaging supplies and inadequate number of trained and certified personnel for infectious substances shipment

- No national policy and guidelines on specimen archiving and bio-banking.

D.1.3 Effective modern point-of-care and laboratory-based diagnostics – Score 2

Strengths/best practices

- The NCDC National Reference laboratory, Gaduwa has the capability to perform viral culture, PCR for confirmation of bacterial (CSM), and Influenza diseases.

- There are two national reference laboratories for polio with the capacity of virus isolation and differentiation, and intratype typing.

- There is a national laboratory for veterinary medicine, National Veterinary Research Institute (Vom), in which genome amplification with PCR and cell culture for animal infectious disease laboratory diagnosis are performed and vaccines for animal diseases are produced.

- There are other infectious disease-associated institutes, African Centre of Excellence for Genomics of Infectious Diseases, which performs studies of genome sequencing.

- Tests including HIV and TB are available in the laboratories with capacity for early infant diagnosis and HIV viral load, PCR investigation, and TB laboratories with capacity for TB culture and Gene Expert study of MDR and XDR TB.

Areas that need strengthening/challenges

- Because of the limited capacity for performing proper laboratory tests for the IDSR priority diseases, the network of laboratories to cover all tiers of the national health care system with empowerment of the apex laboratory should be expanded.

- To make the network laboratories acquire capability, the system to supply reagents and consumables supply should be established systemically based on efficient platforms.

- Furthermore, a national Laboratory Management Information System should be established.

- Stable electricity supply to the NLS laboratories is necessary.

D.1.4 Laboratory quality system – Score 2

Strengths/best practices

- Although the national quality assurance system through an External Quality Assurance (EQA) programme has not been established, there are laboratories that participate in the EQA offered from international framework such as WHO-AFRO.

- At the site visit to NCDC Central Public Health Laboratory Lagos, it was confirmed that the institute had participated in the EQA for several diagnostics including TB-microscopy.

Areas that need strengthening/challenges

- At this stage, External Quality Assurance (EQA) schemes have not been established at all levels, and should be introduced for the standardization of the laboratory quality at the national level.

- It was discussed that the number of laboratories enrolled in Strengthening Laboratory Management Toward Accreditation programme should be increased by ensuring at least 3 laboratories in all States.

Real-time surveillance

Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated biosurveillance effort that facilitates early warning and situational awareness of biological events.

Target

Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between sub-national, national and international levels of authority regarding surveillance of events of public health significance; improved country and intermediate level regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and OIE standards.

Nigeria level of capabilities

Nigeria's real time surveillance system is developing but faces challenges due to the size of the country and sub-optimal funding. IDSR was adopted as the strategy for indicator surveillance in 2002 but roll-out to the whole country has been slow. Out of the total 32,233 health facilities in the country, only 16,626 have been identified as IDSR reporting sites. This is because the country found it convenient to implement IDSR starting with the polio surveillance sites only. Closely linked to this, there has been no federal level organised training of clinical health personnel working in health facilities. Some states like Lagos have, however, conducted some training of a limited number of clinical personnel on IDSR. Some State epidemiologists and LGA designated surveillance officers have however undergone IDSR modular training. This has limited surveillance capacity at the LGA level and health facility level.

Event-based surveillance is conducted at the national level and also in Lagos state. While Lagos keeps a manual rumour log, the federal level does mining of bio-surveillance and social media data from online sources to capture real time events. The events are captured using both automated search engines and also moderated search engines. The system uses the keywords of diseases/conditions to pull up information from the database. The automated search engine updates every 15 minutes to upload new events. Rumour logs are kept from this data.

Reporting within the country's IDSR system is conducted immediately, weekly or monthly, with set reporting timelines against which timeliness of reporting is measured. IDSR routine data on priority diseases is collected from the in and out patient registers in the health facilities on a weekly and monthly basis and forwarded to LGAs using SMS or paper form. The LGAs collate and forward to State also by SMS and paper form for weekly and monthly reporting respectively. Data entry in 15 LGAs is done into the mobile electronic system called mSERS. The states enter the data using customized excel spreadsheet. States where mSERs is used, receive data on an excel sheet which is used to manually key into NCDC compatible spreadsheets. There are plans to include the IDSR reporting into the national DHIS 2 platform so as to introduce electronic reporting at the LGA level. There are also plans to introduce Open Data Kit for real time data collection at the health facility level.

DETECT

The weekly surveillance reporting indicators currently stand at 75% and 80% timeliness and completeness respectively at state level and 90% and 95% respectively at national level against the target of 80% for both indicators.

Animal health surveillance started with 170 surveillance points which have gradually increased to 591. The animal health sector has a list of 116 notifiable infections and infestations. The surveillance system, called National Animal Disease Information and Surveillance (NADIS) uses Animal Resources Information System (ARIS) and World Animal Health Information System (WAHIS). Reports are captured and reported monthly, six monthly and annually. Immediate notification is also conducted within 24hrs of confirmation of disease or events. ARIS data is generated from veterinary facilities in hard copies and forwarded to State Directors of Veterinary Services. Epidemiology Officers collate and key into ARIS. Reports are validated before sending to African Union Inter-African Bureau for Animal Resources. WAHIS data are collected at the National level for OIE listed diseases. All the 774 LGAs and 36 States and Federal Capital Territory are involved in the NADIS. Only the State and Federal levels use electronic reporting, although there are plans to take this down to the LGAs. Data analysis is mainly done at sub-national and National levels.

In both sectors, there is variable limited capacity for frontline data validation and quality assurance. In addition, the surveillance systems are heavily dependent on donor-funded programmes. There is no integration of indicator and laboratory based surveillance at any reporting tiers, with reporting from IDSR occurring in parallel to laboratory surveillance with significant delays in laboratory reporting. However, a robust event based surveillance system has been developed at national level with increasing efforts to enhanced event based surveillance at local and intermediate tiers.

Expertise and capacity for analysis and interpretation of surveillance data is concentrated at national level but training continues to be extended through the FELTP programme to the State and local level.

Due to significantly lower levels of investment, animal health surveillance is underdeveloped, with no genuine real-time surveillance system. Surveillance for key animal diseases remains predominantly paper-based and reports monthly and, while information is shared between human and animal health systems, there is no coordinated 'One Health' approach to surveillance.

Recommendations for Priority Actions

- Systematically build capacity for surveillance at all levels (HF, LGA, State and national), expanding surveillance to all health facilities including private facilities for both human and animal health.

- Develop real-time surveillance capability for animal health and promote a One Health approach.

- Establish linkages between the surveillance system and laboratory.

- Establish an electronic reporting system that is inter-operable and integrated to other systems and also linked to DHIS2.

- Enhance monitoring and evaluation capacity for IDSR, including supportive supervision.

Indicators and Scores

D.2.1 Indicator and event based surveillance systems - Score 3

Strengths/ Best Practices

- The country has a well-developed event-based surveillance system at federal level and in Lagos State supported by rumour logging.

- The country has a well-developed Indicator-based system at federal level, at State level, at LGA level and in about half the health facilities.

- Some mid-level health managers at Federal, State and LGA levels have been trained in IDSR.
- The NFETP is conducting capacity building in epidemiology.
- The surveillance systems are able to detect public health threats.
- The animal health sector conducts surveillance on select notifiable diseases.
- Weekly surveillance epidemiological reports produced at national level and disseminated in real time

Areas which need strengthening/Challenges

- Surveillance coverage is low and needs to be extended to include tertiary health facilities, private sector health facilities and non-polio reporting sites.
- Increase the sphere for EBS and roll out community based surveillance.
- Build technical capacity among all health workers for performance of IDSR functions by training, on the job training and mentorship.
- Incorporate laboratory systems into the surveillance system with collection and sharing of laboratory information.
- Conduct systematic supportive supervision data quality assessment to strengthen IDSR.
- Improve coordination for IDSR at all three tiers of governance, with substantive surveillance focal persons at State and LGA levels and in major health facilities.
- Monitor IDSR performance.
- Integrate surveillance systems across sectors.

D.2.2 Inter-operable, interconnected, electronic real-time reporting system - Score 2

Strengths/ Best Practices

- The country is making good progress towards electronic reporting.
- There is good partnerships to establish electronic reporting.

Areas which need strengthening/Challenges

- Address the efficiency and effectiveness of the current reporting system by:
    - Eliminating manual data manipulation;
    - Reducing the levels of data manipulation before data reflects on the database;
    - Increasing the coverage of primary data entry sites (HFs or LGAs).
- Addressing interoperability and integration by using proven platforms like DHIS2.
- Increasing electronic data connectivity between sectors.
- Go for best practices by learning from other systems/countries.

D.2.3 Analysis of surveillance data - Score 3

Strengths/ Best Practices

- The federal level has capacity for data analysis.
- Some staff at State and LGA levels can analyse data.
- Weekly epidemiological report is produced and disseminated in real time at to all levels.

DETECT

Areas which need strengthening/Challenges

- Real-time data analysis at some States and LGAs and in most HFs is lacking.

- Risk assessment and reporting by all levels following data analysis.

D.2.4 Syndromic surveillance systems - Score 3

Strengths/ Best Practices

- The country conducts syndromic surveillance for at least 4 WHO priority diseases – Severe Acute Respiratory Infections, polio, Influenza like illness and cholera.

- The IDSR system which is largely syndromic is being implemented.

Areas which need strengthening/Challenges

- Expand syndromic surveillance coverage to include private sector providers and tertiary/referral centres.

- Improve laboratory confirmation which is low due to logistical challenges (reagent stock-outs, specimen transport).

- Link laboratory data to syndromic surveillance.

- Establish syndromic surveillance in animal sector.

Reporting

Introduction

Health threats at the human–animal–ecosystem interface have increased over the past decades, as pathogens continue to evolve and adapt to new hosts and environments, imposing a burden on human and animal health systems. Collaborative multidisciplinary reporting on the health of humans, animals and ecosystems reduces the risk of diseases at the interfaces between them.

Target

Timely and accurate disease reporting according to WHO requirements and consistent coordination with FAO and OIE.

Nigeria level of capabilities

The country has guidelines on procedures for reporting on PHEICs included within the IHR guidelines and the national IDSR technical guidelines. The legislation establishing NCDC that is under development by the national assembly will also establish the legal environment for reporting on priority diseases, conditions and events. Nigeria has multilateral and regional reporting requirements which includes signing of MOUs between five regional countries. There are synchronization meetings and activities between border LGAs and telephone communication through the NFPs and cross-border Focal Points. The country has in place an IHR NFP and OIE delegate as well as cross border public health focal points.

Disease reporting in Nigeria is through the IDSR strategy for public health diseases. The IDSR reporting frequency on the 41 priority public health diseases, conditions and events is immediate, weekly or monthly. IHR reporting requirements are met within the IDSR reporting context while the OIE contact point for surveillance of animal or veterinary disease is domiciled in the Ministry of Agriculture and gets reports on 21 notifiable veterinary diseases monthly.

The mechanisms for decision making on reporting to WHO and OIE are different in the different sectors. When the thresholds for reporting are reached, the IHR NFP and OIE delegate reports to WHO and OIE respectively. Food safety issues are reported through the country INFOSAN representatives to WHO and the NFP is also notified. There is exchange of information between the OIE contact points and IHR NFP.

The first formal assessment of the country's system that was conducted in 2009 established that there existed reporting gaps. The functional level of these systems have continued to be tested during events /outbreaks with e.g. Lead poisoning in Zamfara, and the meningitis and Lassa fever outbreaks. Even though some gaps still exist at the level of detection and confirmation, notable progress has been made in notification of WHO and OIE. The NFP has notified WHO even when use of the decision instrument (Annex 2, IHR (2005)) indicated that the reporting threshold had not initially been met in the case of meningitis outbreak.

Recommendations for priority actions

- Strengthen and improve consistency, completeness (including from private sector) and timeliness in reporting from the local and State levels.

- Establish a framework for multi sectoral coordination in reporting and communication that will enable information sharing.

- Establish a central data base that integrates data from all sectors for all 41 priority diseases under IDSR.

- Institute monitoring and evaluation of reporting against set IDSR and IHR indicators

Indicators and scores

D.3.1 System for efficient reporting to FAO, OIE and WHO – Score 3

Strengths/best practices

- Existence of surveillance units in human (IDSR) and animal health (NADIS) sectors.

- Existence of IHR NFP and OIE delegates in the FMOH and Ministry of Agriculture.

- The focal points are linked to learning package and best practices as provided by WHO, OIE and FAO.

- Existence of SOPs and guidelines for specific diseases.

- List of priority disease under surveillance in the health facilities.

- Mobile strengthening of epidemic reporting system (mSERS) now available in 15 states.

- An effective incident management system.

- Electronic reporting now exist in all the States and most LGAs.

- Feedback reports also is given weekly to the intermediate level (States).

- Conduct of annual surveillance meeting now includes the laboratory focal persons to integrate laboratory surveillance with the routine surveillance.

- The country has demonstrated ability to identify a potential PHEIC and file a report to WHO and similarly to the OIE for relevant zoonotic disease within 24 hours of confirmation and similarly to the OIE

Areas that need strengthening/challenges

- Increasing the proportion of reporting health facilities.

- Introducing a truly electronic reporting system and increasing its coverage.

- Capacity at state and LGA level to improve quality of reports.

- Overall coordination among stakeholders in IHR.

- Systematically monitoring reporting performance.

- Improving quality through training technical people simulation exercises and communication.

D.3.2 Reporting network and protocols in country – Score 2

Strengths/best practices

- All States have designated surveillance officers.

- There are trained surveillance officers at the LGA level.

- The IDSR technical guidelines and IHR decision making instrument are in use to guide detection and reporting.

- Standardized reporting forms (IDSR 001, 002, 003) are used across the country.

- The country has demonstrated timely notification to WHO and OIE following detection of outbreaks in line with the IHR (2005)

Areas that need strengthening/challenges

- Strengthen capacity for intersectoral involvement through implementation of 'One Health'.

- Establishment of central data base in NCDC that integrates and sources data from other sectors.

- Development of defined protocols, MOUs guidelines for communication and linkages between NFP (NCDC) and other stakeholders in IHR.

- Legislation on NFP (NCDC) structure is yet to be passed by the national assembly.

DETECT

Workforce development

Introduction

Workforce development is important in order to develop a sustainable public health system over time by developing and maintaining a highly qualified public health workforce with appropriate technical training, scientific skills and subject-matter expertise.

Target

States Parties with skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005).

Nigeria level of capabilities

One of Nigeria's greatest assets arises from within its population of 180 million citizens – dedicated, well-trained public health professionals who support public health activities across all levels of the health care system. The Nigeria Field Epidemiology and Laboratory Training Programme(NFELTP), which is in the midst of its ninth cohort, has trained several hundred professionals including epidemiologists, laboratorians and veterinarians who now serve in diverse roles such as State Epidemiologists, laboratory directors, and staff of the Nigeria Centre for Disease Control. In recent years, these professionals have successfully interrupted transmission of the Ebola virus and have brought Nigeria closer to polio eradication. Nigeria has also successfully introduced the Frontline Field Epidemiology Training Programme (FETP). Even in light of these accomplishments, the Nigerian public health workforce is still moving toward the goal of one trained field epidemiologist (or equivalent) per 200,000 population and at least one trained FETP Frontline field epidemiologist in every district. The development of a broad national public health workforce strategy would support Nigeria in reaching this goal. The current workforce strategy omits epidemiologists, veterinarians, and veterinary technicians.

Recommendations for priority actions

- Develop a comprehensive national public health workforce strategy for expansion, diversification, financial sustainment, and retention of the existing public health workforce in order to reach the goal of one trained field epidemiologist (or equivalent) per 200,000 population.

- Launch the Intermediate FETP and fully implement Frontline FETP so that there is a trained field epidemiologist in every district.

- Define career path for specialized public health expertise within the Nigerian civil service structure.

Indicators and scores

D.4.1 Human resources available to implement IHR core capacity requirements – Score 3

Strengths/best practices

- NFELTP is an exceptional programme with strong focus on field-based training experiences which has repeatedly demonstrated its ability to contribute to rapid control of outbreaks including the introduction of Ebola into Nigeria.

- FETP Frontline is providing critical trained field epidemiologists at the district level.

- NFELTP graduates and residents have provided valuable contributions to public health emergencies in other countries, most notably the Ebola epidemic in West Africa.

Areas that need strengthening/challenges

- Limited worker incentives to improve retention rates.
- Limited range of career progression pathways available for public health workers.

D.4.2 FETP or other applied epidemiology training programme in place – Score 4

Strengths/best practices

- NFELTP has matured substantially from initial cohort sizes of 12 residents to nearly 60 residents per cohort. Its residents benefit from close mentoring by FETP alumni who serve as supervisors during their field placements.
- Frontline FETP has now trained 607 surveillance officers, which represents 27% of the areas covered.
- Nigeria also has a successful advanced public health fellowship programme for senior physicians.
- Graduates currently serve as resident advisors in other West African countries.
- NFETLP residents are working in all 36 States and the Federal Capital Territory.

Areas that need strengthening/challenges

- Geographic distribution of workers within the country may not be adequate to address workforce shortages.
- Introduction of Intermediate-level FETP.
- Provide an FETP Frontline trained field epidemiologist at each district.

D.4.3 Workforce strategy – Score 2

Strengths/best practices

- National workforce strategy exists for most health care cadres, including laboratory scientists, technicians, physicians, and nurses.

Areas that need strengthening/challenges

- Attrition of trained public health workforce occurs regularly but Nigeria currently lacks a mechanism to track its workforce.
- No incentive mechanisms are available to retain workforce.
- Pharmacists do not have equal access to training opportunities potentially limiting the public health contribution this professional cadre can make to addressing significant public health concerns (e.g. antimicrobial resistance).
- Limited long-term career development pathways for public health professionals.

DETECT

RESPOND

Preparedness

Introduction

Preparedness includes the development and maintenance of national, intermediate and community/primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. Other components of preparedness include mapping of potential hazards, the identification and maintenances of available resources, including national stockpiles and the capacity to support operations at the intermediate and community/primary response levels during a public health emergency.

Target

Development and maintenance of national, intermediate (district) and local/primary level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. This covers mapping of potential hazards, identification and maintenance of available resources, including national stockpiles and the capacity to support operations at the intermediate and local/primary levels during a public health emergency.

Nigeria level of capabilities

Nigeria's preparedness capability remains very low with a lack of coordinated all-hazards preparedness plans at national and sub-national levels. Draft plans exist addressing specific diseases (pandemic influenza, viral haemorrhagic fever, for example), or focused on specific agencies, but these plan are not interconnected or multi-sectoral.

National crisis management, disaster response, and contingency plans exist but do not specifically address public health emergencies. Additionally, these plans do not always clearly articulate the roles of health agencies at all administrative levels.

Despite these limitations, as a consequence of lessons learned from responding to recent public health events, some pre-positioning of emergency resources has been undertaken and surge capacity identified. The country will need to ensure that resource deployment is based on thorough risk assessment and hazard mapping so that surge personnel are adequately trained, drawn from diverse sectors, and work towards a shared evidence-based all-hazards preparedness plan.

Recommendations for priority actions

- Develop an all-hazards multi-sectoral public health emergency preparedness plan, linking existing agency-specific and disease-specific plans.

- Where indicated, Nigeria CDC should lead in preparation of memoranda of understanding between response agencies in different sectors.

- Strengthen the technical and administrative capabilities of Nigeria CDC and National Emergency Management Agency to develop national vulnerability maps that involve military, media, wildlife and animal health sectors to address zoonotic and emerging infections.

- Pre-position equipment to strategic locations consistent with vulnerability maps (e.g. remote hard-to-access areas).

Indicators and scores

R.1.1 National multi-hazard public health emergency preparedness and response plan developed and implemented – Score 1

Strengths/best practices

- Surge capacity (Nigeria Field Epidemiology and Laboratory Training Programme residents) has been identified and effectively utilized during recent public health crises.

Areas that need strengthening/challenges

- Fragmented planning - several draft documents and plans (either event-based or administrative), without clear coordination or linkage between sectors.

- Public health concerns are not adequately addressed in existing national emergency and disaster response plans.

- There are no memoranda or agreements between agencies for coordination and collaboration in response to public health emergencies.

R.1.2 Priority public health risks and resources mapped and utilized – Score 1

Strengths/best practices

- Strategic stockpiles have been identified and disseminated to the intermediate health tiers

- Information gathered from IDSR – based surveillance has been used to determine priorities for resource stockpiling and distribution

Areas that need strengthening/challenges

- National multi-sectoral all-hazards public health risk assessment and resource mapping is needed to inform development of a national public health emergency preparedness plan and to shape training and exercising priorities.

- A logistics and inventory management system based on the identified priorities from risk mapping should be developed to ensure efficient and effective management of deployed stockpiles

Emergency response operations

Introduction

A public health emergency operations centre is a central location for coordinating operational information and resources for strategic management of public health emergencies and emergency exercises. Emergency operations centres provide communication and information tools and services, and a management system during a response to an emergency or emergency exercise. They also provide other essential functions to support decision-making and implementation, coordination and collaboration.

Target

Country with public health emergency operations centre (EOC) functioning according to minimum common standards; maintaining trained, functioning, multisectoral rapid response teams and "real-time" biosurveillance laboratory networks and information systems; as well as trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Nigeria's Capacity Level

NCDC has a situation room that provides a physical space for an EOC for responding to public health emergencies. No staff specifically assigned to the NCDC EOC but staff are deployed to the EOC and to the field in response to emergencies. NCDC is prepared to respond to public health emergencies, and if necessary activate EOC, 24-hours a day, 7-days a week. The NCDC EOC has been activated several times including recently for the meningococcal outbreak. NCDC also operates a call centre, which is heavily used by the public during public health emergencies and is closely aligned to the EOC. The NCDC activations have contributed to the efficient coordination of several successful public health responses. The NCDC EOC has operating procedures, but the full array of standard operating procedures is not yet available. Training of staff for the EOC is conducted, as needed, but is not standardized and fully implemented. NCDC conducts national surveillance and situational analysis; this information is utilized to determine when the EOC is activated but the full and standard procedure for activating the EOC has not been developed. However risk mapping to guide priorities for training and preparedness has not been done. Furthermore, while the EOC utilizes the incident management structure during activations, plans and procedures for incident management are not fully developed. The NCDC EOC has some space, equipment, and capacity for logistic support of public health emergencies, but these are limited.

Several stakeholders are involved in emergency response to public health events in Nigeria, including NCDC, the Nigeria Emergency Management Agency (NEMA), and security forces. There has been limited coordination with the animal and agriculture sectors in emergency response and during NCDC EOC activations. Several other EOCs are present in Nigeria, most notable a EOC for polio elimination, which has been critically important in the successful efforts towards polio elimination in Nigeria. This EOC was established before the NCDC EOC, and provided important lessons which were helpful when the NCDC EOC was established. Public health EOCs have also been established, and activated in Lagos and several States, particularly for polio elimination efforts.

Recommendations for Priority Actions

- Strengthen inter-sectoral collaboration for emergency response particularly between NCDC and the animal health and environment (all hazards approach).

- Establish standard operating procedures for EOC activation and operation.

- Establish standard training for EOC operation and for emergency response.

- Enhance the NDC EOC physical space, equipment, and logistic support.

Indicators and scores

R.2.1 Capacity to activate emergency operations – Score 2

Strengths/Best Practices

- NCDC EOC has activated several times and has been an important contributor to the successful control of the several public health emergencies.

- NCDC conducts routine public health surveillance and situational analysis and is prepared to respond to public health emergencies, including activating the EOC, 24-hours a day, 7-days a week.

- The polio EOC has been critically important in the successful progress towards polio elimination and has provided important lessons learned to the NCDC EOC.

Areas that Need Strengthening and Challenges

- NCDC EOC is limited by physical space and equipment.

- Standard operating procedures for emergency response and EOC activation have not been fully developed.

- Response to public health emergencies that require a one-health response is limited.

R.2.2 EOC operating procedures and plans – Score 2

Strengths/Best Practices

- EOC plans and procedures are drafted and have been utilized during EOC activations.

- EOC training has been conducted, although it was conducted during EOC activations.

Areas that Need Strengthening and Challenges

- EOC procedures need to be more fully developed.

- Operating the EOC is limited by available resources.

R.2.3 Emergency operations programme – Score 3

Strengths/Best Practices

- Table-top exercise for emergency response and EOC activation have been conducted.

- NCDC EOC has coordinated several successful responses to public health emergencies.

Areas that Need Strengthening and Challenges

- Emergency responses resulting in activation of the NCC EOC have not involved coordinated responses with agriculture or animal sectors.

- Procedures need to be standardized to enable more rapid activation.

R.2.4 Case management procedures implemented for IHR relevant hazards – Score 2

- Case management guidelines are available for priority epidemic-prone diseases.

RESPOND

Strengths/Best Practices

- Procedures have been developed, and were followed during the Ebola response, to safely transport infectious substances to public health laboratories.

- Case management guidelines are available for patient management of priority infectious diseases.

Areas that Need Strengthening/Challenges

- Case management guidelines are needed for transport of patients with infectious diseases.

Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is manmade (e.g. the anthrax terrorist attacks) or naturally occurring (e.g. flu pandemics). In a public health emergency, law enforcement will need to quickly coordinate its response with public health and medical officials.

Target

Country conducts a rapid, multisectoral response in case of a biological event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, such as to investigate alleged use events.

Nigeria level of capabilities

Nigeria has done significant work in the area of public health security. In 2014, security agencies were involved in the Ebola outbreak in Lagos Nigeria. The ongoing crises in the Northeast Nigeria has seen involvement of various military formations in responding to outbreaks. As demonstrated in the recent Ebola outbreak, it is critical that public health authorities have access to security forces to protect health care workers needing to lend aid, and when it is necessary to access areas which are not secure to assess public health situations or to administer assistance.

There are a number of ongoing public health responses which involve public health and military resources to effect public health gains. The military is actively engaged in providing assistance to ensure that all children are immunized against the polio virus in order to eradicate polio in Nigeria.

Nigeria ranked themselves lower than some on the JEE team since they did not have existing signed regulations and MOUs in this area. Regardless, Nigeria does have tested capability in linking public health and security.

Recommendations for priority actions

- Review, revise and seek assent to old or existing laws (or bills).
- Develop unique protocols and MoUs for security agencies and public health departments to elaborate on the specific roles in clear terms.
- Integrate and continuously develop capacity on integration and joint working involving relevant security authorities and those in public health to mitigate the normal turnover in positions and retirements.
- Develop and harmonize appropriate legal, policy instruments and operational package (MOU, SOPs) to ensure multi sectoral health preparedness and response.
- Further develop reporting and information sharing mechanisms including cross border collaboration.

Indicators and scores

R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological event – Score 1

Strengths/best practices

- There is legislation in place where public health authorities have the power to detain/quarantine individuals who present a public health risk. Nigeria has implemented IDSR across health facilities. Enforcement agencies currently have and maintain a direct connection with international security community including Interpol.

- The IDSR System is currently being implemented across health facilities in the country. There are a few vertical programmes reporting selected diseases (e.g. AFP, Measles) across different parts of the country but there is a gradual shift to an all systems approach. Currently, weekly reports are obtained via both paper and e-based platforms from health facilities, LGAs, States and reported to National level. The Nigerian Quarantine Law is in existence and its implementation involves the National Immigration Service and National Agriculture and Quarantine Services.

- Security authorities e.g. Air force, et al currently support public health response in Northeast Nigeria in order to ensure that all children are immunized for polio. The military arranges for security into insecure regions for public health authorities for public health initiatives. If a region is very insecure, as are areas occupied by terrorist organizations, the military has been trained to provided immunizations and primary care to people who cannot get it otherwise.

Areas that need strengthening/challenges

- Revision, passage and assent of old laws and or bills needs to take place.

- Development of MoUs with all key stakeholders is critical to ensure that all roles and responsibilities are established.

- Training should be coordinated between agencies, including integrated capacity building and joint investigation activities. It would be beneficial to have involvement of public health experts in emergency response linked to the Biological and Toxins Weapons Convention.

- There needs to be improved routine sharing of informational reports between public health and security authorities.

- There are regular exercises conducted at the National level across security agencies, but none done jointly with relevant public health and security authorities.

- In addition, coordination between public health and security authorities at all levels is important to jointly investigate health events with security considerations.

- There needs to be future operationalization of agreed MoUs, and ensuring budgetary concerns and allocation of funds.

- In the emergency plan for Avian Influenza, the list of security agencies identified for collaboration was not exhaustive as only the Nigeria Police Force, Nigeria Customs Service, Nigeria Immigration Service were listed in the document.

- Nigeria has a current lack of firsthand experience and limited ability of National and local governments to fully develop and implement requisite response protocols.

Medical countermeasures and personnel deployment

Introduction

Medical countermeasures are vital to national security and protect nations from potentially catastrophic infectious disease threats. Investments in medical countermeasures create opportunities to improve overall public health. In addition, it is important to have trained personnel who can be deployed in case of a public health emergency for response.

When public health emergencies occur, countries' capacity to mount response may be exceeded, necessitating support from other countries and/or international partners. It is therefore desirable for countries to establish a national framework for sending and receiving medical countermeasures and public health and medical personnel during public health emergencies. This may include establishing the necessary legal and regulatory processes and logistical plans to allow for the rapid cross-border deployment and receipt of medical commodities and public health and medical personnel during emergencies. Establishing a national framework and regional and/or international collaboration will assist countries in overcoming the legal, logistical and regulatory challenges to deployment of public health and medical personnel from one country to another

Target

National framework for transferring (sending and receiving) medical countermeasures, and public health and medical personnel from international partners during public health emergencies.

Nigeria level of capabilities

Nigeria has contributed to emergency response activities in neighbouring countries and has received skilled manpower in response to internal public health emergencies like the recent meningitis outbreak. Receiving and sending of medical countermeasures and manpower to respond to emergencies has been ad-hoc, with no document(s) to guide the process. There are no existing national plans or guidelines for sending and receiving medical countermeasures and personnel during emergencies. However, the country has several standalone plans developed by agencies including the NEMA and NCDC which guide sending and receiving medical countermeasures during public health emergencies. These plans have been used in responding to outbreaks and emergencies of public health concern in the country. A national pandemic preparedness plan for influenza also exists. This plan can be adapted for use to prepare and respond to disasters caused by other highly infectious diseases.

The country has health professional regulatory bodies e.g. Medical and Dental Council of Nigeria. These regulatory bodies have procedures in place for health professionals who wish to work in the country, including during emergencies.

Despite the lack of a substantive plan and guidelines, the Federal Ministry of Health has put systems in place for emergency procurement of needed commodities during public health emergencies. The country also has the capacity to produce vaccines and antibiotics but lacks dedicated resources and staffing for commencement of production. There are steps in place to enter agreements with manufacturers and distributors to procure medical countermeasures for use during public health emergencies. The Federal Central Stores in Lagos is a government agency that has the mandate and capacity to receive, warehouse track and distribute medical countermeasures in consultation with FMOH programmes and States. Even

though the stores do not maintain ring-fenced commodities for use in emergencies, capacity exists for warehousing and logistics management.

Recommendations for Priority Actions

- Develop a national framework for deployment and receipt of medical countermeasures and HWs during public health emergencies.
- Update the national plan for procurement, stockpiling and managing logistics for Medical Countermeasures.
- Enter into agreements and MOUs with regional and international players (countries, manufacturers) for the supply of medical countermeasures.
- Develop the national capacity for production of vaccines and antibiotics.

Indicators and Scores

R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency - Score 1

Strengths/ Best Practices

- NEMA, a dedicated agency solely created for response to emergencies, has successfully coordinated response to public health emergencies in Nigeria.
- National Agency for Food and Drug Administration and Control provides guidelines to importation of medical countermeasures in the country exists. This agency has developed guidelines that are used by the central medical stores to manage medical commodities that are donated to the country.
- An influenza pandemic preparedness plan initially prepared for response to pandemic influenza can be adapted for other pandemic diseases.
- There is existing regulation of medical countermeasures imported into the country.
- The National Biotechnology Development Agency has capacity to produce vaccines and antibiotics.

Areas which need strengthening/Challenges

- The country needs to develop a medical countermeasures and personnel deployment plan.
- Agreement with manufacturers or distributors for procuring medical countermeasures during public emergencies will better prepare the country.
- Regional/international countermeasure procurement, sharing and distributing agreements should be entered into to ease acquisition and sharing of medical countermeasures.
- There is need to stockpile medical commodities for public health emergencies.
- Logistics and security for medical countermeasures should be established.

R.4.2 System is in place for sending and receiving health personnel during a public health emergency - Score 1

Strengths/ Best Practices

- There is experience with deployment of technical personnel to support EVD response in Liberia and Sierra Leone.
- A rich pool of human resources exists that may be mobilized during local and international emergencies.
- The country has health professional regulatory bodies that have procedures in place for health professionals who wish to work in the country, including during emergencies.

Areas which need strengthening/Challenges

- Development of a personnel deployment plan to guide future receiving or sending of technical personnel

- Development of a training curriculum for use in emergencies by deployed personnel

- An inventory of technical personnel should be developed. The identified personnel should be appropriately trained for future deployment

Risk communication

Introduction

Risk communications should be a multilevel and multifaceted process which aims at helping stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events, such as disease outbreaks. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, including the voice of the affected population.

Communications of this kind promote the establishment of appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating the information through appropriate channels is essential. Communication partners and stakeholders in the country need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision-making are essential for building trust between authorities, populations and partners. Emergency communications plans should be tested and updated as needed.

Target

State Parties use multilevel and multifaceted risk communication capacity. Real-time exchange of information, advice and opinions between experts and officials or people who face a threat or hazard (health or economic or social wellbeing) to their survival, so that informed decisions can be made to mitigate the effects of the threat or hazard and protective and preventive action can be taken. This includes a mix of communication and engagement strategies, such as media and social media communications, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

Nigeria level of capabilities

Nigeria's risk communication core capacity is currently at average level but has a very strong chance of rising in a short time due to wide human capacity in different ministries, departments and agencies at national, state and local levels of government. Most ministries have risk communication capabilities. A working group has helped to bring all risk communication actors under one roof. Capacity to coordinate is being partly cultivated through ongoing training in Kaduna State. This coordination should help country articulate appropriate institutionalization and funding.

Coordination is key to ensuring risk communication is firmly institutionalized across involved agencies of government, which may result in resource mobilization for sustainable action. Risk Communication is a specialized area of communication with emerging theories, practices and models. The country needs to identify and support talents and leaders who will continue to drive the coordination.

Evidence backed risk communication practices will emerge stronger in the near future as coordination strengthens; this will also allow for resource harmonization as is evident today as there are existing capacities; albeit in multiple fragment places, with most working in silos. When these activities are properly coordinated and capacities are built, the process of gathering evidence to support what to sustain or drop is key to strengthening core capacity.

Recommendations for priority actions

- Develop a multi-sectoral and multi-hazard risk communication strategy and emergency plan.

- Provide training on an all-hazard approach using a train-the-trainer model involving social scientists and other experts.

- Develop a Monitoring and Evaluation process to provide feedback into the programme for improvement.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.) – Score 1

Strengths/best practices

- Several planning models are available in different offices of the government. This makes it easy to adapt during outbreaks, and even during multi-year, long-term plans.

- The meningitis A CSM plan was developed and implemented in good time and is currently allowing multi-actor scaling.

Areas that need strengthening/challenges

- Review of planning to include new methods like social media.

- Multi-sector collaboration and participation at planning level is important.

- Funding has always been a challenge; most plans have not been financed and this continues to query the acceptability of assumptions of the overall system

R.5.2 Internal and partner communication and coordination – Score 3

Strengths/best practices

- Clear definition of functions of ministries, departments and agencies made it easy to form a multi-sector working group for risk communication. The working group developed a scaled-up national CSM Risk Communication Plan which is being implemented as a collective, bringing all members of the working group together for implementation.

Areas that need strengthening/challenges

- Supporting involved parties (ministries, departments and agencies, civil society organizations, etc.) to create dedicated desks and personnel to further institutionalize the process.

- Members of the working group are task shifting which makes it hard to ensure quality participation.

- Coordination with the animal health, agricultural and food safety sectors can be improved

R.5.3 Public communication – Score 2

Strengths/best practices

- Wide reach and influence of key public national media exists under the government owned Ministry of Information.

- Regular press releases during disease outbreaks targeted at key national media ensured appropriate reach across the country in multiple languages.

- There has been proactive outreach to communities prior to potential outbreaks of Lassa fever, CSM and cholera.

RESPOND

Areas that need strengthening/challenges

- Supporting sub-national structures in coordinated public communication function needs to be improved.

- Public communication functions need better funding for guaranteed implementation and impact.

- There needs to be an all-hazard approach for risk communication.

R.5.4 Communication engagement with affected communities – Score 2

Strengths/best practices

- Federal structure allows for clear governance around multiple stakeholders.

- There is an existing mechanism of engagement with sub-national structures with long experience.

- Based on data from federal government, States participate in developing Information, Education and Communication materials and stakeholder engagement which yields nationwide output which is achieved in record time.

- There are more than 200,000 in the National Service Corps, who can help transmit information to affected communities.

Areas that need strengthening/challenges

- Coordination at the centre and ensuring sub-national structures own and finance the equivalent activities.

R.5.5 Dynamic listening and rumour management – Score 3

Strengths/best practices

- Existence of multiple event based surveillance systems; which can serve for multiple events and can easily be adapted from event to event.

- There is a decentralized community-based rumour reporting system through community informants who are able to report and investigate rumours and events. They may not be able to respond but they generate quality listening and reporting of rumours.

Areas that need strengthening/challenges

- Multi-event all year-round dynamic event monitoring at community level. At the moment, the structure is fragmented for conditions like AFP. This is resource intensive, for both digital and non-digital systems; the country needs to look critically at sustainable models

OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY

Points of entry (PoE)

Introduction

All core capacities and potential hazards apply to "points of entry" and thus enable the effective application of health measures to prevent international spread of diseases. States Parties are required to maintain core capacities at designated international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings), which will implement specific public health measures required to manage a variety of public health risks.

Target

States Parties designate and maintain core capacities at international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings) that implement specific public health measures required to manage a variety of public health risks.

Nigeria level of capabilities

Port Health Services are coordinated by the Division of the Public Health Department of the Federal Ministry of Health. It was established in 1925 in response to the Plague epidemic which started in Europe in the 18th century and later spread to West Africa. The quarantine Act enacted in 1926 is the enabling law. There is a competent authority at 6 airports, 5 seaports and a number of ground crossings and trans-border markets. However, none of these PoEs has been formally designated. IHR Core Capacity Assessment has been conducted at five PoEs using the WHO tool. The Programmes plan to address identified gaps and build core capacities.

There is ongoing screening of travellers, baggage, goods, and conveyances at the PoEs by the competent authority. Following the EVD outbreak in DRC Congo in May 2017, Murtala Mohammed Airport (MMIA) and Nnamdi Azikiwe International Airport (NAIA) have activated their Public Health Emergency Contingency Plans with scaling up routine traveller screening to include screening for fevers using thermoscans. A significant number of PoEs have access to medical and diagnostic facilities either on site or through linkages with nearby health facilities. MMIA, NAIA and Mallam Aminu Kano International Airport (MAKIA) airports have access to personnel and equipment to facilitate transfer of ill travellers to their designated referral facilities. Two airports (NAIA, MAKIA) have Memoranda of Collaboration with referral facilities for access to appropriate medical facilities. The other PoEs are working on similar arrangements.

The five international airports and some ground crossings have inspection programmes to ensure the environment and facilities used by travellers are maintained in a sanitary and safe condition. Food safety measures are in place that include testing food handlers. At the same time, the Nigerian Ports Authority, the Federal Airport Authority of Nigeria and Nigerian Customs Service have vector control programmes for Sea ports, Airports and land crossings respectively. The environmental health personnel at the PoEs conduct oversight of these programmes that have been assigned to third party agencies. These personnel also board and inspect conveyances at the PoEs.

OTHER

MMA, NAIA, MAKIA, Seme and Idiroko land crossings are linked as non-focal reporting sites on the national surveillance system.

Three PoEs (MMA, NAIA, and Idiroko ground crossing) have functional Public Health Emergency Contingency Plans developed by a multi-stakeholder team. The plans are integrated with other emergency plans where they exist. The process of development of these plans was led by Port Health Services. The plans at all three PoEs have been tested via table-top exercises while the plan at MMIA has been tested through two live situations involving importation of human remains. Reports of these exercises have been shared with key stakeholders. There are ongoing efforts to develop contingency plans at Seme ground crossing and MAKIA. A draft national Public Health Emergency Contingency Plan for PoEs exists and awaits completion.

The country has a National Aviation Public Health Emergency Preparedness Plan which was developed by a multi-stakeholder team led by the Nigerian Civil Aviation Authority. This plan that is integrated with the Public Health Emergency Contingency Plans at MMIA, Lagos and NAIA, Abuja has been disseminated to stakeholders.

Recommendations for priority actions

- Urgently, designate PoEs as guided by IHR (2005) Articles 20 and 21
- Review the legislation and policies on PoEs e.g. the old quarantine act
- Build/sustain IHR capacities as set forth in Annex 1a and 1b of the IHR (2005)
- Build technical capacity for port health service
- Develop the national public health emergency Contingency plan for PoEs

Indicators and scores

PoE.1 Routine capacities established at points of entry – Score 1

The country would have been scored at Capacity level 4 if PoEs had been designated. Currently no PoE has been designated.

Strengths/best practices

- Port Health Services, exist at about 69 major PoEs in Nigeria that include 5 international airports and 6 seaports.
- These PoEs have trained personnel who can detect, assess, report and respond to illness of concern and other public health hazards.
- There is ongoing screening for public health hazards at the main PoEs with scaling up of screening to address evolving public health situations locally and globally.
- Major PoEs (that include all international airports and sea posts) have access to medical facilities either on- site or through linkages to off -site health facilities.
- The main PoEs have equipment and arrangements in place for safe transfer of ill travelers.
- Public health personnel at POEs are providing oversight for vector control, food and water safety, general sanitation and hygiene of facilities and inspection of conveyances. This is done through ongoing collaboration with the multiple stakeholders at POEs and third party agencies that have the task of conducting these activities.
- PoEs submit weekly reports to the States and to NCDC on IDSR priority diseases, condition and events, and on other incidences

Areas that need strengthening/challenges

- There is need to move quickly to designate PoEs within the guidelines of the IHR (2005). The country would have scored higher for this indicator if PoEs had been designated.

- All PoEs should have administrative and documented agreements with their respective referral facilities.

- Strengthening the capacity of the referral health facilities to function fully as infectious disease hospitals.

- Strengthening the routine capacities of ground crossings as previous assessments have established that gaps exist.

- Strengthening the technical capacity of personnel working at PoEs through training.

- Developing national level policy position on yellow fever screening and vaccination at PoEs.

- The country has an enormous amount of manned and unmanned points of entry (porous borders). There is need to draw up a plan to man the PoEs within the resources available, including providing more technical personnel and infrastructure for the implementation of IHR (2005) and the PoEs.

PoE.2 Effective public health response at points of entry – Score 1

Strengths/best practices

- Three POE (two international airports and one ground crossing) have specific Public Health Emergency Contingency Plans.

- A National Aviation Public Health Preparedness Plan exists. The plan is integrated with the Public Health Emergency Contingency Plan and Airport Emergency Plans where they exist.

- A Draft National Public Health Emergency Contingency Plan for PoEs exists. This plan is linked to other Plans.

- A Draft National Port Health Policy exists.

- Three airports and 2 land crossings have had structured IHR POE Core Capacities Assessments to assess gaps and areas requiring strengthening.

- Regular simulation exercises (table top and real) are conducted at POEs to test the contingency plans.

Areas that need strengthening/challenges

- The evaluations of response to public health events or emergencies at PoEs have not been published.

- Developing POE specific contingency plans for more PoEs.

- Finalizing the draft National Public Health Emergency Contingency Plan for POEs .

- Finalizing the National Port Health policy.

- Strengthen referral linkages through overarching administrative agreements and MOUs between POEs and health facilities.

- Review and revision of legislation to back Port Health Services and other public health functions at PoEs.

Chemical events

Introduction

Timely detection of, and effective response to potential chemical risks and/or events require collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal. This would entail that State Parties need to have surveillance and response capacity to manage chemical risk or events and effective communication and collaboration among the sectors responsible for safety.

Target

States Parties with surveillance and response capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

Nigeria level of capabilities

Nigeria has national regulations in effect to address the use of hazardous chemicals and has guidelines for the establishment of Poison Information, Control and Management Centres in Nigeria.

Recommendations for priority actions

- Establish Poison Information Control and Management Centres in the Country.

- Develop guidelines and protocols for Chemical surveillance

- Map chemical risk and implement routine surveillance for Chemical events.

- Establish required multi-sector capacity for response to chemical events.

- Perform an inventory of chemicals with the Toxicology Laboratory of Nigeria in collaboration with INTOX

Indicators and scores

CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies – Score 1

Strengths/best practices
- The Country has National Guidelines for establishment of Poison Information Control and Management Centres in the Country.

- The National Policy on Chemicals Management determines the roles and responsibilities of Ministries, Departments and Agencies during Chemical emergencies.

- Chemical Regulations are domiciled in relevant agencies such as NAFDAC and National Environmental Standards and Regulations Enforcement Agency.

- The Laboratories visited have adequate equipment and competent personnel for chemical analysis during Chemical emergency.

Areas that need strengthening/challenges
- National legislative mechanisms need to be reviewed and updated relating to chemical issues.

- Nigeria is developing guidelines and manuals for surveillance, assessment and management of chemical events, intoxication, and poisoning.

- Establishment of an inter-agency emergency response squad/team on chemical events is critical, as is implementation and enforcement of existing regulations.

- Provision of chemical incidence surveillance should be standardized and multisectoral.

- Allocation of funds must be sufficient to address chemical risk mitigation and response for Nigeria.

CE.2 Enabling environment in place for management of chemical events – Score 2

Strengths/best practices

- There a National Chemical Profile for Chemical Management in the Country.

- There is Chemical legislation which is domiciled in National Environmental Standards and Regulations Enforcement Agency and NAFDAC.

- There is a National Committee on Chemicals Management which coordinates Chemical safety and there is a multi-sectoral coordination mechanism for Chemicals safety.

Areas that need strengthening/challenges

- Strengthening multisectoral coordination mechanisms should be a priority in relation to chemical events and response.

- Chemical emergency guidelines and manuals for control of Chemical emergencies should be developed and exercised.

- The Chemical Information Exchange Network and chemical database should be resourced and maintained.

OTHER

Radiation emergencies

Introduction

To counter radiological and nuclear emergencies, timely detection and an effective response towards potential radiological and nuclear hazards/events/emergencies are required in collaboration with sectors responsible for radiation emergency management.

Target

States Parties with surveillance and response capacity for radiological and nuclear hazards/events/emergencies. This requires effective communication and collaboration among the sectors responsible for radiological and nuclear emergency management.

Nigeria level of capabilities

Nigeria is a signatory to key international regulations and has registered capabilities and functional areas under the International Atomic Energy Authority Response and Assistance Network which include source search and recovery, radiation survey, environmental sampling and analysis, radiological assessment and advice, and dose assessment. However, these capabilities have not been called upon by the international community.

Internally, Nigeria has a well-developed legislative framework for the control of radiation sources, radiation emergencies. The designated responsible authority for implementation of these regulations in Nigeria is the Nigerian Nuclear Regulatory Authority (NNRA). The NNRA works in partnership with the National Emergency Management Agency to coordinate the response to radiation emergencies. A large number of multi-sectoral stakeholders with responsibilities in the preparedness and response to radiation events have been identified and response is coordinated through a National Nuclear and Radiological Emergency Plan. Although this plan is regularly reviewed and updated, testing has been limited to internal drills within licensed premises and the plan has never been tested through planed multi-agency exercises or in response to an actual radiation incident.

Recommendations for priority actions

- Test the National Nuclear and Radiological Emergency Plan.

- Improve detection and response capability by training staff, equipping and training designated hospitals and enhancing detection capabilities with radiation monitors and other detection equipment.

- Develop coordinated systematic information exchanges between stakeholders including health by improving coordination with the IHR focal point.

Indicators and scores

RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies – Score 3

Strengths/best practices
- Nigeria has a well-developed legislative framework for the control of radiation sources and the prevention and detection of radiation and nuclear emergencies, with clear legislation covering licensed applications, transport, disposal and used in specific industries.

- Guidelines and SOPs are developed and regularly updated for management of emergencies.

Areas that need strengthening/challenges

- Closer communication and coordination between the regulatory authority and the national IHR focal point is desirable.

- Improve capability of designated laboratories for detection and systematic analysis of radiation emergency situations.

- Enhance human resource capabilities of key stakeholders in emergency response.

RE.2 Enabling environment in place for management of radiation emergencies – Score 3

Strengths/best practices

- Nigeria has an up to date multiagency response plan, the Nigeria National Radiation Emergencies Plan.

- Coordination and leadership of the response to a radiation incident is clearly identified, NEMA leads with support from the NNRA.

- Facilities for decontamination

Areas that need strengthening/challenges

- The Nigeria National Radiation Emergencies Plan has never been tested through exercises or actual incidents

- Monitoring equipment have become degraded

- None of the designated hospitals have actual capacity to treat victims of radiation incidents

Appendix 1: JEE background

Mission place and dates

Abuja, Nigeria; 12 to 20 June, 2017

Mission team members:

Names	Country	Agency or Affiliate Multilateral
Ambrose Talisuna (Team Lead)	Congo	WHO Regional Office for Africa
Fredrick Angulo	USA	US Centres for Disease Control
Mekdim Ayana	Burkina Faso	WHO Regional Office for Africa
Rachel Idowu	USA	US Centres for Disease Control
Hilde Kruse	Rome	FAO
Susan Weekly	USA	Department of Defence
Ebere Okereke	England	PHE
Shikanga Otipo	Sierra Leone	WHO Sierra Leone Country Office
Masayuki Saijo	Japan	JICA
Roland K. Wango	Congo	WHO Regional Office for Africa

Objective

To assess (host country's) capacities and capabilities relevant to the 19 technical areas of the JEE tool for providing baseline data to support (host country's) efforts to reform and improve their public health security.

The JEE process

The JEE process is a peer-to-peer review. The entire external evaluation, including discussions around the scores, the strengths, the areas that need strengthening, best practices, challenges and the priority actions should be collaborative, with JEE team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and irreconcilable disagreement between the external team members and the host country experts, or among the external, or among the host country experts, the JEE team lead will decide the outcome; this will be noted in the final report along with the justification for each party's position.

Limitations and assumptions

- The evaluation was limited to one week, which limited the amount and depth of information that could be managed.
- It is assumed that the results of this evaluation will be publically available.
- The evaluation is not just an audit. Information provided by <host country> will not be independently verified but will be discussed and the evaluation rating mutually agreed to by the host country and the evaluation team. This is a peer-to-peer review.

Supporting documentation provided by host country

National legislation, policy and financing

Relevant documentation

- 1999 constitution of the Federal Republic of Nigeria.
- National Health Act 2014, Federal Ministry of Health.
- National Policy on Food Safety and its Implementation Strategy, (2014), Federal Ministry of Health
- National Guidelines on Establishment of Poison Information, Control and Management Centres in Nigeria (2012),Federal Ministry of Health
- National Primary Health Care Development Agency, Service Charter (SERVICOM), Federal Ministry of Health
- Federal Ministry of Finance, SERCOM charter, Pg. 27- 28
- Federal Government of Nigeria, GIFMIS- AIE MANUAL/LINES, 2012- 2016 budgets.
- Ukwuije N.F (2017) Institutional Arrangement for Health Financing Reforms: Recommendation for States (2017).
- Ukwuije N.F (2017). National Health Accounts (NHA) 2006-2014: Key findings and policy implication.
- IDSR Technical Guidelines (WHO) march 2013
- International health Regulations (WHO) 2015
- National Policy on IDSR Federal ministry of Health December 2010
- National capacity Monitoring IHR (WHO) indication scoring from 2011-2016.
- Emergency preparedness and differentiated action plan for the surveillance and control of highly pathogenic Avian Influenza in Nigeria. Sept, 2006
- Integrated National Avian and Pandemic Influenza response plan, 2007-2009
- Rabies Elimination guidelines, October 2016
- Lassa fever guidelines
- National Policy on Food Safety and It Implementation Strategy, 2014
- National Policy Guidelines on Food Sanitation, April 2016
- National Environmental Sanitation Policy, January, 2005
- Official Gazette National Environmental Health Practices Regulations, 2016
- NAFDAC Guidelines and Regulations on Food Fortification 2005, Imported Regulated Food Products at Ports of Entry in Nigeria, Food and Water Manufactured in Nigeria, Registration of Imported Food Products in Nigeria, Export of Food Commodities, Exportation of Regulated Products, Issuance of Export Approval on Cigarettes & Finished Food Seasoning For Machine Trials Prior to Import of Machine;
- Emergency Preparedness and Response Plan For Highly Pathogenic Avian Influenza (HPAI) in Nigeria (human health component, 2015)
- National Contingency Plan (NEMA)
- Draft Bill For An Act To Establish The Nigeria Public Health (Quarantine, Isolation And Emergency Health Matters Procedure) Act
- Federal Road safety emergency response guideline
- Nigeria National pandemic Influenza Preparedness and response Plan,
- Report of the Nigerian Pandemic Disaster Response Tabletop Exercise
- National Contingency Plan on infrastructural resuscitation (2010)

- NAFDAC guidelines for importing drugs
- www.fmoh.gov.ng
- www.nafdac.gov.ng
- www.nesrea.gov.ng

IHR coordination, communication and advocacy

Relevant documentation

- International Health Regulations (WHO) 2015
- National Policy on IDSR Federal Ministry of Health December 2010
- IHR core capacity Monitoring framework-Questionnaire for monitoring progress in the implementation of IHR core capacities in states parties 2015-2016
- National Capacity Monitoring IHR (WHO)
- Nigeria IHR Desk Review Report 23-28 April 2012

Antimicrobial resistance

Relevant documentation

- National Action Plan for Antimicrobial Resistance 2017-2022
- National Laboratory Assessment Report Draft, 2017
- Guidelines for Programmatic Management of Drug Resistant Tuberculosis in Nigeria
- Infection Control Policy & Activities for National TB and Leprosy Training Centre, Zaria, Nigeria
- Integrated Biological and Behavioural Surveillance Survey (IBBSS) 2014, NASCAP, Federal Ministry of Health
- National Policy for Infection prevention and control, Federal Ministry of Health, November 2013
- National Infection prevention and control strategy, Federal Ministry of Health, November 2013

Zoonotic diseases

Relevant documentation

- Emergency preparedness and differentiated action plan for the surveillance and control of highly pathogenic Avian Influenza in Nigeria. Sept, 2006
- Integrated National Avian and Pandemic Influenza response plan, 2007-2009
- Rabies Elimination guidelines, October 2016
- Livestock population estimate (2010-2016). Federal Department of Animal Husbandry Services. Estimates based on projection of report on National Agricultural Sample Survey (NASS), 2011
- FMARD, Fed Dept of livestock and NADIS. Vet-epid e-Newsletter. Dec, 2016 Vol 1(2), pp 1-9
- OIE. Annual Animal Health report. Jan- Dec, 2016. Terrestrial and Aquatic.
- OIE. Training on the world animal health information system (WAHIS) for national focal points for Animal Disease Notification to the OIE. (English speaking Africa and Middle East). 1-3 Nov, 2016

Food safety

Relevant documentation

- National Policy on Food Safety and It Implementation Strategy, 2014

- National Policy Guidelines on Food Sanitation, April 2016
- National Environmental Sanitation Policy, January, 2005
- Official Gazette National Environmental Health Practices Regulations, 2016;
- NAFDAC Guidelines and Regulations on Food Fortification 2005, Imported Regulated Food Products at Ports of Entry in Nigeria, Food and Water Manufactured in Nigeria, Registration of Imported Food Products in Nigeria, Export of Food Commodities, Exportation of Regulated Products, Issuance of Export Approval on Cigarettes & Finished Food Seasoning For Machine Trials Prior to Import of Machine;
- Proposed Animal Disease (Control) Act 2017
- Sanitary Standard Operating Procedure (SOP) & Guidelines for Abattoirs and Slaughter House Facilities
- Institute of Public Analysts Act, 30th December, 1992 CAP 116

Biosafety and biosecurity

Relevant documentation

- National Biosafety (Implementation, Etc.) Regulations, 2017
- National Biosafety Management Agency Act, 2015
- Biosafety Guidelines
- Nigeria Checklist For Biosafety Physical Containment
- Biodefense Research Programme

Immunization

Relevant documentation

- Immunization Basic Guide
- Basic Guide for Routine Immunization Service Providers
- Nigeria National Immunization Policy
- Comprehensive Multi-year Plan (cMYP 2016-2020)
- Child right act 2003
- National Health Policy (2016)
- Ward Minimum Health Care Package
- Integrated Measles Campaign Coverage Survey
- Measles Vaccination Campaign Study (2016)
- Midterm Review of The Global Vaccine Action Plan (2016)
- Nigerian Routine Immunization Data Quality Improvement Plan
- Health facilities vaccine Management Tools
- Measles vaccination Coverage Survey (2016)
- NPHCDA Cold Chain Equipment Report 2013
- MNCH Guideline
- Monthly RI Feedback
- Walk through Micro-plan
- NICS/MICS
- MNCH Guideline
- EPI Review Report

National laboratory system

Relevant documentation

- Nigeria National Medical Laboratory Services Policy
- Nigeria Medical Laboratory Strategic Plan
- Nigeria national strategic plan for TB
- Nigeria national strategic plan for malaria
- World malaria report 2015
- Malaria indicator survey 2015
- National TB & leprosy control program
- National biosafety management agency ACT 2015
- MLSCN Laws
- MLSCN HS code for IVD regulation
- National external quality assessment laboratory handbook
- Number of registered med. Laboratories per states in Nigeria
- Guidelines for MLSCN accreditation service
- Regulation for minimum practice standards 2014
- Rules of professional conduct
- Med. Lab regulations for inspection, approval, monitoring & accreditation
- MLSCN approved guidelines for lab designs
- Guidelines for lab continuous quality improvement
- National guidelines for setting a med. Lab in Nigeria
- National lab audit checklist
- Lab accreditation checklist
- Checklist for med. Lab inspection
- ILAC affiliation document
- Schematic flow for processing of CSF samples in Nigeria
- Summary of Influenza Testing Process
- SOP for PPE
- SOP for sample packaging and transportation
- NISS site monitoring and assessment tool
- Malaria SOP
- TB SOP
- HIV SOP
- Influenza testing SOP
- EQA certificates for National Influenza Reference Laboratory, Abuja

Real-time surveillance

Relevant Documentation

- Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria, 2013
- IDSR Training modules

- SOPs for IDSR 002 Weekly Data Validation; IDSR 003 Monthly Data Validation
- IDSR Supervisory Checklist
- NCDC SOP for event based surveillance
- NADIS Reporting forms
- Samples of surveillance outputs (NCDC Weekly Epidemiological report)' Vet-Epid Newsletter)

Reporting

Relevant documentation

- IDSR Technical Guidelines 2013
- IDSR 003 reports for 41 notifiable disease 2011-2016
- National policy on IDSR
- International Health Regulations (2005)
- Nigeria-OIE reports

Workforce development

Relevant documentation

- The Nigeria Field Epidemiology and Laboratory Training Program
- The Federal Ministry of Health, Nigeria
- The Federal Ministry of Agriculture and Rural Development
- Nigeria Health Workforce Policy Report of 2012

Preparedness

Relevant documentation

- National health emergency preparedness and response policy and response Standard operation procedure
- Nigeria National pandemic Influenza Preparedness and response Plan
- Armed Forces of Nigeria Pandemic contingency plan
- NEMA Disaster Management plan
- NEMA National Contingency Plan
- NEMA National Crises Management Procedures
- NCDC - Interim VHF Preparedness plan
- Office of the National Security Adviser - National security strategy

Emergency response operations

Relevant Documentation

- National Emergency Preparedness and Response Policy – Federal Ministry of Health
- Nigerian National Pandemic Influenza Preparedness and Response Plan
- NCDC draft EOC operating procedures
- Armed Forces of Nigeria Pandemic Contingency Plan
- National Crises Management Procedures – Office of the National Security Advisor

- Corps Medical and Rescue Services Procedures – Federal Road Safety Corps
- National Disaster Response Plan – National Emergency Management Agency

Linking public health and security authorities

Relevant documentation

- Statement by Nigerian delegation at the Meeting of governmental experts of the Biological weapons convention Geneva, Switzerland (2008)
- Nigerian Experience of The Biological and Toxin Weapons Convention at the meeting of the state's parties to the convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxin weapons and on their destruction (2007)
- MoU between NESREA, NOA and NEMA
- Emergency Preparedness And Response Plan For Highly Pathogenic Avian Influenza (HPAI) in Nigeria (human health component, 2015)
- Nigerian Quarantine Act (1926)
- National Contingency Plan (NEMA)
- Bill For An Act To Establish The Nigeria Public Health (Quarantine, Isolation And Emergency Health Matters Procedure) Act. To Provide For And Regulate The Imposition Of Quarantine, Isolation And To Make Other Provisions For Preventing The Introduction Into And Spread In Nigeria, And Regulate Steps For The Containment In Nigeria, And The Transmission From Nigeria, Of Dangerous Infectious And Communicable Diseases, Organisms And Agents.

Medical countermeasures and personnel deployment

Relevant Documentation

- National Contingency Plan on infrastructural resuscitation (2010)
- National Emergency Management Agency (NEMA) emergency response standard operating procedures (2010)
- National Disaster Management Framework (2010)
- NAFDAC guidelines for importing drugs as seen on the NAFDAC website (2017) http://www.nafdac. gov.ng/index.php/guidelines/drug-guidelines
- The National Pandemic Influenza Preparedness and Response Plan (2013)
- Interim VHF preparedness and response plan (2017)
- NABDA plan of action and competencies as seen on the NABDA website (2017) www.nabda.gov.ng
- UN Report on Global response to Health Crises (2016)
- Emergency Preparedness Plan for Avian Influenza (2015)

Risk communication

Relevant documentation

- Multi Hazard Risk Communication Plans - Lassa VHF Meningitis
- Action Plan - Lassa Fever Communications - NGR 2016 Nov
- Meningitis OBR - Communication & Social Mobilization Support - 02-04-2017
- Vhf Strategic Action Plan Nov. 28 - Communications Extracted
- Multi Lingual IEC Materials on Lassa Fever (Posters & Brochures), 7 Posters, 3 Brochures

- Nigeria National Pandemic Influenza Preparedness and Response Plan – Communications And Public Education - Page 61

- National Distribution Plans - Lassa Fever Communication Materials

- Video - connect centre TV advert

- Summary LF Outbreak Containment Report 1st July   2016(1) - CHALLENGES - Page 7

- Multilingual meningitis radio jingles

- Meningitis Stakeholders Engagement & Inclusion

- Report-Of-Media - Stakeholder Engagement

- Reports; Meeting with Religious Leaders, health professionals, and CSOs - Stakeholder Engagement

Points of entry

Relevant documentation

- MMIA, NAIA, Idi-iroko ground crossing Post-Baseline IHR assessment Report

- MAKIA and Seme Baseline IHR assessment Report

- MOUs between MMIA and NAIA and referral facilities

- Copies of Mutual Aid Agreement at NAIA, MMA and MAKIA

- Documented Standard Operating Procedures from MMIA and NAIA PHECPs (Inspection, decontamination, transportation, management, identification of ill traveler, communication/notification, handling human of remains)

- The National Civil Aviation Public Health Preparedness Plan

- MMIA, NAIA, Idi-iroko Public Health Emergency Contingency Plans

- Port Health Services Standard Operating Protocols

- Referral facilities Assessment Reports

- Evidence of communication between referral facilities and PHS (letters, emails, etc)

- Copies of IDSR reports from POEs

- Table top exercise reports from MMA (2), NAIA(1) and Idiroko (1)

- PHS Draft Policy Document

- The Nigerian Quarantine Act (1926)

- The resolution of the NCH on International Certificate of Vaccination on Yellow Fever

- FAAN contractual documents/Reports of vector control activities from FAAN/vendors/PHS

Chemical events

Relevant documentation

- National Profile on Chemicals Management

- Lead Poison Report in Niger and Zamfara State

- Chemical Event Technical Tool

- National Chemical Regulations

- National Guidelines for establishment of Poison Information, Control and Management Centres in Nigeria

- National Disaster Response Plan

- Chemical Regulation

- Report of Field assessment visits of Chemical event Technical group held in Lagos from 14th – 17th May, 2017

Radiation emergencies

Relevant documentation

- CERT Emergency Plan
- CERT Operational Radiation Safety
- NHA Local Rules for Radiation Protection in the Radiology Department
- NHA Local Rules for Radiation Protection in Radiotherapy & Oncology Department
- Protocols on Nuclear Medicine Procedures
- Protocol for the Treatment of Radiation In juries
- The Convention on Early Notification of a Accident (Legal Series No 14, IAEA, Vienna, 1986
- The Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency. (IAEA-INFCIRC/336, IAEA, Vienna, 1986
- IAEA Manual For First Responders to Radiological Emergency ü
- IAEA Response and Assistance Network (RANET)
- IAEA EPR-Method 2003
- Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency (IAEA TECDOC-953)
- IAEA Preparedness and Response for a Nuclear or Radiological Emergency. No GSR-Part 7.
- IAEA Guidelines On the Harmonization Of Response And Assistance Capabilities For A Nuclear Or Radiological Emergency