



FEDERAL MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

FEDERAL MINISTRY OF ENVIRONMENT

FEDERAL MINISTRY OF HEALTH

National Action Plan for
**ANTIMICROBIAL
RESISTANCE**

2017-2022



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**ANTIMICROBIAL
RESISTANCE**

2017–2022



**FEDERAL MINISTRIES OF AGRICULTURE AND
RURAL DEVELOPMENT, ENVIRONMENT AND HEALTH**

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Foreword

Antimicrobial resistance (AMR) has gained worldwide recognition in recent years with there being few public health issues of greater importance. Drug-resistant infections are on the rise, resulting in at least 700,000 deaths annually worldwide. Systematic misuse and overuse of antimicrobials in human and animal health, poor infection, prevention and control systems, inadequate surveillance and lack of new drugs in the development pipeline puts local, national and global communities at risk.

The World Health Assembly adopted a Global Action Plan on antimicrobial resistance in May 2015 with member States urged to develop their own multisectoral National Action Plans that align with the Global Action Plan within two years, ending May 2017. In line with her agreement to develop a National Action Plan by May 2017, Nigeria has assured of her commitment to addressing AMR by developing her National Action Plan through a 'One Health' approach and enrolling in the Global Antimicrobial Resistance Surveillance System (GLASS).

As a precursor to the development of the Nigeria National Action Plan, an AMR working group together with other stakeholders conducted a situation analysis of AMR in Nigeria, the results of which informed the contents of the Action Plan. This plan also outlines a governance structure, which will oversee the implementation of the AMR-related activities to ensure measurable containment of resistance. Extensive collaboration among local and international stakeholders based on the 'One Health' approach (including but not limited to the human, veterinary, agricultural and environmental sectors), will enable Nigeria drive the successful implementation of this National Action Plan with a resultant change in the status quo.

The threat that AMR poses to essential medicines and health as uncovered in our situation analysis, makes AMR a top national priority for Nigeria. This document addresses all five strategic objectives of the Global Action Plan, which are to:

- Improve awareness and understanding of antimicrobial resistance through effective communication, education and training.
- Strengthen the knowledge and evidence base through surveillance and research.

- Reduce the incidence of infection through effective sanitation, hygiene and prevention measures.
- Optimise the use of antimicrobial medicines in human and animal health.
- Prepare the economic case for sustainable investment and increased investment in new medicines, diagnostic tools, vaccines and other interventions.

Several challenges exist regarding AMR containment in Nigeria. However, the development of this action plan is an important positive step in the right direction, as it aims to address the problem at all levels of governance and society. The next five years will be crucial in the successful implementation of this strategic plan and in ensuring the sustainability of this initiative in the long term. Our goal is that this plan will not only be the roadmap for AMR control, but will also aid in the monitoring of the nation's progress in reducing AMR with the ultimate result of an improvement of the health status of all Nigerians. We would like to gratefully acknowledge all the stakeholders and partners that contributed to this project and look forward to the successful implementation of the activities herein laid out.



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We are grateful for the invaluable support from the World Health Organisation (WHO) and the Center for Disease Dynamics, Economics and Policy (CDDEP) under the Global Antibiotic Resistance Partnership (GARP). We also thank our partners from the African Field Epidemiology Network (AFENET) and experts from academia for their collaborative support.

Thank you to Professors Iruka Okeke and Oladipo Aboderin, as well as all the individuals and organisations that provided expert opinion, essential input, and valuable comments on the many drafts that preceded this document. These contributions ensured the prompt development of this plan, which will guide efforts aimed at slowing down the development and impact of antimicrobial resistance on human, animal and environmental health in Nigeria and globally..

A full list of organisations contributing to this work is provided after the bibliography.

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Abbreviations and Acronyms

ACSM	Advocacy, Communication and Social Mobilisation
ADR	Adverse Drug Reaction
AFENET	African Field Epidemiology Network
AIDS	Acquired Immunodeficiency Syndrome
AMR	Antimicrobial Resistance
AMR-TWG	Antimicrobial Resistance Technical Working Group
AMS	Antimicrobial Surveillance
APIN	AIDS Prevention Initiative in Nigeria
ARI	Acute Respiratory Infections
BCC	Behaviour Change Communication
BSI	Blood Stream Infections
CBO	Community Based Organisations
CDDEP	Center for Disease Dynamics, Economics and Policy
CEO	Chief Executive Officer
CFR	Case Fatality Rate
CHW	Community Health Worker
COMO	Community Mobilisation Officer
CORP	Community Resource Person
CPD	Continuous Professional Development
CRE	Carbapenem-Resistant Enterobacteriaceae
CSMC	Communication and Social Mobilisation Committee
CSO	Civil Society Organisation;
ECOWAS	Economic Community of West African States
EDL	Essential Drugs List
ESBL	Extended-Spectrum Beta-Lactamase
FAO	Food and Agricultural Organisation
FAQ	Frequently Asked Questions
FBO	Faith Based Organisations

FCT	Federal Capital Territory
FDS	Food and Drug Services
FMARD	Federal Ministry of Agriculture
FMEnv	Federal Ministry of Environment
FMoEd	Federal Ministry of Education
FMoF	Federal Ministry of Finance
FMoH	Federal Ministry of Health
FMoi	Federal Ministry of Information
GARP	Global Antibiotic Resistance Partnership
GDP	Gross Domestic Product
GLASS	Global Antimicrobial Resistance Surveillance System
GMP	Good Manufacturing Practices
HAI	Healthcare Associated Infections
HCP	Health Care Practitioner
HIV	Human Immunodeficiency Virus
HMO	Health Management Organisation
HPD	Health Promotion Department
IEC	Information, Education, Communication
IHVN	Institute of Human Virology
IPC	Infection Prevention and Control
LGA	Local Government Area
MDAs	Ministries, Departments and Agencies
M&E	Monitoring and Evaluation
MOEBP	Ministry of Economy and Budget Planning
MOTI	Marketing On The Internet
NAFDAC	National Agency for Food and Drug Administration and Control
NAP	National Action Plan
NBCCCG	National Behaviour Change Communication Consultative Group

NCA	National Council on Agriculture
NCC	National Coordinating Centre
NCDC	Nigeria Centre for Disease Control
NCH	National Council on Health
NGO	Non-Governmental Organisation
NHIS	National Health Insurance Scheme
NHMIS	National Health Management Information System
NICA	Nigeria Infection Control Association
NIDS	Nigeria Infectious Disease Society
NIMR	National Institute of Medical Research
NOA	National Orientation Agency
NOTAP	National Office for Technology Acquisition and Promotion
NPHCDA	National Primary Healthcare Development Agency
NSA	National Security Adviser
NSC	National Steering Committee
NTS	Non-Typhoidal Salmonella
NTWG	National Technical Working Group
NUC	National Universities Commission
NUJ	Nigeria Union of Journalists
NVMA	Nigerian Veterinary Medical Association
NVRI	National Veterinary Research Institute
OIE	World Organisation for Animal Health
OOP	Out-of-Pocket
PPMV's	Patent and Proprietary Medicine Vendors
PT	Proficiency Testing
PTA	Parent-Teacher Association
PVC	Pharmacovigilance committee
OIE-PVS	OIE Performance, Vision and Strategy

REDDISE	Regional Disease Surveillance Systems Enhancement
SBCC	Social and Behaviour Change Communication
SCSMC	State Communication and Social Mobilisation Committee
SLIPTA	Step-wise Laboratory Improvement Process Towards Accreditation
SMARD	State Ministry of Agriculture
SMC	Social Mobilisation committee
SME	Small and Medium-sized Enterprise
SMoEnv	State Ministry of Environment
SMoH	State Ministry of Health
SMoI	State Ministry of Information
SQHN	Society for Quality in Healthcare
STG	Standard Treatment Guidelines
STWG	State Technical Working Group
SWOT	Strengths, Weakness, Opportunities and Threats
TOR	Terms of Reference
TWG	Technical Working Group
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
\$	United States Dollar
UTI	Urinary Tract Infection
VCN	Veterinary Council of Nigeria
VRE	Vancomycin Resistant Enterobacteriaceae
WER	Weekly Epidemiology Report
WHA	World Health Assembly
WHO	World Health Organisation



Executive Summary

Nigeria has an estimated population of 182 million people, which is expected to rise to over 200 million by the year 2025. In 2013, the life expectancy at birth in Nigeria was estimated at 54 years. Poverty is a major contributor to the worsening health status of Nigerians, which has declined over the decade. Orthodox health care services in Nigeria are provided from the private and public sectors at primary, secondary and tertiary levels. The primary health care level is entry point into the health care system and includes health centres, clinics, dispensaries and health posts. Despite rapid urbanization, health and economic inequalities continue to exist and significantly contributes to health care access. Whilst non-communicable illnesses are gaining prominence, infections continue to be the most common cause of illness and death in all parts of Nigeria. Treatment of the most common infections – malaria, tuberculosis, respiratory infections, diarrhoeal diseases and sexually transmitted infections, including HIV is presently being compromised by antimicrobial resistance. There is therefore a pressing need to contain the problem.

Antimicrobial Resistance and Governance

Antimicrobial resistance (AMR) has grown in prominence to compromise treatments for almost all human and animal diseases caused by bacteria, parasites, viruses and fungi. The most vulnerable patients bear the brunt of the impact, as AMR increases treatment costs and can also prolong illness, worsen disability and increase mortality. The precise magnitude of AMR and its true impact on health care delivery and its costs are still largely unknown.

In May 2015, the 68th World Health Assembly (WHA), recognising AMR as a threat to global health, passed WHA resolution 68.7 requesting that Member States develop or adopt country-specific action plans in line with the Global Action Plan on AMR. The Global Antimicrobial Resistance Surveillance System (GLASS) was also instituted in September 2015, five months after adoption of Global Action Plan. The

Nigerian Honourable Minister of Health, on the 26th of November 2016, approved the establishment of Nigeria's National AMR Coordinating Body at the Nigeria Centre for Disease Control (NCDC). A National AMR Technical Working Group (AMR-TWG) was created comprising stakeholders from human health, animal health, food animal production and environment sectors. The AMR-TWG was tasked with conducting a situation analysis of AMR in Nigeria and designing a National Action Plan for AMR containment in the country. The full situation analysis is contained in a separate document. This Action Plan details objectives derived from analyzing the strengths, weaknesses, threats and opportunities of the National AMR situation and making recommendations based on the five strategic objectives of the Global Action Plan on AMR.

The following priority gaps were identified;

1. Poor public awareness and weak coordination of AMR awareness activities by government and partners such as vertical disease control programmes.
2. Poor 'One Health' coordination of animal and human national disease surveillance systems, non-existence of a national AMR laboratory surveillance system and no dedicated funding for AMR control activities
3. Non-existence of a national Infection Prevention and Control (IPC) coordinating body or guidelines, and poor budgetary support for IPC activities in health facilities
4. Lack of antimicrobial stewardship in both private and public sectors
5. A complete absence of studies on the health and economic impact of AMR in Nigeria and poor coordination of research on antibiotic use

Strategic Plan

The goal of the action plan is to reduce, prevent and slow the evolution of resistant organisms and their impact on health care while ensuring optimal use and improved access to effective, safe and quality-assured antimicrobials for continued successful management of infections.

The plan incorporates the one health approach and aims at implementing proposed actions by strengthening and utilizing existing national systems or by creating new structures where they do not exist. The focus areas are;

1. Increasing awareness and knowledge on AMR and related topics
2. One health AMR surveillance and research
3. Infection Prevention and Control in the tripartite sector
4. Promote rational access to antibiotics and Antimicrobial stewardship
5. Invest in research to quantify the cost of resistance and develop new antimicrobials and diagnostics

This document also details the strategic interventions for each objective, activity, budget and the monitoring/evaluation plan for all activities.

1

Background

Country Profile

Nigeria is the most densely populated country in Africa being a federation of 36 States and a Federal Capital Territory at Abuja, operating a three-tiered government structure. It has an estimated population of 182 million people which is expected to rise to over 200 million by the year 2025^{1,2}. The official language is English but there are about 374 identifiable ethnic groups in Nigeria with Igbo, Hausa, and Yoruba representing the major groups and languages spoken³. The country's different religions include Islam, Christianity, and traditional African beliefs. The national median age is 17.2 years and the proportion of children aged below 15 years is around 46%, while the proportion of individuals aged 65 years and older is 4%^{3,4}. The literacy rate for persons 15 years and older in 2015 was 60%⁵. In 2013, the life expectancy at birth in Nigeria was estimated at 54 years⁶. The infant mortality rate is 69 per 1,000 live births while the under-five mortality rate is 128 per 1,000 live births³. The maternal mortality ratio is 576 deaths per 100,000 live births in the country, one of the highest in the world³.

In 2015, Nigeria's Gross Domestic Product (GDP) was \$481bn with an annual growth rate of 2.7%⁷. The National Bureau of Statistics reported that the contribution of agriculture to the total GDP was 23%⁸ in that year. Poverty remains a major contributor to the worsening health status of Nigerians as 76% of its population still live on \$3.10 a day or less⁹. In the face of rapid urbanisation, health and economic inequalities continue to contribute to poor health care access^{2,3}.

Health System

Orthodox health care services in Nigeria are provided by both private and public sectors with the public health service organised into primary, secondary and tertiary levels. In 2005, it was estimated that 23,640 health facilities existed in Nigeria; 85.8% being primary health care facilities, 14% secondary and 0.2% tertiary care

institutions¹⁰. About 60% of the public primary health care facilities are in Nigeria's northern geopolitical zones¹⁰. This primary level of care is the usual entry point of communities into the health system and it includes health centres, dispensaries, and health posts which typically provide general preventive, curative and pre-referral care². Community Health Workers (CHWs) provide the majority of the services at primary care centres². Secondary care facilities provide both general medical services as well as some specialised health services². Tertiary facilities which provide the highest level of health care in the country, are also training centres for medical students and they include specialist/teaching hospitals and Federal Medical Centres². There is a tertiary facility in every State, with a few having more than one.

The National Health Policy ascribes responsibilities for primary health care to the 774 local governments, secondary care to the States and tertiary care to the federal government. At the local government level, a Chairman administers health services, assisted by an officer designated to head the health department. These officers are mandated to finance and manage primary health care facilities¹¹. The secondary health care facilities are under the purview of State Ministries of Health, which are overseen by State Commissioners of Health. Some States have a Health Management Board to specifically manage their health facilities¹¹. The responsibility for tertiary care and training lies with the Federal Government^{2,11} through the Federal Ministry of Health which is headed by the Minister. Many States periodically organise a State Council of Health meeting to obtain consensus on health issues between the local and state governments. The Minister of Health also meets with State commissioners of Health during the 'National Council on Health' meeting¹¹ to obtain consensus on health issues between the state and federal levels. Each level of government is however largely autonomous in the financing and management of its health services, though guided by policies formulated by the Federal Ministry of Health.

2 AMR Situation in Nigeria

Introduction

For the past few decades, the threat from antimicrobial resistance (AMR) has continued to grow and compromise effective treatment of infections to an ever-increasing range of bacteria, parasites, viruses and fungi. AMR has resulted in reduced efficacy of medicines making the treatment of infections expensive, difficult or even impossible. This impact is particularly felt by vulnerable patients, who may be unable to bear the associated higher costs or worsened illness, ultimately resulting in greater disability and increased mortality. Worldwide, the magnitude of the problem, its effect on animal and human health and its impact on economies are poorly documented. However, estimates record an untenably high burden that will largely be borne by low-income countries like Nigeria.

In response to this serious global public health issue, the 68th World Health Assembly (WHA) in May 2015 adopted the Global Action Plan in collaboration with the Food and Agricultural Organisation (FAO) and the World Organisation for Animal Health (OIE) as the response to control AMR. It also requested member States through WHA Resolution 68.7 to participate in an integrated global programme for the control of antimicrobial resistance. The goal of the Global Action Plan is to 'ensure continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way and accessible to all who need them'.

Antimicrobial Use and Resistance

A review of Programmatic Reports and peer-reviewed literature provided relevant information on infectious disease burden and antimicrobial resistance¹². In Nigeria, communicable diseases accounted for 66% of total morbidity in 2015. Responsible diseases include malaria, acute respiratory infections (ARI), measles, diarrhoea, tuberculosis, HIV/AIDs and neglected tropical diseases. Antimicrobials

are required to manage many of these infections. The currently recommended therapies for bloodstream infections, cholera and lower-respiratory tract infections contained in Nigeria's standard treatment guidelines have been compromised by resistance. Studies testing the susceptibility patterns of local isolates found many of the organisms predominantly or universally resistant to first-line drugs. In addition, susceptibility testing is rarely routinely performed as laboratory capacity for such activity is severely limited outside the tertiary care system.

Although the standard treatment guidelines in Nigeria for diseases such as diarrhoea and ARI recommend that antibiotics should be prescribed only on detection of systemic infection, empiric use of antimicrobials remains common. A Rational Drug Use survey conducted in 12 developing countries found that Nigeria had the highest average number of drug prescription (3.8 drugs/encounter) and third highest percentage of antibiotic prescriptions at 48%¹³.

Regarding irrational medicine use behaviour in the country, about 46.7% to 71.1% of children aged five years and were given antibiotics without prescription while only 68.3% of adults used antibiotics following a doctor's prescription. Furthermore, the percentage of antibiotics prescribed per patient encounter ranged from 26.8% to 71.1% with the highest proportion reported in children under five years of age. Underuse of antibiotics was also found to be common with about 42% of adults not completing prescribed antibiotic regimens and lower levels of confidence in prescribing antibiotics reported among prescribers with fewer years of experience. The commonest antibiotic used or prescribed were the penicillin group of antibiotics ranging from 25% to 71.2%. Metronidazole was found to be usually given empirically for diarrhoea treatment while the commonest antibiotic given for respiratory tract infection was cotrimoxazole (53.1%).

Nigeria constitutes a large market for pharmaceuticals, accounting for 60% of the volume of health products consumed in the Economic Community of West African

States (ECOWAS) sub-region, but has limited regulatory capacity. Furthermore, manufacturers and importers have vertical drug distribution channels for wholesalers, retailers and hospitals with minimal government supervision. Thus, medicines are often sold in unregistered and unlicensed premises and, in many cases, by non-pharmacists. Patent and proprietary medicine vendor (PPMV) stores also play a significant role, with over 10,000 PPMV stores found not to be registered as at 2010. Many of these stores are situated in rural areas and often sell drugs such as antibiotics, which are not on the approved medicines list for this class of retailers. In addition, itinerant drug sellers hawk unapproved and potentially poor quality medicines to the public including antimicrobial agents. Other factors contributing to the irrational use of antibiotics include the lower education level of many caregivers as well as the health insurance status of patients as those with insurance are more likely have antibiotics prescribed. Prescribers' characteristics such as years of practice and specialisation also contribute to the empirical prescription of antibiotics.

In healthcare settings within the country, urinary tract infection (UTI) prevalence ranges from 3.4%-88.5% and the associated common resistant organisms are *Pseudomonas*, *E. coli*, *Klebsiella* and *Staphylococcus*. The range of bloodstream infection (BSI) prevalence is 6.6% to 49%, whilst healthcare-associated pneumonia prevalence ranges from 1% to 86%. *Staphylococcus aureus* is the mostly implicated pathogen for BSI in adults and *Klebsiella* sp in neonates. Several of the 'priority bacteria' listed by WHO that pose the greatest threat to human health have been detected in BSI including extended-spectrum beta-lactamase (ESB)L-producing *Enterobacter* sp, methicillin-resistant *Staphylococcus aureus* (MRSA) and carbapenem resistant *Acinetobacter* sp. This is of grave concern as these bacteria which are resistant to multiple antibiotics can spread resistance genes to other bacteria. Most organisms causing UTI were found to demonstrate significant resistance to first-line drugs. High rates of resistance to Ceftriaxone were also recorded as this drug is increasingly used to treat sepsis and a range of bacterial infections.

With respect to enteric pathogens, widespread antibiotic resistance to *Escherichia coli*, Non-typhoidal *Salmonella*, *Shigella* and *Vibrio cholerae* occur in Nigeria. High antibiotic resistance rates have been reported with commonly used antibiotics such as penicillins (e.g. Amoxicillin), tetracyclines and Cotrimoxazole. Resistance proportions of up to 80 to 100%, have been reported specifically for Cotrimoxazole and the penicillins, even though the current guidelines recommend Cotrimoxazole as drugs of choice for *V. cholerae* or *Shigella* infections if indicated. It is worrisome that there are no current standard treatment guidelines for the treatment of diarrhoeagenic *Escherichia coli* in Nigeria.

Neisseria meningitidis, *Haemophilus influenzae*, and *Streptococcus pneumoniae* are highly invasive organisms responsible for considerable morbidity and mortality in Nigeria despite the availability of vaccines. The significant proportion of meningitis and pneumonia infections caused by these highly invasive organisms which are resistant to penicillin, has been of global concern. None of *Neisseria meningitidis* isolates reported in the country's AMR situation analysis were found to be resistant to Ceftriaxone, which is the drug of choice for treatment per the standard national guidelines.

Resistant bacteria are also commonly recovered from livestock in Nigeria. This includes cattle, sheep, goats, camels, pigs and poultry. Correspondingly high levels of resistant organisms are recoverable from meats and other foods such as dairy and vegetables. While it is conceivable that resistant organisms in domestic animals could have been acquired from human and other sources, the high levels of antibiotic residues in Nigerian meats and the low recovery of resistant organisms from wildlife point to antimicrobial use in agricultural and veterinary practices as the principal driver of resistance. Resistant bacteria have also been recovered from presumed potable, natural and wastewater sites. They have also been found in soils and at aquaculture sites as well as elsewhere in the environment. This illustrates

that antimicrobial resistance is highly prevalent in the country with there being an urgent need for coordinated National action on AMR in the country. As resistance is pervasive in humans, animals, food products and the environment, a 'One Health' approach to resistance containment is Nigeria's best option.

AMR Governance

AMR-related activities will be coordinated from the Nigeria Centre for Disease Control (NCDC). A National AMR Technical Working Group (AMR-TWG) and an AMR National Steering Committee (NSC) will oversee AMR-related activities within all sectors to ensure a systematic, comprehensive approach at all levels to all AMR-related activities in the country. The AMR-TWG and the NSC will include membership from relevant agencies of the Federal Ministry of Health (FMoH), the Federal Ministry of Agriculture and Rural Development (FMARD) and the Federal Ministry of Environment. The rationale is to have a governance scope broad enough to address country-specific objectives in the following focus areas:

- 1: Increasing awareness and knowledge of AMR and related topics
- 2: Building a 'One Health' AMR surveillance system
- 3: Intensifying Infection Prevention and Control (IPC) in the tripartite sectors
- 4: Promoting rational access to antibiotics and antimicrobial stewardship
- 5: Investing in AMR Research and Development

This national governance structure is expected to lead the facilitation and coordination, planning and implementation of a National Action Plan (NAP) to respond to the threat of AMR. This structure will provide a platform for the AMR programme planning and implementation, monitor progress on national AMR activities, and make recommendations based on findings.

This structure will also provide platforms for sharing knowledge, information and experience to mutually reinforce activities among sectors. Because AMR is a 'One-Health' issue, the Nigerian national AMR initiative will network among human and animal health systems, public health, the environment, food safety and disease-specific programmes. Furthermore, the national governance structure will be appropriately integrated using a 'One-Health' approach, thereby adding value to systems and programmes and collaborating with internal and external agencies essential to achieving the national AMR goal.

On the 26th of November 2016, the Honourable Minister of Health approved the establishment of a National AMR Control Coordinating Body at the NCDC in collaboration with the Federal Ministry of Agriculture and Rural Development and the Federal Ministry of Environment. This tripartite structure will provide a 'One Health' approach for the national AMR response.

The Honourable Minister also approved the convening of the National AMR Technical Working Group (TWG). The group comprises key members representing the relevant sectors, notably human health, animal health and animal production and the food and environment sectors. This membership cuts across various agencies: government, academia, regulatory bodies, professional societies, health professionals and public health entities. The TWG had their first meeting on the 16th and 17th of January 2017 and was tasked with conducting a situation analysis of AMR in Nigeria. The team also met from the 21st to 23rd of March 2017 to finalise the situation analysis and develop a zero draft of the National AMR Strategic Plan. The plan was presented to stakeholders for further finetuning electronically and at a meeting on the 19th and 20th of April 2017.

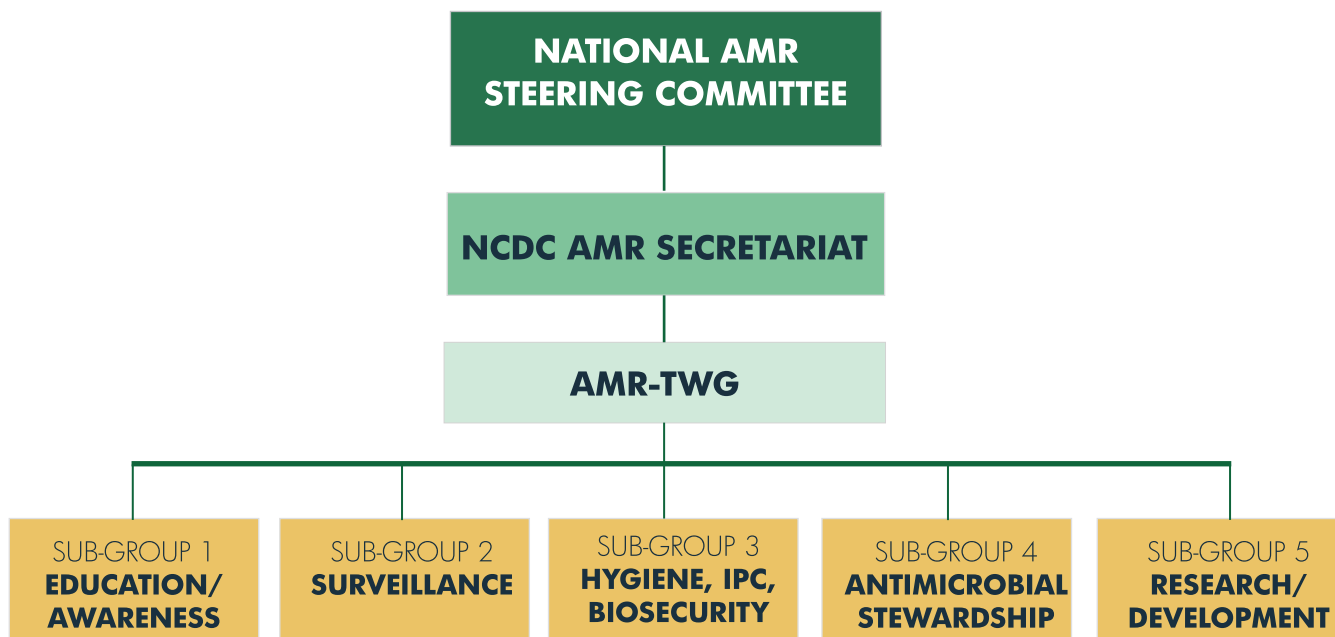
A National AMR Steering Committee will be set up to provide support and guidance for AMR control activities. The committee will include representatives of Ministries, Departments and Agencies (MDAs), Regulatory Bodies, the private sector, academia

from human, animal, environmental health and food safety institutions and partners.

The terms of reference for the Steering Committee are to;

1. Plan and set an overall direction for AMR control and prevention in Nigeria and, ensure that major goals and timelines are achieved using working groups and task forces.
2. Facilitate innovative problem-solving and open communication across multidisciplinary members and groups; encourage relationship building across all relevant networks; and, serve as a sounding board for new ideas and opportunities for growth.
3. Monitor progress, which may include tracking timelines and creating and implementing evaluation procedures; assess need for changes and report regularly to the Minister and other stakeholders.
4. Evaluate existing working groups/committees and their respective activities in relation to the goals/objectives of the national AMR surveillance programme; determine how new and existing activities will be integrated into a cohesive plan and make recommendations accordingly.

Nigeria will also establish a communication framework to ensure that all issues related to Antimicrobial Resistance management are communicated in a timely and effective manner to internal and external stakeholders as required. Multi-sectoral coordination committees will be set-up at the three tiers of government, with agencies in charge of human, animal, food safety and environmental health represented.



■ *Figure 1: Organogram of the National AMR Prevention and Control Governance Structure*

Key Achievements and Challenges

The Nigeria Centre for Disease Control in collaboration with other agencies of the Federal Ministry of Health (FMoH), the Federal Ministry of Agriculture and Rural Development (FMARD) and the Federal Ministry of Environment, supported by GARP, AFENET and WHO conducted an analysis of the AMR situation in the country using information derived from the review of ministerial and extra ministerial reports, key informant interviews, data of national control programmes, and available evidence from the literature. The AMR-TWG reviewed the resultant document and identified the strengths, weaknesses, opportunities and threats (SWOT) for AMR control and prevention in Nigeria.

TABLE 1: SWOT GRID OF AMR SITUATION ANALYSIS

STRENGTHS	<ul style="list-style-type: none"> • Existence of national health policies, regulations and guidelines on treatment of infections in humans and animals, antimicrobial use (including IPC and traditional medicine use), environment protection, food safety and vaccination • Existence of regulatory councils for health, agricultural and environmental workers • Availability of the National Health Insurance Scheme • Established disease surveillance notification structure at the NCDC • Existence of potential infrastructure for laboratory surveillance of bacterial resistance • Availability of AMR training curriculum in universities (undergraduate and postgraduate) • Presence of predominantly indigenous pharmaceutical manufacturers; some have acceptable level of compliance with WHO Good Manufacturing Practices (GMP) guidelines • Availability of a national drug policy • Establishment of national procurement policy and a dedicated procurement department • Existence of waste management guidelines (including for pharmaceutical waste) • Existence of National Health Promotion Policy and institutionalised health promotion practice in Nigeria
WEAKNESSES	<ul style="list-style-type: none"> • Propensity for corruption in healthcare fund and commodities management • Poor government insurance coverage and high out-of-pocket (OOP) expenses • Studies on economic impact of AMR in Nigeria are non-existent • Guidelines on antibiotic use in humans/animals are outdated, poorly disseminated and not adhered to, policy on antimicrobial (including alternatives) use is poorly implemented and regulatory agencies are underfunded • Limited number of accredited training institutions and health worker to population ratio is low • Poor 'One Health' coordination of animal and human national disease surveillance systems

TABLE 1: SWOT GRID OF AMR SITUATION ANALYSIS CONT'D	
WEAKNESSES	<ul style="list-style-type: none"> • Lack of antimicrobial stewardship in both private and public sectors • Weak primary healthcare systems • National committee on AMR is non-existent and there is no AMR surveillance system • Lack of a national reference laboratory for AMR and few quality-assured microbiology laboratories • Lack of coordination of, and comprehensive national reports on national antibiotics consumption • Inadequate number of indigenous pharmaceutical manufacturers and over-reliance on imported pharmaceuticals • IPC domiciled in Department of Public Health with poor collaboration with Department of Hospital Services in the Federal Ministry of Health • Weak coordination of AMR awareness activities implemented by government and partners and poor public awareness of AMR • Problem of unskilled prescribers of antibiotics
OPPORTUNITIES	<ul style="list-style-type: none"> • Development of a National surveillance system and GLASS enrolment • Increasing multi-stakeholders' participation and interest in AMR • Integration of traditional medicine into the national health system and increasing government commitment to research on antimicrobial alternatives to reduce reliance on antibiotics use • Possibility of using HMO provider audits to institute antimicrobial education and stewardship among private practice providers • Leveraging on existing health policies and surveillance systems in the tripartite sectors to build AMR surveillance system • Availability of accredited laboratories within vertical programme • Availability of World Bank supported \$90m REDDISE (Regional Disease Surveillance Systems Enhancement) fund using the 'One Health' approach

TABLE 1: SWOT GRID OF AMR SITUATION ANALYSIS CONT'D

OPPORTUNITIES	<ul style="list-style-type: none"> • Establishment of more indigenous manufacturing companies for development of new antimicrobials • Review and implementation of the national drug policy • Setting up of more drug distribution centres in some States • Grazing bill could be adapted to include AMR awareness • Targeting annual conferences, national forums (NCH, NCA), CPD and committees (Livestock Development Committee) in the tripartite sector for advocacy activities • Leveraging on the existing Communication and Social Mobilisation structures at all levels for public awareness creation activities
THREATS	<ul style="list-style-type: none"> • National issues: recession, corruption, one federation account and insurgency • Health workers' attrition in general, particularly in rural areas • Poor enforcement of regulations and policies on AMR control and prevention • Weak pharmacovigilance of antibiotics • Funding – no dedicated budget line for AMR control and surveillance • Poor coordination of research on antibiotic use • Chaotic drug distribution system in the private sector, high level of counterfeit medicines in circulation and smuggling-in unregistered medicines • Unregistered practitioners and prescription of antibiotics by unlicensed persons • Poor management of waste from pharmaceutical processes and expired drugs • Inadequate funding of indigenous pharmaceutical companies • Lack of community pharmacies in rural areas and sale of prescription medicines by PPMVs • Non-qualification of courier services used in the delivery of thermo-labile medicines and diagnostics • Non-regulation of AMR activities (awareness, training, etc.) by partners such as vertical programmes

The following priority gaps were identified;

1. Poor public awareness and weak coordination of AMR awareness activities by government and partners such as vertical disease control programmes.
2. Poor 'One Health' coordination of animal and human national disease surveillance systems, non-existence of a national AMR laboratory surveillance system and no dedicated funding for AMR control activities
3. Non-existence of a national Infection Prevention and Control (IPC) coordinating body or guidelines, and poor budgetary support for IPC activities in health facilities
4. Lack of antimicrobial stewardship in both private and public sectors
5. Studies on the health and economic impact of AMR in Nigeria and poor coordination of research on antibiotic use

3 Strategic Plan

Goal

To reduce, prevent and slow the evolution of resistant organisms and their impact on health care while ensuring optimal use and improved access to effective, safe and quality-assured antimicrobials for continued successful management of infections.

The focus areas identified from Nigeria's priority gaps incorporate a 'One Health' approach aimed at implementing proposed actions by strengthening and utilising existing national systems and creating new structures where they do not exist.

Focus Area 1: Increasing awareness and knowledge of AMR and related topics

There is poor public awareness and weak coordination of AMR awareness activities in the country. The plan aims to improve the awareness and understanding of antimicrobial resistance through effective communication, education and training among the public and professionals in the health, animal, food safety and environment sectors.

OBJECTIVES	STRATEGIC INTERVENTIONS
<p>1.1 Increase awareness of AMR among Nigerians by 2022</p>	<p>1.1.1. Establish an evidence-based public communication programme targeting the public and audiences in human, animal and environmental health under the leadership of a tripartite AMR National Behaviour Change Communication Consultative Group (NBCCCCG)</p> <p>1.1.2. Conduct high-level advocacy visits to policy makers and relevant stakeholders to create budget lines and source for required financial and technical support for AMR awareness programmes in the 36 States, FCT and at the Federal level</p> <p>1.1.3. Implement communication campaigns to increase awareness of appropriate antimicrobial use and the adoption of infection prevention measures among the public, policy makers, human, animal and environmental professionals and other relevant stakeholders in communities, schools, workplaces and health facilities</p>
<p>1.2 Improve knowledge of AMR and related topics</p>	<p>1.2.1. Strengthen regulatory systems to promote rational antimicrobial use, infection prevention and antimicrobial stewardship among human health, animal health, environment and allied professionals</p> <p>1.2.2. Augment the knowledge and understanding of AMR, IPC, biosecurity and antimicrobial stewardship among human, animal, and environmental health care and allied professionals</p>

Focus Area 2: Building a 'One Health' AMR surveillance system

Collaboration across the health, animal health and environmental health sectors is largely minimal or non-existent. The focus is on setting up a national AMR surveillance system using a 'One Health' approach and strengthening institutional capacities (e.g. of laboratories) for early AMR detection

OBJECTIVES	STRATEGIC INTERVENTIONS
2.1 Set up a national surveillance system for AMR	2.1.1 Establish a national coordination structure for surveillance of AMR 2.1.2 Develop a multi-sectoral surveillance implementation plan
2.2 Strengthen institutional capacities for early AMR detection and trends monitoring in the country	2.2.1 Develop sector-specific surveillance protocols to detect emerging, re-emerging and changing trends in AMR 2.2.2 Prepare and implement a Human Resource Development Plan for AMR Surveillance
2.3 Build laboratory capacity to produce high-quality microbiological data to support surveillance activities across all sectors	2.3.1. Set up an NCDC National Reference Laboratory 2.3.2. Standardise laboratory capacity for monitoring AMR (Human, Terrestrial and Aquatic Animal, Food and Environment)
2.4 Contribute to Global surveillance	2.4.1. Enroll in GLASS 2.4.2 Contribute National Surveillance data to GLASS
2.5 Build and implement a research agenda for AMR burden assessment	2.5.1 Capacity Building of AMR Researchers 2.5.2. Periodically identify and articulate surveillance gaps and AMR burden estimation needs 2.5.3. Secure funding from relevant public and private sources 2.5.4. Commission researchers and research institutions to undertake research in identified gaps

Focus Area 3: Intensifying Infection Prevention and Control in the tripartite sectors

Infection prevention and control and good hygiene practices are key to reducing antibiotic consumption and the development of resistance. This strategy focuses on strengthening the infection prevention and control programme in human health, animal health and the environment at community and all governmental levels, promoting food safety and the use of vaccines in humans and animals.

OBJECTIVES	STRATEGIC INTERVENTIONS
3.1 Strengthen infection prevention and control at all governmental levels and in health care facilities	3.1.1 Establish a National Infection Prevention and Control Programme 3.1.2 Strengthen IPC practices 3.1.3 Improve IPC education and training
3.2 Promote infection prevention and control in animal health	3.2.1 Introduce IPC programme into veterinary practice and aquatic and terrestrial animal husbandry 3.2.2 Improve IPC and farm biosecurity practices 3.2.3 Include hygiene and infection prevention and control as core (mandatory) content in training and education of veterinary professionals and animal health practitioners 3.2.4 Improve IPC education and training for veterinary practice and aquatic and terrestrial animal husbandry
3.3 Promote food safety	3.3.1 Support implementation of food safety guidelines at the community level
3.4 Improve infection prevention and control practices at the community level	3.4.1 Improve access to potable water in communities and within healthcare facilities 3.4.2 Ensure water quality standard
3.5 Improve environmental sanitation and hygiene	3.5.1 Improve waste management practices 3.5.2 Support safe disposal and management of sewage and fecal matter

Focus Area 3: Intensifying Infection Prevention and Control in the tripartite sectors cont'd

OBJECTIVES	STRATEGIC INTERVENTIONS
3.6 Improve hygienic practices at the community level	3.6.1 Promote hand hygiene at the community level and in schools
3.7 Increase the use of vaccines to prevent new infections in humans and animals	3.7.1 Scale up immunisation coverage in human and animal health sectors 3.7.2 Increase range of available vaccines in-country for both human and animal health 3.7.3 Support surveillance of vaccination programmes in human and animal health to enable appropriate vaccination

Focus Area 4: Promoting Rational Access to Antibiotics and Antimicrobial Stewardship

In Nigeria, antibiotic sale and use is poorly regulated and monitored. The strategy is to improve access to quality antimicrobial agents for infections, promote antimicrobial stewardship and strengthen regulatory agencies across all sectors (humans, animals and environment).

OBJECTIVES	STRATEGIC INTERVENTIONS
<p>4.1 Improve access to quality antimicrobial agents for infections in humans and animals</p>	<p>4.1.1 Promote optimal procurement and distribution of quality antimicrobials and diagnostics for human and animal use</p> <p>4.1.2. Enhance local production of quality antimicrobial agents and diagnostics for human and animal use</p> <p>4.1.3. Expand NHIS coverage to include more enrollees</p>
<p>4.2 Promote antimicrobial stewardship in human and animals</p>	<p>4.2.1 Promote the use of up to date treatment guidelines and ensure prudent use in humans and animals</p> <p>4.2.2 Promote optimal prescribing and dispensing of antimicrobials in humans and animals</p>
<p>4.3 Strengthen regulatory agencies across all sectors (humans, animals and environment) to enable them perform their mandate with regards to antimicrobials</p>	<p>4.3.1 Strengthen the capacity of regulatory agencies across 'One Health' sectors (i.e. human, animals, food products and environment)</p> <p>4.3.2 Enhance inter-sectoral coordination and collaboration between/amongst regulatory agencies</p>

Focus Area 5: Investing in AMR Research and Development

This strategy is focused on driving investment in the conduct of AMR research, promoting the use of innovative investment channels for research and investing in the development of antibiotic alternatives and advanced diagnostic techniques for impact on human and animal health.

OBJECTIVES	STRATEGIC INTERVENTIONS
5.1 Map current funding and promote the use of innovative investment channels for AMR research	5.1.1. Assess available AMR funding mechanisms 5.1.2. Conduct needs assessment and develop a priority framework for AMR funding 5.1.3. Promote the use of innovative investment channels for AMR research funding
5.2 Incorporate AMR research at advanced education institutions	5.2.1. Support AMR researches in universities and relevant research institutes
5.3 Encourage research and development of technical expertise on antibiotic alternatives	5.3.1. Encourage research in and the development of alternatives to antibiotics
5.4 Invest in advanced diagnostic and pharmaceutical techniques for AMR research and development	5.4.1. Invest in advanced diagnostic and pharmaceutical techniques for AMR research and development

4 Operational Plan

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1							
Establish an evidence-based public communication programme targeting the public and audiences in human, animal and environmental health under the leadership of a tripartite AMR National Behaviour Change Communication Consultative Group (NBCCCG)							
Activity 1.1.1.1 Constitute, inaugurate and orientate the AMR National Behaviour Change Communication Consultative Group (NBCCCG) at the Federal Level							
1.1.1.1.1: Hold meetings to identify relevant organisation and request for nominees to serve on the NBCCCG, develop Terms of Reference and Inaugurate NBCCCG	AMR TWG FMOH, NCDC, FMARD, FMEEnv, FMOEd, FMol	3	Short term	Abuja	FMARD, FMEEnv, FMOEd, FMol FMOH/HPD NCDC	FMOH, FMARD, FMOEd, NCDC Donor agencies and development partners	NBCCCG constituted, Terms of Reference developed and NBCCCG Inaugurated
1.1.1.1.2: Hold an orientation for NBCCCG	AMR TWG, FMOH, NCDC, FMARD, FMEEnv. FMOEd, FMol	1	Short term	Abuja	AMR TWG FMOH/HPD NCDC, FMARD, FMEEnv, FMOEd, FMol	FMOH, NCDC, FMARD, FMOEd Donor agencies and development partners	NBCCCG empowered on roles and responsibility
1.1.1.1.3: Hold series of Planning and implementation meetings by NBCCCG	NBCCCG members FMOEd, FMol	35	Long term	Nation wide	NBCCCG, FMOH/HPD, NCDC FMARD, FMEEnv, FMOEd, FMol	FMOH, NCDC, FMARD, FMEEnv and Donor agencies and development partners	Number of engagement meetings held per year Reports of meetings containing Key resolutions Working documents developed at the meetings

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.2							
The AMR NBCCCG to Coordinate and strengthen the capacity of the existing State Communication and Social Mobilisation Committee (CSMC) and LGA CSMC to carry out an effective AMR Communication campaigns at the community, schools, workplaces and health facilities							
1.1.1.2.1: Two days Zonal sensitisation meeting on burden of AMR and national communication campaign for CSMC representatives from tripartite sectors (36 States and FCT)	NBCCCG, NCDC, FMoH/HPD, CSMC representatives from tripartite sectors (36 States and FCT)	6	Short term	Abuja	NBCCCG NCDC, FMoH/HPD, FMARD, FMEEnv	FMoH, NCDC, FMARD, FMEEnv and Donor agencies and development partners	Number of CSMC representatives sensitised on AMR communication campaigns activities
1.1.1.2.2: TOT on burden of AMR and national communication campaign	NBCCCG, NCDC, FMoH/HPD, State CSMC	1	Short term	Abuja	NBCCCG	FMoH, NCDC, FMARD, Donor agencies and development partners	Crop of master trainers who are skilled in AMR communication campaigns activities
1.1.1.2.3: Hold Orientation meetings of existing State CSMC on burden of AMR and expected roles	NBCCCG, NCDC, FMoH/HPD, State CSMC	37	Short term	Nation wide	NBCCCG FMoH/HPD FMARD FMEEnv Partners	FMoH, NCDC, FMARD, FMoEd and Donor agencies and development partners	Increased percentage of functional CSMC and improved AMR community skills

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.2 cont'd							
1.1.1.2.4: Hold Orientation meetings of LGA CSMC team for effective Community Mobilisation activities at LGA level	State CSMC, LGA CSMC, NBCCCG, FMoH/HPD	774	Short term	Nation wide (36 States, FCT, 774 LGAs)	State CSMC, FMoH/HPD Partners	SMoH, SMARD, SMoEnv and Donor agencies and development partners	Increased percentage of functional CSMC and improved AMR community campaign skills
Activity 1.1.1.3. Conduct a nationwide baseline behavioural study on AMR awareness, knowledge, attitudes, practices and perceptions in different social and professional groups							
1.1.1.3.1: Hold meeting to develop survey tool	Meeting, NBCCCG, FMoH/HPD, FMoH, FMARD, FMoEd survey tool	2	Short term	Abuja	NBCCCG	FMoH, FMARD, FMEEnv, and Partners	Developed appropriate Survey tools
1.1.1.3.2: Two days training of data collector (s)	Training, NBCCCG, FMoH/HPD, FMoH, FMARD, FMoEd survey tool	1	Short term	Abuja	NBCCCG, Partners	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Trained data collectors at National level
1.1.1.3.3: One day training of data collector (s) at State level	Training, Data collectors survey tool	37	Short term	Abuja	State CSMC, Partners	SMoH, SMARD, SMoEnv, and Donor agencies and development partners	Trained data collectors at State level

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.3. Cont'd							
1.1.1.3.4: Carry out baseline survey on AMR awareness, knowledge, perception and practice among the public and in human, animal and tripartite professionals in both public and private sectors in States and FCT	Survey	37	Short term	Nation wide (36 States, FCT, 774 LGAs)	NBCCCG	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Report of baseline survey on AMR awareness amongst public and private sectors in Nigeria
1.1.1.3.5: Debriefing meeting to collate findings	Meeting,	1	Short term	Abuja	NBCCCG	FMoH, FMARD, FMoEd, and Donor agencies and development partners	Baseline report on awareness, knowledge, attitude, perceptions and practice in Nigeria

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.4 Use baseline findings to develop and disseminate an AMR communication message that will ensure the adoption of behaviours that promotes appropriate antimicrobial use and practices among the public, policy makers, human, animal and environment professionals and relevant stakeholders.							
1.1.1.4.1: Hold Stakeholders consensus building meeting to develop and finalise AMR Communication Strategy	Meeting, NBCCCG, Stake holders	3	Medium term	To be decided	NBCCCG, NCDC FMoH/HPD FMARD FMEEnv	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	AMR communication strategy document
1.1.1.4.2: Type setting, editing, printing and distribution of AMR Communication Strategy	Print ready AMR communication strategy	5,000 copies	Medium term	Abuja	NBCCCG	FMoH, FMARD, FMoEd, and Donor agencies and development partners	Printed copies of AMR communication strategy Distribution list
1.1.1.4.3: National and State levels dissemination of the AMR communication strategy	National Launch Printed Communication strategy	38	Short term	Nation wide (36 States, FCT, 774 LGAs)	NBCCCG, NCDC FMoH/HPD, FMARD FMEEnv	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Pre-Launch Ministerial Press Briefings, Report of National launch

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.4 cont'd							
1.1.1.4.4: Stakeholders meeting to develop training guidelines and job aids on AMR use by different audiences (human/animal/environmental professionals, Media, Community mobilisers and other relevant stakeholders.	Meetings, NBCCCG, State Representative	10	Short term	Locations within the 6 geo-political zones	NBCCCG, FMOH/HPD, FMARD, FMEEnv,	FMOH, FMARD, FMEEnv, and Donor agencies and development partners	Training materials and job aids developed. Copies of the training module per group Content of the training module for each group

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.5. In line with baseline findings, adapt and produce existing audience specific Social and Behaviour Change Communication (SBCC) materials (advocacy kits and key messages for print and electronic) on AMR prevention and containment in English, Pidgin and three local languages (Hausa, Igbo and Yoruba)							
1.1.1.5.1: Hold stakeholders meeting to adapt audience specific AMR SBCC materials in English, Pidgin and 3 local languages –Hausa, Yoruba and Igbo	Factsheets, posters, flex/roll up/draw back banners, stickers, handbills, FAQs, danglers, wrist band, key-holders, radio sound bites, radio/TV jingles and spots, text messages, design for bus branding, billboard, outdoor umbrella, wall painting, murals, neo-sign boards, reflective jackets, flash, face caps, T-shirt, badges/lapels, memo pads and media kits) including Invitation cards, letter head, envelopes and certificate of appreciation for CORPs	10	Short term	Geo-political zones	NBCCCCG, NCDC, FMOH/HPD FMARD, FMEEnv, FMOEd, FMol	FMOH, FMARD, FMEEnv, and Donor agencies and development partners	Number of stakeholder meetings held to develop advocacy kits, target specific key messages. Types of AMR SBCC materials adapted, Contents of each SBCC materials per group.

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.5. cont'd							
1.1.1.5.2: Pretest of audience specific AMR SBCC materials in English, Pidgin and local languages (Hausa, Yoruba and Igbo) in selected locations	8 locations Draft AMR SBCC materials in English and 4 local languages	To be decided	Short term	8 locations	NBCCCG, FMoH/HPD, FMARD, FMEEnv, FMol	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Pretested SBCC materials List of pretest locations Collated inputs from the field
1.1.1.5.3: Finalisation of audience specific AMR SBCC materials in English, Pidgin and local languages (Hausa, Yoruba and Igbo)	Pretested SBCC materials in English and 4 local languages	2	Short term	Lagos Kaduna	NBCCCG, FMoH/HPD, FMARD, FMEEnv	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Finalised SBCC materials
1.1.1.5.4: Production of audience specific AMR SBCC materials in English, Pidgin and three local languages	Finalised audience specific AMR SBCC materials in English, Pidgin and three local languages	To be decided	Short term	Abuja	NBCCCG, FMoH/HPD, FMARD, FMEEnv	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Quantity of audience specific AMR SBCC materials produced per language per group.

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.1 cont'd							
Activity 1.1.1.5. cont'd							
1.1.1.5.5: Distribution of AMR audience specific AMR SBCC materials to LGAs	Printed audience specific AMR SBCC materials in English and four local languages	To be decided	Short to Long term	Nation -wide (36 States, FCT, 774 LGAs)	NBCCCG, FMoH/HPD FMARD, FMEEnv	FMoH, FMARD, FMEEnv, UNICEF, Donor agencies and development partners	List of AMR SBCC materials distribution per target group. The forum of dissemination of SBCC materials
STRATEGIC INTERVENTION 1.1.2.							
High level advocacy to policy makers and relevant stakeholders to create budget line and source for required financial and technical support for AMR awareness programme in the States, FCT and Federal level							
Activity 1.1.2.1.							
Audience specific advocacy visits and group meetings using appropriate channels of communication and SBCC materials (advocacy kits and key messages) to decision makers in MDAs, regulatory bodies, academia, industry, media, religious structures, traditional structures, development/ implementation partners, telecommunication organisations, financial institutions, law enforcement agencies, artisan associations, youth organisations							
1.1.2.1.1: Conduct evidence based advocacy to legislators and decision makers at Federal, States, FCT and LGA to allocate resources for AMR activities	Meetings, Advocacy kits: Advocacy kit will include materials that will address Resource mobilisation, Legal, Research and M&E needs for AMR, IPC and AMS	To be determined	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	NBCCCG, NCDC, FMoH/ HPD FMARD, FMEEnv, State CSMC, LGA/ CSMC,	FMoH, FMARD, FMEEnv, SMoH, SMARD, SMoEnv, and Donor agencies and development partners	Increased budget line for AMR activities at the National, State and LGA levels

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.2. Cont'd							
Activity 1.1.2.1. cont'd							
1.1.2.1.2: Investiture of prominent personalities as AMR Champions (including Wives of Governors/ Chairmen/ Traditional/ Religious leaders)	Advocacy kits Meetings Identified champions	To be deter-mined	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	NBCCCG, NCDC, FMOH/ HPD FMARD, FMOEnv, State CSMC, LGA/ CSMC,	FMARD, FMOEnv, SMOH, SMARD, SMOEnv, and Donor agencies and development partners	Number of AMR champions instituted to increase budget lines at the National, State and LGA levels
1.1.2.1.3: Advocacy/ sensitisation meeting/ visit with stakeholders such as media institutions entertainment industry, NGO, FBOs and CSOs	Advocacy kits Meetings, Media owners and workers, PMAN Nollywood, NGO, FBOs and CSOs	To be deter-mined	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	NBCCCG, NCDC, FMOH/ HPD FMARD, FMOEnv, State CSMC, LGA/ CSMC,	FMOH FMARD, FMOEnv, MoH, SMARD, SMOEnv, and Donor agencies and development partners	Number of advocacy meetings held per group. Report of meetings
1.1.2.1.4: Conduct Annual Roundtable advocacy meeting for private sector organisations for funding of AMR programmes	Multinationals, Banks, Telecom SMEs, Wealthy Individuals Private sector	To be deter-mined	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	NBCCCG, NCDC, FMOH/ HPD FMARD, FMOEnv, State CSMC, LGA/ CSMC,	FMOH, FMARD, FMOEd SMOH, SMARD, SMOE, and Donor agencies and development partners	Number of round table meetings held

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.3.							
Implementation of communication campaigns to increase awareness on appropriate antimicrobial use and adoption of infection prevention measures among the public, policy makers, tripartite professionals and other relevant stakeholders in community, schools, workplaces and health facilities							
Activity 1.1.3.1. Engagement of stakeholders to increase public awareness on AMR and related topics in communities, schools, workplaces and markets using existing communication approaches such as for community mobilisation, fixed post, outreach and interpersonal communication activities, town announcers, community dialogue, public gatherings, mass media, annual events (World Antibiotic Awareness Week, World Health Day, Hand Washing)							
1.1.3.1.1: Sensitisation meetings for various groups to build skills on AMR and related topics in states, FCT and LGA (human/ animal/ environmental professionals, NGOs, CSOs, FBOs, professional bodies, academia, industry, Media, mobilisers – CORPs, NOA, COMOS, Peer educators (Students, out of school youth, women groups, male groups), CSO, NGOs)	Meetings Participants from social and professional sectors: Community leaders & groups NGOs, CSOs/FBOs Heads of Educational institutions, Teachers, PTA, Artisan associations, Law enforcement agencies.	To be determined	Short to Long term	Nation -wide (36 States, FCT and 774 LGAs)	LGA SMC, State CSMC, NBCCCG, FMOH/HPD FMARD, FMEEnv, State CSMC, LGA/CSMC,	FMOH/HPD FMARD, FMOEd, SMOH, SMARD, SMOE, UNICEF, Donor agencies and development partners	<p>1. Number of persons sensitised per group per sector/ meeting/ State/ LGA</p> <p>2. Proportion of sector/ stakeholders that has skill on implementing communication campaign that promote antimicrobials use and IPC.</p> <p>3. Increased awareness on antimicrobial use and IPC measures among the general population and professionals</p>

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.3. Cont'd							
Activity 1.1.3.1. cont'd							
1.1.3.1.2: Media engagement for awareness creation in English, Pidgin and local languages using multiple platform (print and electronic channels) to disseminate AMR key messages on selected major radio and TV stations and newspapers	Public Media plan, media Placements and Key message on ARM appropriate use and practices. Functional Hotline	To be determined	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	LGA SMC, State CSMC, NBCCCG, FMoH/HPD FMARD, FMEEnv	FMoH/HPD FMARD, FMEEnv, SMoH, SMARD, SMoEnv, UNICEF, Donor agencies and development partners	Frequency of airing of jingles and publication of editorials. Frequency of call-In on Radio & Television Chat Shows on major TV and Radio. Frequency of bi-monthly publication on AMR Feature Articles in major newspapers Organize Quarterly Media Coverage and Reportage by Journalists for AMR Campaign Activities
1.1.3.1.3: Community dialogues and town hall meetings, ensuring that resource mobilisation, legal, research and M&E needs for AMR, IPC, biosecurity and antimicrobial stewardship are also covered	Public Key message on AMR appropriate use and practices	To be decided	Medium to Long term	Nation - wide (36 States, FCT, 774 LGAs)	LGA SMC, State CSMC, NBCCCG, NCDC, FMoH/HPD FMARD, FMEEnv	FMoH FMARD, FMEEnv, SMoH, SMARD, SMoEnv, and Donor agencies and development partners	Community dialogues and town hall meetings, Outcomes of the meetings

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.1.3. Cont'd							
Activity 1.1.3.2. Effective mechanism for coordination of AMR awareness activities							
1.1.3.2.1: Inter-sectoral collaboration between the relevant Ministries (health, agriculture, environment, etc.), telecommunication companies and the community to establish reporting mechanisms for AMR awareness activities	FMoH, FMEnv, FMARD, FMoEd, FMol, SMoH, SMoEnv, SMARD, SMol, SMoE, NOA Development Partners, Law enforcement agencies, Telecommunication companies, NGOs, CSOs, CBOs, FBOs etc.	To be determined	Short to Long term	Nation - wide (36 States, FCT, 774 LGAs)	LGA SMC, State CSMC, NBCCCG, NCDC, FMoH/HPD, FMARD, FMEnv	FMoH, FMARD, FMEnv, SMoH, SMARD, SMoEnv, and Donor agencies and development partners	Number of reporting channels established. Report of activities carried out per communication channels (Toll free lines, Bulk SMS, website) at the Federal, State and LGA levels
1.1.3.2.2: Periodic monitoring of the implementation of AMR awareness programmes (three times yearly)	FMoH, FMEnv, FMARD, SMoH, SMoEnv, SMARD, FMol, NOA Development Partners,	To be determined	Medium to Long term	Nation - wide (774 LGAs)	LGA SMC, State CSMC, NBCCCG, FMoH, FMARD, FMEnv	FMoH, FMARD, FMoEd, SMoH, SMARD, SMoEnv, and Donor agencies and development partners	Number of monitoring exercises carried out. Report of monitoring exercise
1.1.3.2.3: Conduct biannual Review Meetings and incorporate review of AMR awareness, training and education	FMoH, FMEnv, FMARD, SMoH, SMoEnv, SMARD, FMol, NOA Development Partners and relevant Stakeholders	10	Short to Long term	Geo -political zones	LGA CSMC, State CSMC, NBCCCG, NCDC, FMoH, FMARD, FMEnv	FMoH, FMEnv, FMARD and Donor agencies and development partners	Number of Review meetings carried out, Reports of meetings

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.1							
Regulatory systems to promote rational antimicrobial use, infection prevention and antimicrobial stewardship among human, animal and environment and allied professionals							
Activity 1.2.1.1 Review of school curricula (primary, secondary and tertiary) and training guidelines for teachers and health professionals in human, animal and environment to ensure appropriate inclusion of AMR, IPC, biosecurity and antimicrobial stewardship							
1.2.1.1.1: Meeting to review and expand curriculum and teachers training guidelines for primary and secondary school on AMR, IPC and AMS for students	Ministry of Education. Curriculum of schools AMR experts	8	Medium term	To be deter-mined	NBCCCG, NCDC, FMoH/HPD FMARD, FMEEnv	FMoH FMARD, FMEEnv, SMARD, SMoE, and Donor agencies and development partners	Reviewed Primary and Secondary Schools curricula Report of meetings
1.2.1.1.2: TOT for teachers on the revised primary and secondary school curriculum and training guidelines using existing structures	Ministry of Education Tripartite Ministries Master trainers	2	Medium term	To be deter-mined	NBCCCG, NCDC, FMoH/HPD FMARD, FMEEnv,	FMoH FMARD, FMEEnv, and, Donor agencies and development Donor agencies and development partners	Number of master trainers trained per session. Report of training sessions
1.2.1.1.3: Meeting to review and expand curriculum of undergraduate, residency and post graduate training programmes on AMR, IPC, biosecurity and antimicrobial stewardship for tripartite and allied professionals	Regulatory bodies and training institutions in the tripartite sectors AMR experts	20	Medium term	To be deter-mined	NBCCCG, FMoH/HPD FMARD, FMEEnv	FMoH FMARD, FMEEnv, and, Donor agencies and development partners	Number of curricula reviewed for professionals in human, animal and environment sectors Number and report of meetings

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.1 Cont'd							
Activity 1.2.1.1 Cont'd							
1.2.1.1.4: Meeting to train tutors on the revised undergraduate, residency and post graduate curriculum	Regulatory bodies and training institutions in the tripartite sectors AMR experts	20	Medium term	To be determined	NBCCCG, FMOH/HPD FMARD, FMOEd	FMOH FMARD, FMEEnv, and, Donor agencies and development Donor agencies and development partners	Number of training session held, Number of tutors trained per institution per professional group
Activity 1.2.1.2 Encourage regulatory bodies to include AMR related training in the requirements for qualification and renewal of license							
1.2.1.2.1: Sensitisation meeting for regulatory bodies and professional associations for human, animal and environment providers to include AMR and related topics in trainings, renewal of license and facilities accreditation checklists	Regulatory bodies, professional bodies and training institutions in the tripartite sectors ARM experts	20	Long term	Abuja	NBCCCG, NCDC, FMOH/HPD FMARD, FMEEnv	FMOH, FMARD, FMEEnv, and Donor agencies and development partners	Number of regulatory and professional bodies sensitised per sector Report of meetings and reports

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.1 Cont'd							
Activity 1.2.1.3 Implement educational activities such as seminars, conferences, and short courses on AMR and relevant topics as appropriate for human, animal and environment professionals and relevant groups							
1.2.1.3.1: Organise seminars and training for relevant stakeholders such as PPMV, animal health inspectors, clinical veterinarians, livestock producers, aquaculture farmers, toll milers, feed manufacturers, etc.	AMR experts, Human, animal and environment professionals, and relevant groups	TBD	Long term	Abuja	NBCCCG, FMoH/HPD, FMARD, FMEEnv	FMoH, FMARD, FMEEnv, and Donor agencies and development partners	Number of training sessions held per group per year Number of trained service providers per group
1.2.1.3.2: Train media correspondence on appropriate reporting and investigative journalism on AMR awareness, education and training activities	NBCCCG AMR experts NUJ	20	Short to Long term	Abuja	NBCCCG, FMoH/HPD, FMARD, FMEEnv	FMoH, FMARD, FMEEnv, Donor agencies and development partners	Number of health correspondence from print and electronic media trained on AMR reporting.

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.2 Augment the knowledge and understanding of AMR, IPC, biosecurity and antimicrobial stewardship among human, animal, and environment care and allied professionals							
Activity 1.2.2.1 Develop training programmes related to AMR prevention and containment in continuing education for human, animal and environment professionals							
1.2.2.1.1: Organise in-service training on AMR, IPC and AMS appropriate use and practices for Human, animal and environmental professionals	AMR experts In-service Training institutions Tripartite Professionals	To be determined	Medium to Long term	Nation-wide	LGA SMC, State CSMC, NBCCCG, FMOH/HPD FMARD, FMEEnv	FMOH, FMARD, FMEEnv, and Donor agencies and development partners	Assessment of knowledge and understanding of professionals on AMR, IPC, biosecurity and antimicrobial stewardship
Activity 1.2.2.2 Put in place mechanisms to monitor onsite practices by human, animal and environment professionals							
1.2.2.2.1: Organize meeting to define/identify antimicrobial use and practice indicators and develop appropriate data collection and audit tools	M&E officers of tripartite ministries, NGOs/ CSOs and Development Partners, FMOH NHMIS unit	4	Medium term	To be determined	LGA SMC, State CSMC, NBCCCG, FMOH/HPD FMARD, FMEEnv	FMOH, FMARD, FMEEnv and Donor agencies and development partners	<ol style="list-style-type: none"> 1. Antimicrobial use and practice behavior change Indicators identified 2..Appropriate tools developed 3.Antimicrobial behaviour change data elements reflected in appropriate data collection platforms in the tripartite sector

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.2 Cont'd							
Activity 1.2.1.2 Cont'd							
1.2.2.2.2: Strengthen regulatory authorities to monitor AMR, IPC, biosecurity and antimicrobial stewardship practices in tripartite sectors	RRegulatory bodies, NBCCCG, Mechanism for monitoring AMR practice in the tripartite sectors	To be deter-mined	Medium to Long term	Abuja	NBCCCG, FMOH, FMARD, FMEV	FFMOH, FMARD, FMEV, and Donor agencies and development partners	Number of regulatory bodies strengthened to monitoring AMR practices such as penalties, Monitoring report
Activity 1.2.2.3. Improve access to information on appropriate use of antimicrobials by the human, animal and environmental professionals							
1.2.2.3.1: Create/Update web based information system (publication, reports, research, intervention) for AMR in Nigeria	Tripartite sectors website, FMol, General Population	To be deter-mined	Short term to Long term	Nation-wide	LGA SMC, State CSMC, NBCCCG, FMOH/HPD FMARD, FMEV	FMOH, FMARD, FMEV and Donor agencies and development partners	Functional web site on AMR activities, Trend of visits to the website, Publications, research findings report etc. uploaded
1.2.2.3.2: Update existing social media platforms in the tripartite sectors for online dissemination of information on AMR	Tripartite sectors website, FMol, General Population	To be deter-mined	Short term to Long term	Nation-wide	LGA SMC, State CSMC, NBCCCG, FMOH/HPD FMARD, FMEV	FMOH, FMARD, FMEV and Donor agencies and development partners	Number of social media engagement and analysis

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 1.2.2 Cont'd							
Activity 1.2.2.4 Monitoring of change in AMR awareness, knowledge, attitudes, practice and perception among the public							
1.2.2.4.1: Conduct relevant studies on impact of the AMR communication campaigns to track perceptions and understanding of the messages disseminated, and track behavior levels	Annual Survey	To be determined	Short to Long term	Nation-wide	LGA SMC, State CSMC, NBCCCG, NCDC, FMOH/HPD FMARD, FMEEnv	FMOH, FMARD, FMEEnv and Donor agencies and development partners	Number and report of studies conducted, Data on change in behavior and rational use of antimicrobials
STRATEGIC INTERVENTION 2.1.1							
To establish a national coordination structure for surveillance of AMR							
Activity 2.1.1.1 Set up a National Steering Committee and National Coordinating Centre							
2.1.1.1.1: Write and approve Terms of Reference (TOR) for NCDC as the National Coordinating Centre for AMR Surveillance in Nigeria	Terms of Reference	1	Done	Abuja, Abuja	CEO, NCDC	NCDC, FMOH, Donor agencies and development partners	Approved TOR ready
2.1.1.1.2: Appoint individuals into a National Steering Committee (NSC) for AMR surveillance in Nigeria	Individual Members	12	Short term	Abuja, Abuja	CEO, NCDC	NCDC, FMOH, Donor agencies and development partners	NSC Inaugurated

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.1.1 cont'd							
Activity 2.1.1.1 cont'd							
2.1.1.1.3: Write and approve terms of reference for a National Steering Committee for AMR surveillance	Terms of Reference	1	Short term	Abuja, Abuja	FMoH, CEO (NCDC)	NCDC, FMoH, Donor agencies and development partners	TOR
2.1.1.1.4: Establish Statutory Meetings for the NSC	Meetings	14	Short term	Variable	NCDC	NCDC, FMoH, Donor agencies and development	Improved surveillance system across different AMR sectors
Activity 2.1.1.2 Set up Technical Working Groups (TWG) at national and state levels							
2.1.1.2.1: Appoint National Technical Working Group (TWG)	Individual Members		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	TWG Inaugurated
Establish statutory meeting for the national		20	Short term	MOH	MOH	NCDC, FMoH, Donor agencies and development	
2.1.1.2.2: Appoint State Technical Working Group (STWG)	Individual Members		Short term	SMoH	SMoH	SMoH, Donor agencies and development partners	1. STWG Inaugurated 2. NTWG notified
2.1.1.2.3: Establish Statutory Meetings for the STWGs	Meetings	20		SMoH	SMoH	SMoH, Donor agencies and development partners	SMoH, Donor agencies and development

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.1.2 Write a multi-sectoral surveillance implementation plan							
Activity 2.1.2.1 Determine surveillance priorities							
2.1.2.2: Identify AMR surveillance priorities for Nigeria	Type of specimen		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	List of priority specimens
2.1.2.2.2: Identify priority organisms from humans, animals, and environment	Type of organism		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	List of priority organisms
2.1.2.2.3: Identify priority medicines for use and quality monitoring	Type of Medicine		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	List of priority medicines
Activity 2.1.2.2 Write the surveillance implementation plan viz-a-viz existing policies in all sectors							
2.1.2.2.1: Draft the multi-sectoral Surveillance Implementation Plan	The draft plan	1	Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Draft copy
2.1.2.2.2: Stakeholder Review of the Draft	The Review	Variable	Short term	Abuja	NSC	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Reviewers' comments

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.1.2 Cont'd							
Activity 2.1.2.2 Cont'd							
2.1.2.2.3: Finalisation and adoption of the Surveillance Implementation Plan	The Plan	1	Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Improved multi-sectorial surveillance implementation plan
2.1.2.2.4: Produce and Disseminate the Surveillance Implementation Plan in print and online formats	Printed and electronic copy		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Percentage of sector with Surveillance Implementation plan printed and disseminated
STRATEGIC INTERVENTION 2.2.1 Write sector-specific surveillance protocols to detect emerging, re-emerging and changing trends in AMR							
Activity 2.2.1.1 Identify surveillance focal points in clinical settings, food chain, terrestrial and aquatic animal production value chains and the environment							
2.2.1.1.1: Perform baseline assessment of laboratory and other capacities	Baseline assessment		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Number of institutions that have competence to detect emerging, reemerging trends in AMR using standardised protocols
2.2.1.1.2: Select initial and subsequent surveillance sites and sentinel laboratories	Sites and laboratories		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	List of selected surveillance and sentinel sites

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.2.1 Cont'd							
Activity 2.2.1.1 Cont'd							
2.2.1.1.3: Support eligible sites with technical assistance to meet minimum standards for surveillance	Eligible sites		Medium term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Increased competence of emerging, re-emerging and trend among surveillance sites and lab
2.2.1.1.4: To set up a national surveillance system for AMR	Surveillance system		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Improved detection and reporting of diseases using WHONET
Activity 2.2.1.2 Adopt or adapt standardized protocols for the surveillance system							
2.2.1.2.1: Review or Pre-test existing protocols	Review or pre-test		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Compiled report
2.2.1.2.1: Select and adopt appropriate protocols	Adopted protocol		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Relevant manuals and SOPs available
2.2.1.2.2: Disseminate the adopted protocols	Addressed copy		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Acknowledgement of receipt of manuals and SOPs

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.2.1 Cont'd							
Activity 2.2.1.2 Cont'd							
2.2.1.2.3: Training to ensure capacity and adherence to protocols	Training module		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Proficiency testing
2.2.1.2.4: Schedule reviews of protocols in line with the adopted standardized protocols	Scheduled review		Medium term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Compiled reports
Activity 2.2.1.3 Implement WHONET Tools for data management							
2.2.1.3.1: Deploy a unifying platform for multi-sectoral data management collaboration at the NCDC	Platform for data management		Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Platform up and running
2.2.1.3.2: Install WHONET and AMU at selected and potential surveillance sites	Software copies		Short term	All surveillance sites and Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Download report from WHONET Secretariat
2.2.1.3.3: Training of personnel to use WHONET	Training modules		Short term	All surveillance sites and Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Improved detection and reporting of resistances and diseases using WHONET

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.2.1 Cont'd							
Activity 2.2.1.3 Cont'd							
2.2.1.3.4: Devise a monitoring and evaluation plan for use of WHONET	M&E Plan		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Written plan
STRATEGIC INTERVENTION 2.2.2 Prepare and implement a Human Resource Development plan for AMR Surveillance							
Activity 2.2.2.1 Implement a Human Resource Development plan for AMR surveillance							
2.2.2.1.1: Carry out Human Resource Needs Assessment for the Surveillance System	Needs assessment		Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Needs Assessment report
2.2.2.1.2: Draft, Review and Adopt a plan for Human Resource Development	Draft plan	1	Short term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Adopted plan
2.2.2.1.3: Conduct training and retraining to address relevant gaps identified in the Needs Assessment	Training modules		Short term and Long term	Variable	NCDC	NCDC, FMoH, Donor agencies and development partners	Proficiency testing

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.2.2 Cont'd							
Activity 2.2.2.1 Cont'd							
2.2.2.1.4: Schedule periodic Human Resource Audit at all levels	Scheduled audit		Short and long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Schedule
STRATEGIC INTERVENTION 2.3.1 Set up an NCDC National reference laboratory							
Activity 2.3.1.1 Set up a national reference laboratory							
2.3.1.1.1: Write and approve terms of reference for a national reference laboratory with expertise in methods for confirming and characterizing specific pathogens	TOR	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	TOR
2.3.1.1.2: Designate an existing laboratory to serve as an interim National Reference laboratory	Laboratory	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	National Reference Laboratory
2.3.1.1.3: Upgrade the NCDC Laboratory in Gaduwa (Abuja) to serve as the permanent National Reference laboratory	Laboratory	1	Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Percentage capacity of NCDC reference Laboratory to support AMR surveillance across sectors.

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.3.1 Cont'd							
Activity 2.3.1.1 Cont'd							
2.3.1.1.3.4. Enroll NCDC Lab in the step-wise Laboratory improvement process towards accreditation (SLIPTA)	Enrolment		Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Readiness for accreditation assessed
STRATEGIC INTERVENTION 2.3.2 Standardize laboratory capacity for monitoring AMR (Human, Terrestrial and Aquatic Animal, Food and Environment)							
ACTIVITY 2.3.2.1 Institutionalize laboratory capacity for monitoring AMR (Human, Terrestrial and Aquatic Animal, Food and Environment)							
2.3.2.1.1: Assess capacities of identified laboratories for AMR surveillance	Laboratory	3	Medium & Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Increased data demand and use
2.3.2.1.2: Adopt a system for certification and standardization of laboratories	The system	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Adopted system
2.3.2.1.3: Mentoring the identified public laboratories towards accreditation or (SLIPTA)	Laboratories		Medium & Long term	Laboratories	NCDC	NCDC, FMoH, Donor agencies and development partners	Readiness for accreditation assessed
2.3.2.1.4: Establish a unified system for Total Quality Management of laboratories	The system	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Adopted system

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.3.2 Cont'd							
ACTIVITY 2.3.2.2 Establish a mechanism for information sharing among stakeholders							
2.3.2.2.1: Use WHONET to analyse and produce reports at the laboratories and surveillance sites	Local Surveillance reports		Short to Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Compiled reports
2.3.2.2.2: Create the One Health Weekly Epidemiology Report (WER) on AMR	WER on AMR	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Inaugural issue
2.3.2.2.3: Set up a desk office for collation of research outputs to enrich the surveillance data and Weekly Epidemiology Reports	Desk office for WER	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Desk office up and running
2.3.2.2.4: Disseminate the WER via available platforms	Addressed copy	234	Short to Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Disseminated WER
STRATEGIC INTERVENTION 2.4.1 Enroll in GLASS							
Activity 2.4.1.1 Enroll in GLASS							
2.4.1.1.1: Complete relevant strategic activities for enrolment in GLASS	Enrolment	1	Short term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Enrolled in GLASS

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.4.2 Contribute National Surveillance data to GLASS							
Activity 2.4.1.2 Contribute National Surveillance data to GLASS							
2.4.1.2.1: Measure surveillance baselines	Data baseline	1	Short to medium term	Abuja and Surveillance sites	NCDC	NCDC, FMoH, Donor agencies and development partners	Baseline data
2.4.1.2.2: Submit curated data to WHO GLASS	Data submission		Medium to Long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Included in GLASS Reports
STRATEGIC INTERVENTION 2.5.1 Capacity Building for AMR Researchers							
2.5.1.1: AMR Grantsmanship training							
2.5.1.1.1: Develop and administer targeted grantsmanship workshop and modules	Workshops and modules	10	Short to Long term	variable	NTWG	variable	Attendance and successful awards
STRATEGIC INTERVENTION 2.5.2. Periodically identify and articulate surveillance gaps and AMR burden estimation needs							
Activities 2.5.2.1: Identify surveillance gaps and AMR burden estimation needs							
2.5.2.1.2: Periodic meetings to identify research needs and expert panel membership	Meetings	5	Short to Long term	Abuja	NTWG	NCDC, FMoH, Donor agencies and development partners	Minutes of meetings

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 2.5.3. Secure funding from relevant public and private sources							
2.5.3.1: Fund raising and resource mobilisation							
2.5.3.1.1: Identify funding sources	Potential funding sources list	5	Short to long term	Abuja	NSC	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Annual list of target funding agencies
2.5.3.1.2: Fundraising (cultivating and closing)	Secured funds	Variable	Short to long term	Variable	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Available funds
STRATEGIC INTERVENTION 2.5.4. Commissioning researchers and research institutions to undertake identified research gaps							
2.5.4.1: Competitive grant programme management							
2.5.4.1.1: Expert panels draw up calls for proposals	Call for proposals	5	Short to long term	Abuja	NTWG and expert panel	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Call for proposals
2.5.4.1.2: Advertise calls for proposal	Published call for proposals	5	Short to long term	Abuja	NCDC	NCDC, FMoH, Donor agencies and development partners	Proposals received
2.5.4.1.3: Selection and award process	Research awards	Variable	Short to long term	Abuja	NTWG and expert panel	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Awards made
2.5.4.1.4: Award monitoring and evaluation	Research awards	Variable	Short to long term	Abuja	NTWG	NCDC, FMoH, FMARD, FMEEnv Donor agencies and development partners	Reports, publications and other research outputs

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.1: Establish a National Infection Prevention and Control Programme							
Activity 3.1.1.1: Set up a National coordination for IPC in providing oversight for Healthcare facilities across the nation							
3.1.1.1.1: Prepare terms of reference and have inaugural meeting of a National infection prevention and control coordinating AMR sub-technical working group	Inaugural meeting	1	Short Term	Abuja, Abuja	National AMR steering committee and working group. Nigeria Infection Control Association (NICA), Nigeria Infectious Disease Society (NIDS)	FMoH FMARD FMEnv Donor agencies	Report of inaugural meeting
3.1.1.1.2: Establish statutory meetings for the IPC-AMR Technical working group	Biannual meetings	10	Continuous	Zonal	IPC TWG	FMoH FMARD FMEnv Donor agencies	Number of Meetings
Activity 3.1.1.2: Review the existing National IPC policy and develop IPC guidelines which captures practices to prevent the spread of multidrug resistant organisms							
3.1.1.2.1: Review the existing national IPC policy	IPC Policy	4	Short Term	Abuja	IPC TWG NICA	FMoH FMARD FMEnv Donor agencies	Revised policy available
3.1.1.2.2: Write national IPC guidelines	IPC guidelines	4	Short Term	Abuja	IPC TWG NICA Academia	FMoH FMARD FMEnv Donor agencies	IPC guidelines available

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.1: Cont'd							
Activity 3.1.1.3: Develop a monitoring and evaluation component of the IPC programme including surveillance for HAI							
3.1.1.3.1: Setup a national M&E unit for implementation	Implementa-tion of M&E plan for IPC and ensure	10	Continuous	Nation-wide	IPC TWG	FMoH FMARD FMEnv Donor agencies IPC M&E implement-tion plan ready for use	Number of M&E activities carried out
3.1.1.3.2: Coordinate national surveillance for HAIs	HAI surveillance system and Quarterly surveillance meeting	20	Continuous	Abuja	NCDC IPC TWG NICA AFENET NIDS	FMoH FMARD FMEnv Donor agencies	HAI quarterly report
3.1.1.3.3: Hold HAI annual review meeting	HAI review	5	Continuous	Abuja, Abuja	NCDC IPC TWG NICA Rep of sentinel sites IPC TWG	FMoH FMARD FMEnv Donor agencies	Annual HAI review report
STRATEGIC INTERVENTION 3.1.2: Strengthening IPC practices							
Activity 3.1.2.1: Develop an IPC curriculum for training of certified IPC professionals							
3.1.2.1.1: Develop an IPC curriculum for training of certified IPC practitioners	IPC curriculum	4	Short term	Abuja	IPC TWG NICA	FMoH FMARD FMEnv	Number of IPC certified practitioners trained

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.2: Cont'd							
Activity 3.1.2.1: cont'd							
3.1.2.2.2: Advocacy meetings for adoption as significant part of healthcare facilities accreditation by the Government	Advocacy meetings	5	Continuous	Abuja	NCDC NICA Society for Quality in Healthcare (SQHN)	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting reports
Activity 3.1.2.3: Establish and or strengthen IPC committee across all health facilities in the nation							
3.1.2.3.1: Advocacy meeting with the Health Minister and permanent secretary on the need for all healthcare facilities to form IPC committees	Advocacy meeting	2	Short term	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting report
3.1.2.3.2: Assessment of IPC programmes within healthcare facilities across the country	Assessment Survey	2	Continuous	Nation-wide	IPC TWG NICA AFENET	FMoH FMARD FMEEnv Donor agencies	Assessment Survey report
3.1.2.3.3: Training of representatives of IPC committees on identified gaps	Training	2	Continuous	Abuja	IPC TWG NICA	FMoH FMARD FMEEnv Donor agencies	Number of health facilities represented at the training

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.3: Improve IPC education and training							
Activity 3.1.3.1: improve IPC Education and Training							
3.1.3.1.1: Development of a generic basic IPC curriculum for training of frontline healthcare workers at various levels	Training curriculum	3	Medium Term	Abuja	IPC TWG NICA AFENET	FMoH FMARD FMEnv Donor agencies	Training curriculum available
3.1.3.1.2: Advocacy for use of curriculum by relevant institutions	Advocacy meetings	5	Medium term	Abuja	NCDC IPC TWG	FMoH FMARD FMEnv Donor agencies	Advocacy meeting report
Activity 3.1.3.2: Promote hand hygiene and other safe behavioral practices that limit the spread of infection							
3.1.3.2.1: Adaptation of Hand hygiene and other IPC BCC materials to local and culturally acceptable content and language	BCC materials	3	Short term	Abuja	NCDC IPC TWG NICA Academia	MoH FMARD FMEnv Donor agencies	BCC materials on IPC
3.1.3.2.2: Printing and distribution of BCC materials	Printing Distribution	200,000	Continuous	Abuja	NCDC IPC TWG	FMoH FMARD FMEnv	No of States reached with BCC materials

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.3: Improve IPC education and training							
Activity 3.1.3.1: improve IPC Education and Training							
3.1.3.2.3: Sensitisation and Awareness campaigns on Hand hygiene & other IPC practices	Awareness campaigns	10	Continuous	Nation-wide	NCDC NICA IPC TWG NOA CBOs FBOs	FMoH FMARD FMEEnv Donor agencies	Number of campaigns
3.1.3.2.4: Commemoration of the 5th May International hand hygiene day	Distribution of BCC materials as support to institutions and organisations Campaign promotion – media, organisations	10	Continuous	Nation-wide	NCDC NICA IPC TWG NOA CBOs FBOs	FMoH FMARD FMEEnv Donor agencies	No of BCC Materials distributed Number of campaigns supported
Activity 3.1.3.3 Promote biosafety as a standard of practice in all medical laboratories and relevant research centres							
3.1.3.3.1: Develop Biosafety and Biosecurity criteria as performance indicators for Medical Laboratories and relevant research centres	Biosafety & Biosecurity criteria	2	Short term	Abuja	IPC TWG NCDC LAB TWG	FMoH FMARD FMEEnv Donor agencies	Laboratory Biosafety and Biosecurity performance indicators

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.1.3:Cont'd							
Activity 3.1.3.3 Cont'd							
3.1.3.3.2: Institutional capacity development of Laboratories within the GLASS network on Biosafety and Biosecurity	Training	10	Continuous	Abuja	IPC TWG AMR TWG NCDC LAB TWG Academia	FMoH FMARD FMEEnv Donor agencies	Number of Trainings
STRATEGIC INTERVENTION 3.2.1: Introduce IPC programme in veterinary practice and aquatic and terrestrial animal husbandry							
Activity 3.2.1.1 Increase awareness on IPC in Veterinary practice and aquatic and terrestrial animal husbandry							
3.2.1.1.1: Sensitisation meetings to relevant stakeholders on the relevance of IPC in aquatic and terrestrial animal husbandry and veterinary practice	Sensitisation meetings	12	Continuous	Zonal	NCDC IPC TWG Academia	FMoH FMARD FMEEnv Donor agencies	Number of sensitisation meetings conducted
Activity 3.2.1.2 Conduct high level advocacy to relevant stakeholders on introduction of IPC for veterinary practice and aquatic and terrestrial husbandry							
3.2.1.2.1: Advocacy meetings with stakeholders on need to incorporate IPC in aquatic and terrestrial health	Advocacy meetings	12	Continuous	Zonal	NCDC IPC TWG Academia	FMoH FMARD FMEEnv Donor agencies	Meeting & visit reports

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.2.2 Improve IPC and farm biosecurity practices							
Activity 3.2.2.1 Support the development of IPC policies and guidelines for veterinary practice and aquatic and terrestrial animal husbandry							
3.2.2.1.1: Development of specific IPC and biosecurity guidelines for common farm types and in veterinary practice	IPC/ Biosecurity Guidelines	4	Short term	Abuja	NVMA IPC TWG Academia NSA Agricultural association	FMoH FMARD FMEnv Donor agencies	IPC biosecurity/ Guideline ready for use
Activity 3.2.2.2 Monitor for adherence to IPC guidelines in animal health							
3.2.2.2.1: Set up coordination mechanism for IPC and biosecurity compliance among farm types	Coordination Meetings	10	Continuous	Abuja	FMARD IPC TWG Academia	FMoH FMARD FMEnv Donor agencies	Coordination meeting reports
STRATEGIC INTERVENTION 3.2.3: Include hygiene and infection prevention and control as core (mandatory) content in training and education of veterinary professionals and animal health practitioners							
Activity 3.2.3.1 Advocate for the development and inclusion of IPC curriculum in undergraduate curricula for animal health professionals							
3.2.3.1.1: Advocacy meetings of animal health and veterinary professional bodies and groups	Advocacy meeting	5	Continuous	Abuja Abuja	NCDC IPC TWG VCN Agricultural association NSA NVMA	FMoH FMARD FMEnv Donor agencies	Advocacy meeting report

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.2.4 Improve IPC education and training for veterinary practice and aquatic and terrestrial animal husbandry							
Activity 3.2.4.1 Inclusion of IPC as continuing professional education/development trainings in veterinary practice and aquatic and terrestrial animal husbandry							
3.2.4.1.1: Develop IPC training materials for animal health	IPC Training	4	Short Term	Abuja	IPG TWG Academia NVMA NSA	FMoH FMARD FMEEnv Donor agencies	IPC training materials available
3.2.4.1.2: Advocate for inclusion of IPC trainings in annual professional meetings	Advocacy meeting	1	Short Term	Abuja	NCDC IPC TWG NVMA NSA Agricultural association	FMoH FMARD FMEEnv Donor agencies	Number of annual professional meetings that included IPC trainings
STRATEGIC INTERVENTION 3.3.1 Support implementation of food safety guidelines at the community level							
Activity 3.3.1.1 Provide information on hand hygiene and safe food handling at the community level							
3.3.1.1.1: Support sensitisation and Awareness campaigns on Hand hygiene & safe food handling practices	Awareness campaigns	5	Medium term	Nation-wide	NCDC NICA IPC TWG NOA CBOs FBOs	FMoH FMARD FMEEnv Donor agencies	No of campaigns supported
3.3.1.1.2: Adaptation of Advocacy Communication and social mobilisation (ACSM) materials related to hand hygiene and food safety to culturally acceptable contents	ACSM materials printing and distribution	200,000	Short Term	Abuja	FMoH FMARD FMEEnv IPC TWG NOA	FMEEnv FMARD FMoH	ACSM materials distributed

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.3.1 Cont'd							
Activity 3.3.1.2. Support monitoring and inspection of food producers and handlers							
3.3.1.2.1: Develop relevant IPC criteria to be included in inspection tools at abattoirs and food production facilities	IPC criteria for inspection tool	2	Short term	Abuja	IPC TWG	FMoH FMARD FMEEnv Donor agencies	IPC criteria for Inspection tool available
3.3.1.2.2: Advocacy for use of criteria as part of licensing requirements	Advocacy meeting	2	Short term	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting reports
STRATEGIC INTERVENTION 3.4.1							
Improve access to potable water in communities and within healthcare facilities							
Activity 3.4.1.1 Conduct advocacy to relevant stakeholders on provision of potable water at all healthcare facilities and communities							
3.4.1.1.1: Advocacy meeting of relevant stakeholders to improve access to potable water at healthcare facilities and communities	Advocacy meeting	2	Continuous	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting reports
STRATEGIC INTERVENTION 3.4.2 Ensure water quality standard							
Activity 3.4.2.1 Conduct sensitisation and education of the community on making their water safe							
3.4.2.1.1: Advocacy to relevant stakeholders for regular monitoring of water supplies, especially to health facilities	Advocacy meeting		Medium term	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy materials for use Advocacy meeting reports

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.3.1 Cont'd							
Activity 3.4.2.1 Cont'd							
3.4.2.1.2: Support sensitisation and awareness campaigns to community on ways of making water safe	Awareness campaigns	10	Medium term	Nation-wide	NCDC NICA IPC TWG NOA FBOs CBOs	FMoH FMARD FMEEnv Donor agencies	Number of campaigns supported
STRATEGIC INTERVENTION 3.5.1 Improve waste management practices							
Activity 3.5.1.1 Conduct advocacy to relevant stakeholders to provide logistic support for safe healthcare waste management							
3.5.1.1.1: Advocacy to relevant stakeholders for support on healthcare waste management	Advocacy meeting	2	Short term	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting report
Activity 3.5.1.2 Conduct advocacy to relevant stakeholders to increase coverage and support to local government areas on disposal of communal waste							
3.5.1.2.1: Advocacy to increase coverage and support to Local Government Areas on communal waste disposal	Advocacy meetings	12	Continuous	Abuja	NCDC IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting reports
STRATEGIC INTERVENTION 3.5.2							
Support safe disposal and management of sewage and fecal matter							
Activity 3.5.2.1 Support awareness and provide information on proper disposal of sewage and faeces							
3.5.2.1.1: Awareness and sensitisation on proper disposal of sewage and faeces	Awareness campaigns	5	Continuous	Abuja	IPC TWG NCDC NOA	FMoH FMARD FMEEnv Donor agencies	Number of campaigns held

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.6.1 Promote hand hygiene at the community level and schools							
Activity 3.6.1.1 Promotion of hand hygiene at the community and in schools							
3.6.1.1.1: Support commemoration of the 15th October Global hand washing day	Distribution of ACSM materials as support to institutions and organisations Campaign promotion – media, organisations	10	Continuous	Nation-wide	NCDC NICA IPC TWG NOA CBOs FBOs	FMoH FMARD FMEEnv Donor agencies	No of ACSM Materials distributed Number of campaigns supported
3.6.1.1.2: Adaptation of hand hygiene training materials for primary and secondary schools local use	School hand hygiene training materials	4	Medium term	Survey report	IPC TWG NICA Educationists	FMoH FMARD FMEEnv Donor agencies	Training material available
3.6.1.1.3: Advocacy for adoption of training material in to school curricula	Advocacy meeting	2	Medium term	Abuja	IPC TWG	FMoH FMARD FMEEnv Donor agencies	Advocacy meeting reports
STRATEGIC INTERVENTION 3.7.1							
Scale up immunization coverage in human and animal health sectors							
Activity 3.7.1.1 Improve immunization coverage							
3.7.1.1.1: Assessments of current immunization coverage for bacterial and key viral diseases in both humans and animals	Assessment survey	2	Continuous	Survey report	IPC TWG NCDC NICA AFENET Agricultural associations NVMA NSA	FMoH FMARD FMEEnv Donor agencies	Survey report

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.7.1 Cont'd							
Activity 3.7.1.1 Cont'd							
3.7.1.1.2: Dissemination of survey report	Dissemination meeting	2	Continuous	Nation-wide	NCDC NICA IPC TWG	FMoH FMARD FMEnv Donor agencies	Dissemination meeting report
3.7.1.1.3: Support sensitisation at the community level for vaccinations	Awareness campaigns	6	Medium term	Nation-wide	NCDC NICA IPC TWG NOA	FMoH FMARD FMEnv Donor agencies	Number of campaigns supported
STRATEGIC INTERVENTION 3.7.2							
Increase range of available vaccines in – country for both human and animal							
Activity 3.7.2.1: Increasing bacterial vaccines range available for immunization in both humans and animals							
3.7.2.1.1: Assessment of types of current vaccines being used for both human and animals	Survey report	2	Medium & Long term	Nation-wide	IPC TWG NCDC AFENET	FMoH FMARD FMEnv Donor agencies	Survey report
3.7.2.1.2: Survey on prevalence of vaccine preventable bacterial diseases	Survey report	2	Medium & Long term	Nation-wide	IPC TWG NCDC AFENET	FMoH FMARD FMEnv Donor agencies	Survey report

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 3.7.2 Cont'd							
Activity 3.7.2.1 Cont'd							
3.7.2.1.3: Survey report dissemination and advocacy for inclusion of vaccines against those diseases that contribute to burden of disease to be included in Immunisation programmes in both humans and	Dissemination and advocacy meeting Advocacy meetings with FMoH, NPHCDA and FMARD	4	Long term	Nation-wide	NCDC	FMoH FMARD FMEnv Donor agencies	Meeting reports
STRATEGIC INTERVENTION 3.7.3 Support surveillance for vaccination programmes in human and animal health to enable appropriate vaccination							
Activity 3.7.3.1 Surveillance of prevalent serotypes to support targeted vaccination programmes							
3.7.3.1.1: Surveillance on circulating serotypes of high burden bacterial diseases in both human and animal populations	National surveillance	10	Long Term	Abuja	IPC TWG NCDC AFENET	FMoH FMARD FMEnv Donor agencies	Surveillance reports
STRATEGIC INTERVENTION 4.1.1 Promote optimal procurement and distribution of quality antimicrobials and diagnostics for human and animal use							
Activity 4.1.1.1 Update existing documents (Essential Medicines List, Standard Treatment Guidelines and Veterinary formulary to guide procurements							
4.1.1.1.1: Prepare an up to date version of EDL	Updated documents	1	Short term	Abuja	FMoH, PCN, MDCN	FMoH, donor agencies/ partners	Updated EDL produced

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.1.1 Cont'd							
Activity 4.1.1.1 Cont'd							
4.1.1.1.2: Prepare an up to date version of STGs	Updated documents	1	Short term	Abuja	FMoH, PCN, MDCN	FMoH, FMARD/ donor agencies/ partners	Meeting reports
4.2.1.1.3: Adapt treatment guidelines for animals in accordance with OIE terrestrial and aquatic code	Animal treatment guideline	1	Medium term	Abuja	FMARD, VCN. NCDC	FMARD	Updated STG produced
4.1.1.1.4: Prepare an up to date version of Veterinary formulary	Updated documents	1	Short term	Abuja	PCN, VCN, FMARD, NAFDAC	FMARD	Increased rational prescribing among prescribers.
STRATEGIC INTERVENTION 4.1.2 Enhance local production of Antimicrobial agents and diagnostics for human and animal use							
Activity 4.1.2.1 Government enforcement of import prohibition list to encourage local manufacturers							
4.1.2.1.1: Advocacy to government on enforcement	Advocacy visits	2	Short term	Nation-wide	FMoH, FMoF	FMoH, Donor development agencies and partners	Number of advocacy visits
4.1.2.1.2: Advocacy to government on patronizing locally manufactured antimicrobial agents	Advocacy visits	4	Short term	Nation-wide	FMoH, FMoF, MOTI, MOEBP	FMoH Donor development agencies and partners	Number of advocacy visits

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.1.1 Cont'd							
Activity 4.1.2.2 Implement favourable tax regime for human and animal pharmaceutical raw, materials, active pharmaceutical ingredients and machineries							
4.1.2.2.1: Advocacy to government on favourable tax regimen to manufacturers	Advocacy visits		Short term	Nation-wide	FMoH FMARD FMoF	FMoH, Donor development agencies and partners	Number of advocacy visits
Activity 4.1.2.3 Creating interventionist fund for pharmaceutical industries							
4.1.2.3.1: Advocacy to government on Creating interventionist fund for pharmaceutical industries	Advocacy visits		Short term	Nation-wide	FMoH, FMoF, MOTI	FMoH Donor development agencies and partners	Number of advocacy visits.
STRATEGIC INTERVENTION 4.1.3 Expand NHIS coverage to include more enrollees							
Activity 4.1.3.1 Advocacy to NHIS and state governments to expand NHIS coverage							
4.1.3.1.1: Advocacy to state governments to enroll their employees	Advocacy visits	2	Short term	Nation-wide	FMoH, SMoH	FMoH	Increase in Percentage of enrolled state employees
4.1.3.1.2: Advocacy to state governments to establish community-based insurance schemes	Advocacy visits	2	Short term	Nation-wide	FMoH, NCDC	FMoH, NCDC	Number of advocacy visits done

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.2.1 Update and promote use of treatment guidelines and ensure prudent use in humans and animals							
Activity 4.2.1.1 Update and disseminate of STGs for treatment of animals to human and animal health workers							
4.2.1.1.1: Update and disseminate guidelines for treatment of animals to animal health workers at facility level	Disseminated Animal treatment guidelines	1	Medium term	Nation-wide	FMARD, NCDC	FMARD, Donor agencies and development partners	Updated Animal treatment guidelines available at facility levels
4.2.1.1.2 Update and disseminate guidelines for treatment of humans to health workers at facility level	Disseminated STG document	1	Short term	Nation-wide	FMoH, NCDC	FMoH Donor agencies and development partners	STGs available at facility levels
STRATEGIC INTERVENTION 4.2.2 Promote optimal prescribing and dispensing of antimicrobials in humans and animals							
Activity 4.2.2.1 Promote evidence based prescription of antimicrobials by health workers after appropriate laboratory investigations							
4.2.2.1.1: Training and retraining of human and animal HCW on RDU	Training	2	Medium Term	Nation-wide	FMoH, FMARD, NCDC	FMoH	Trained health and animal workers
Activity 4.2.2.2 Restrict non-therapeutic use of antimicrobials in animals (as growth promoters or as feed additives) according to OIE, FAO/CODEX guidelines							
4.2.2.2.1: Enforcement OIE, FAO/CODEX guidelines on non-therapeutic use of antimicrobials in animals	Compliance	2	Medium term	Natio-wide	FMARD, NCDC	FMARD	Proportion of animal feed producers in compliance

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.2.2.2 Cont'd							
Activity 4.2.2.3 monitoring and supervision of drug dispensers to encourage compliance with restriction on OTC sale of antimicrobials							
4.2.2.3.1: Support PCN, VCN and NAFDAC to carry monitoring and supervisory visits to drug dispensing outlets	Supervisory visits		Medium term	Nation-wide	PCN, VCN, NAFDAC	FMoH, FMARD	Number of supervisory visits
Activity 4.2.2.4 Institutionalize antimicrobial stewardship in human and animals sector							
4.2.2.4.1: define terms of reference for the committee	TOR	1	Short term	Nation-wide	AMR Secretariat (TWG)	FMoH, Donor agencies and development partners	TOR available
4.2.2.4.2: Develop and disseminate antimicrobial stewardship working manuals/ guidelines for hospitals and community AMS	Working manual	1	Short term	Nation-wide	AMR Secretariat	FMoH	Manual developed and disseminated
4.2.2.4.3: Advocate for creation of hospital and community committees at different levels	Advocacy visits	3	Federal-short term	Nation-wide	FMoH, NCDC	FMoH	Number of advocacy visits
4.2.2.4.4: Begin a National discussion on Veterinary AMS	Meeting of Veterinary Professions and relevant government agencies		Medium term		Nation wide	FMARD	Meeting Reports

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.3.1 Strengthen the capacity of regulatory agencies across one health sectors							
Activity 4.3.1.1 Support registration of all antimicrobial agents							
4.3.1.1.1: Training regulators on evaluation of dossier	Training and tool development	1	Medium term	Lagos	NAFDAC	FMoH, NAFDAC donor and development partners	Decrease in number of unregistered antimicrobial medicines in circulation
4.3.1.1.2: Facilitate electronic drug registration process	Electronic registration process	1	Medium term	Lagos	NAFDAC	FMoH, NAFDAC donor and development partners	Availability of e-registration on system
Activity 4.3.1.2. Conduct post-marketing surveillance on antimicrobials							
4.3.1.2.1 Advocate for creation of Pharmacovigilance committees (PVCs) where they don't exist and support proper functioning of existing ones	PVCs	1	Short term	Nation-wide	FMoH	FMoH	Number of advocacy visits
4.3.1.2.2: Training HCPs on reporting of ADRs, medication errors, lack of efficacy etc	Training	1	Short term	Nation-wide	FMoH	FMARD	Meeting Reports
4.3.1.2.3: Training on risk based surveillance	Training	1	Medium term	Nation-wide	NAFDAC	FMoH, NAFDAC	Number of people trained
4.3.1.2.4; Develop surveillance protocols and conduct periodic surveillance	Surveillance	1	Medium term	Nation-wide	NAFDAC	FMoH, NAFDAC	Number of surveillance activities carried out

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 4.3.1 Cont'd							
Activity 4.3.1.3 Conduct OIE PVS follow up mission							
4.3.1.3.1: Conduct OIE PVS follow up mission	Conduct follow up mission	1	Medium term	Nation-wide	FMARD	FMARD	Report of the follow up mission
Activity 4.3.1.4 Implement recommendations from PVS follow up mission about AMR in veterinary services							
4.3.1.4.1: Circulation of report to relevant stakeholders	Circulation of reports	1	Medium Term	Nation-wide	FMARD	FMARD	Report circulated
4.3.1.4.2: Convene round table meetings of partners	Convene meeting	1	Long Term	Nation-wide	FMARD	FMARD	Meeting convened
4.3.1.4.3 Advocacy for implementation	Advocacy	1	Long Term	Nation-wide	FMARD	FMARD	Advocacy carried out
Activity 4.3.1.5 Develop regulations for AMR from the animal disease control and veterinary surgeon acts							
4.3.1.5.1: Produce and circulate document on regulation	Regulatory document	1	Medium Term	Nation-wide	FMARD	FMARD	Regulations produced and circulated
STRATEGIC INTERVENTION 4.3.2 Enhance inter-sectoral coordination and collaboration between/amongst regulatory agencies							
Activity 4.3.2.1 Establish a one-health committee among regulators							
4.3.2.1.1: Develop TOR and constitute committee	TOR and committee	2	Short term	Abuja	FMoH, FMARD, FMEnv	FMoH	TOR developed and committee constituted

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.1.1. Assess available AMR funding mechanisms							
Activity 5.1.1.1 To assess available AMR funding mechanisms and create a database for storing information							
5.1.1.1.1: Conduct an assessment on current and potential AMR research funding within Nigeria, international, and various institutions	Desk reviews Interviews	1	July-September 2017	Abuja	NCDC FMoH FMARD FMEEnv	NCDC FMoH FMARD FMEEnv	Database on possible funding sources
5.1.1.1.2: Create a database/network of information on AMR funding	Purchase and or build servers	1	October-December 2017	AMR Secretariat	NCDC FMoH FMARD FMEEnv	NCDC FMoH FMARD FMEEnv	Website established with database access
STRATEGIC INTERVENTION 5.1.2. Conduct needs assessment and priority framework for AMR funding							
Activity 5.1.2.1 Develop a priority framework for assessing AMR project funding.							
5.1.2.1.1: Needs assessment for AMR funding	High level experts meeting	2	Every 2 years	Abuja	NCDC	NCDC Partners, MDAs, Development agencies, academia, research agencies	Priority framework/ Road map developed

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.1.3. Promote the use of innovative investment channels for AMR research funding							
Activity 5.1.3.1 To promote the use of innovative investment channels for AMR research funding							
5.1.3.1.1: Promote the use of government incentives such as tax holidays, patent extension, custom waiver for companies importing raw materials for development of drugs and vaccines	Advocacy to the government	Several	Ongoing	Abuja	NCDC FMARD FMEEnv	NCDC FMARD FMEEnv	Government commitment obtained
5.1.3.1.2: Explore the use of private equity firms to fund research and development in AMR	AMR Investment forum	2	Medium term	Lagos, Abuja	NCDC, Ministry of Trade and Investment	NCDC, FMoH, FMARD, FMoEdnv, Donor agencies and development partners	Potential investors identified
5.1.3.1.3: Look in to possible contributions and cost sharing from telecommunication companies, financial institutions, pharmaceuticals, media, vertical programmes	Advocacy visits, letters	Several	Ongoing	Nation-wide	NCDC FMARD FMEEnv	NCDC FMoH FMARD FMEEnv	Support obtained

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.1.3. Cont'd							
Activity 5.1.3.1 Cont'd							
5.1.3.1.4: Involve private organisations and institutions in managing government AMR research funds	Call for interest to manage pooled AMR funds	1	Medium term	Abuja	NCDC	NCDC, FMOH, FMARD, FMOEd, Donor agencies and development partners	Fund managers identified
STRATEGIC INTERVENTION 5.2.1 Support AMR researches at universities and relevant research institutes							
Activity 5.2.1.1. Inform and or provide grant opportunities to students and researchers							
5.2.1.1.1: Promote information sharing on AMR research to students and researchers in human, animal and environmental health departments	Advertise funding opportunities, call for research proposals, innovation challenges	Several	Medium term	Abuja	NCDC	Association, NGOs, private organisations	Publications and products
5.2.1.1.2: Encourage collaboration between institutions and across researchers within the one health system	Encourage institutions to collaborate on AMR research	Ongoing	Ongoing	Nation-wide	NCDC NUC FMOEd	NCDC Donor agencies and development partners	Inter-disciplinary research

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.3.1 Encourage research on and development of alternatives to antibiotics							
Activity 5.3.1.1 Promote the production and use of alternatives that will reduce the use of antimicrobial in humans, aquatic and terrestrial animals							
5.3.1.1.1: Encourage funding of basic research on the use of alternative to antimicrobials	Create awareness and advocacy on the implication	Several	Ongoing	Nation-wide	NCDC, FMARD	NCDC Donor agencies and development partners	New alternatives adopted
5.3.1.1.2: Partner with relevant organisations to support patenting and commercialization	Advocacy to identified organisations	Several	Ongoing	Nation-wide	NCDC	NOTAP, Ministry of Trade and Investment, Bank of Industry, PMGMAN, Donor agencies and development partners	Commercial patented diagnostics and pharmaceuticals

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA -TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.3.1 Cont'd							
Activity 5.3.1.2. Promote the research and production of vaccines for diseases in humans, aquatic and terrestrial animals							
5.3.1.2.1: Promote the production of vaccines for diseases in humans	Identify and 'twin' local laboratories with foreign laboratories to support local production of human vaccines Support the development of existing physical infrastructure and Partner with institutions to train scientists in Federal vaccine production lab Yaba and/ or NIMR on vaccine production, use exchange programmes	Continuous	Long term		NCDC	NCDC, FMoH, Donor agencies and development partners	Vaccine production in Nigeria
5.3.1.2.2: Expand capacity for local vaccine production in animals	Support the expansion of existing physical infrastructure Partner with institutions to train scientists in NVRI on vaccine production, use exchange programmes	Continuous	Long term	Jos	NCDC FMARD FMEnv	FMARD, Donor agencies and development partners	Vaccine production in Nigeria

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
STRATEGIC INTERVENTION 5.4.1. To invest in advanced diagnostic and pharmaceutical techniques for AMR research and development							
Activity 5.4.1.1. Invest in antibiotic supply chain innovations							
5.4.1.1.1: Develop the use of technology in tracking antibiotic sales to end users in the drug distribution system	Solicit funding for innovative tracking solutions		Short to medium term	Abuja	NCDC FMoH FMARD FMEnv	Donor agencies and development partners	Funding obtained, innovation prototypes/models
5.3.1.2.2: Expand capacity for local vaccine production in animals	Support the expansion of existing physical infrastructure Partner with institutions to train scientists in NVRI on vaccine production, use exchange programmes	Continuous	Long term	Jos	NCDC FMARD FMEnv	FMARD, Donor agencies and development partners	Vaccine production in Nigeria
Activity 5.4.1.2. Support the development of novel antibiotics and innovative diagnostics							
5.4.1.2.1: Encourage the development of antibiotics with novel mechanisms of action	Partner with pharma-ceuticals, seek collaboration with agencies focused on drug development	Continuous	Long term	Abuja	NCDC	Pharmaceuticals, Donor agencies and development partners	New drugs produced and approved for human consumption

SUB-ACTIVITY	UNIT	QTY	TIME LINE	LOCA-TION	RESPONSIBLE ENTITY	SOURCE OF FUNDING	INDICATOR
Activity 5.4.1.3. Invest in genome sequencing of bacterial isolates							
5.4.1.3.1: Encourage the use of gene sequencing techniques in identifying AMR mechanisms	Identify and partner with organisations (e.g APIN, IHVN) with existing genome sequencing infrastructure, acquire machines, build capacity and store genomes in world gene bank	Several	Medium to Long term	Abuja	NCDC FMARD FMEnv	Donor agencies and development partners	Increased utilization of genome sequencing
5.4.1.3.2: Invest in establishing an integrated national gene bank for storage	Solicit for funding and technical expertise from partners/ experts in gene banking	1	Long term	Abuja	NCDC Lab	NCDC Donor agencies and development partners	Gene bank established

5 Monitoring and Evaluation

The AMR status of the population must be monitored regularly to enable a better understanding of the scope of the problem throughout the country as well as to measure any progress made in addressing it. Such monitoring requires the collection, collation, analysis and management of data from the Human and Animal Health, as well as Food, Agriculture and Environment sectors. Programmes and projects with strong Monitoring and Evaluation (M&E) components tend to stay on track. The role of M&E will be to provide a strategic link with the relevant stakeholders to ensure that strategies are dynamic and more effective in responding to the antimicrobial resistance challenges in the country. Additionally, it enables problems to be detected earlier, thereby reducing the likelihood of major cost overruns or time delays.

A Monitoring and Evaluation system therefore needs to be in place pre-implementation, to ensure that results are reported in a timely and efficient manner. In addition, such a system supports the establishment of transparent feedback loops with implementing agencies, stakeholders and the public. Monitoring and evaluation helps in extracting relevant information from ongoing activities to be used for programmatic fine-tuning, reorientation and future planning. Without an effective M&E structure, it would be impossible to evaluate if activities are executed as planned and outcomes achieved as anticipated, as well as derive learning on how to improve future activities.

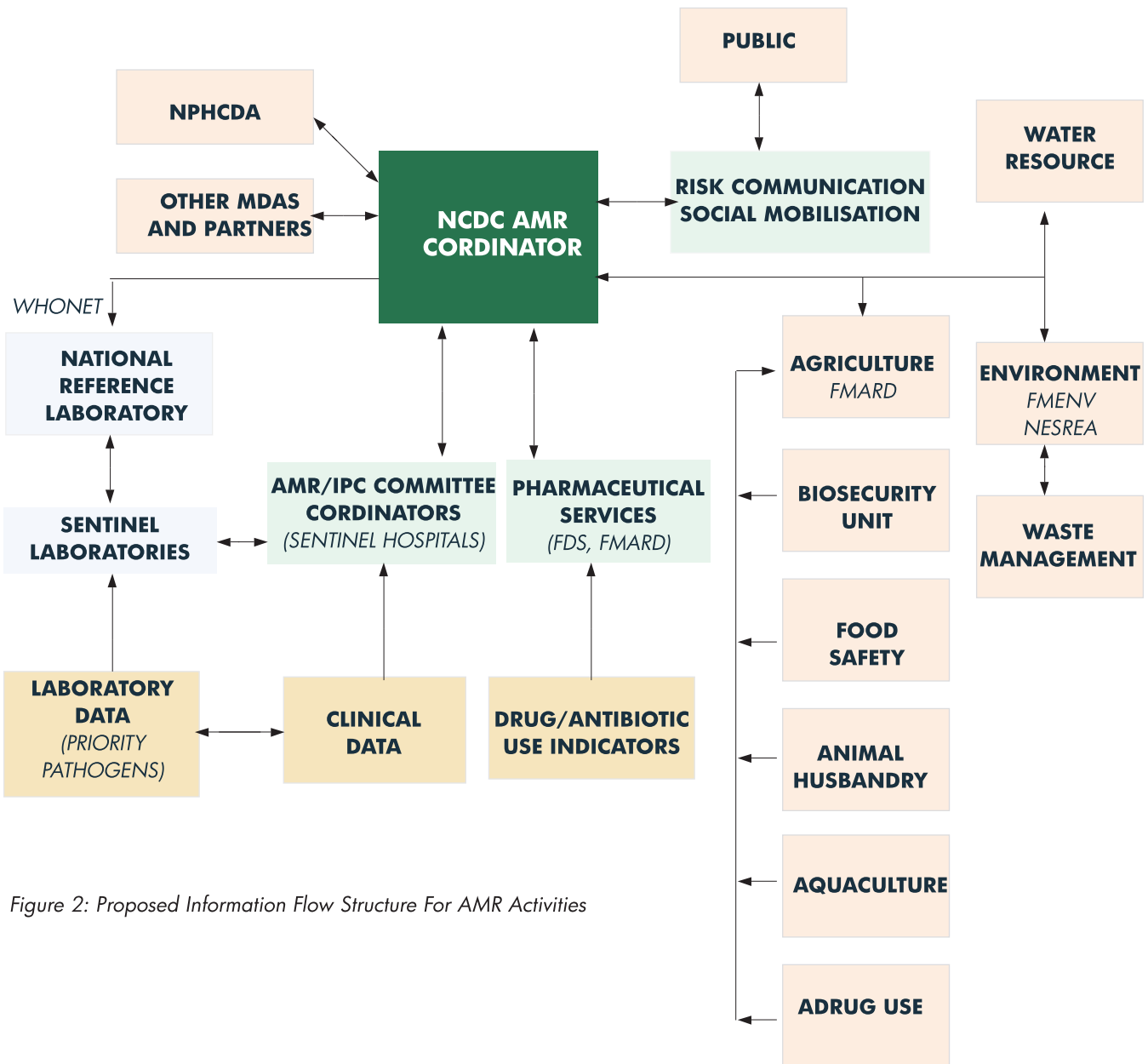


Figure 2: Proposed Information Flow Structure For AMR Activities

MONITORING AND EVALUATION FRAMEWORK

OBJECTIVES	INDICATORS	BASELINE		SHORT TERM 2017-2018	MID TERM 2019-2020	LONG TERM 2021-2022	DATA SOURCE AND FREQUENCY
		VALUE	YEAR				
Objective 1: Increase awareness, knowledge and behavioral change on AMR and related topics among Nigerian	Functional NBCCCG established at the National level	NA		YES			Meeting reports
	Baseline survey conducted in 36 States and FCT	NA	2018	YES			
	AMR communication advocacy kit developed	-		YES			
	Proportion of school curricula (primary, secondary and tertiary) that are reviewed to include AMR	NA	2018			50%	
	Proportion of health-related national professional bodies that included AMR as part of CME in Nigeria	NA	2018			70%	
Objective 2: Set up a AMR national surveillance system, strengthen institutional capacities for early AMR detection and surveillance activities across sectors	Functional national Committee for AMR surveillance across human and animal health established	0	2017	YES			
	Number of laboratories participating in EQA and reporting regularly to GLASS	0	2017	8	22-40	45-50	
	Number of veterinary public health laboratories conduct antimicrobial susceptibility testing for key isolates	0	2017	1	2	3	

MONITORING AND EVALUATION FRAMEWORK CONT'D

OBJECTIVES	INDICATORS	BASELINE		SHORT TERM 2017-2018	MID TERM 2019-2020	LONG TERM 2021-2022	DATA SOURCE AND FREQUENCY
		VALUE	YEAR				
Objective 3: Strengthen infection prevention and control programme in human, animal health and environment and promote the use of vaccines	IPC Baseline survey conducted, and report submitted to the Public Health department in Federal Ministry of Health	-	2018				
	National policy on IPC is reviewed and approved by NCH	-			YES		-
	Number of IPC policy printed and disseminated to 36 states MOH	NA	2018			70%	
	Proportion of health facility with functional IPC committees in 36 states	-				70%	
Objective 4: Improve access to quality antimicrobial agents for infections, promote antimicrobial stewardship and strengthen regulatory agencies across all sectors	Proportion of states meeting 80% immunization and reactive vaccination coverage	-				80%	
	National standard treatment guideline and National drug policy reviewed and disseminated	-				YES	
	Proportion of animal feed producers in compliance with OIE, FAO/CODEX guidelines on non-therapeutic use of antimicrobials in animals in 36 states	-				50%	

MONITORING AND EVALUATION FRAMEWORK CONT'D

OBJECTIVES	INDICATORS	BASELINE		SHORT TERM 2017-2018	MID TERM 2019-2020	LONG TERM 2021-2022	DATA SOURCE AND FREQUENCY
		VALUE	YEAR				
Objective 4: cont'd	List of registered antimicrobials approved for use in the country are reviewed every two years	NA	2018	YES		YES	
Objective 5: Invest in advanced AMR techniques and promote the use of innovative investment channels	Number and types of vaccines manufactured for humans				1	4	
	Percentage of grant opportunities disseminated to institutions				25%	50%	
	Percentage of students or grantees with access to AMR research opportunities					50%	



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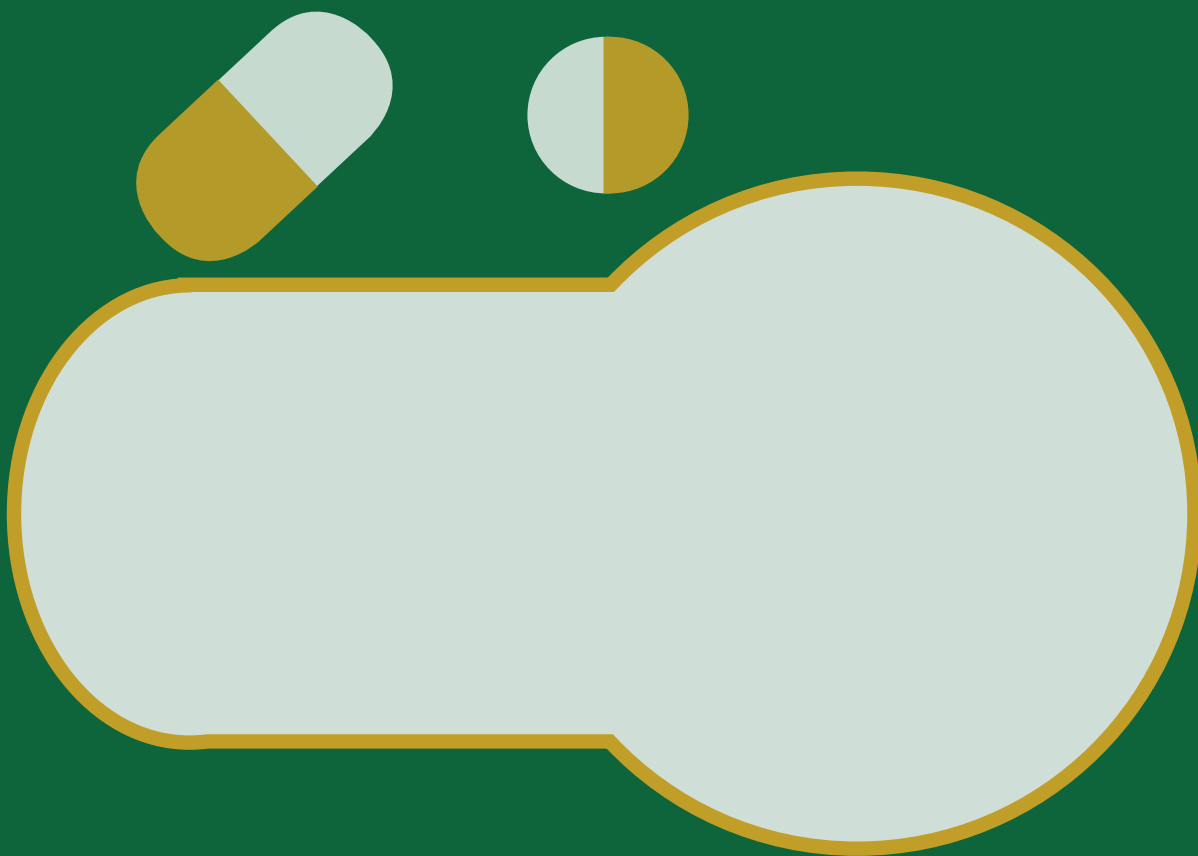
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