ANTIMICROBIAL RESISTANCE NEWSLETTER

A Monthly Publication by the National Antimicrobial Secretariat

March 2021 ISSUE 03

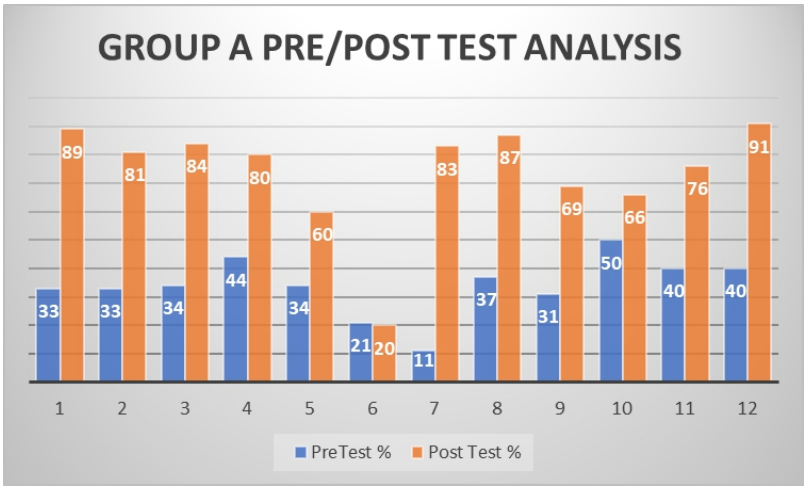
IN THIS EDITION

SPOTLIGHT ARTICLE

Participants at the Basic Equipment Maintenance and Troubleshooting training: 7-14 March 2021

Basic Equipment Maintenance and Troubleshooting Training

Globally and in Nigeria antimicrobial surveillance is largely laboratory based; having functional equipment is critical to the having an effective system. Laboratory equipment maintenance is a risk management practice used to maximize the delivery of critical laboratory services and minimize the overall impact of instrument downtime, commodity loss, and service interruption. Many laboratory equipment breakdowns are largely attributed to operator's misuse, which training and retraining will minimize. There is therefore a need to build the capacity of personnel working in the laboratory with knowledge, skills and abilities to effectively operate and maintain the various laboratory equipment to ensure reliable, accurate and quality laboratory results.



Result of pre/post-test assessment during the basic equipment maintenance and troubleshooting training

An assessment was conducted to assess the status of the laboratory equipment management program, training and practices within AMR surveillance network by the Fleming Fund include

- Gaps in knowledge on ancillary equipment use and maintenance
- Lack of appropriate equipment for laboratory activities, etc

This highlighted the need to conduct training on basic equipment maintenance and troubleshooting for staff working in facilities involved in AMR. A training focused on minimizing laboratory equipment breakdown due to misuse which will, in turn, prolong the lifespan of equipment as a result of proper use and maintenance.

Basic equipment maintenance and troubleshooting training conducted for staff working at the National Reference Laboratories and Surveillance sites within the AMR surveillance network within the human health by addressing the gaps identified by the assessment.

The training had in attendance thirty-five participants (35) from Aminu Kano University Teaching Hospital, University College Hospital Ibadan, National Hospital Abuja, Ladoke Akintola University Teaching Hospital, Osogbo, University of Calabar Teaching Hospital, Lagos University Teaching Hospital, National Reference Laboratory and the consortium partners: Institute of Human Virology and International Foundation against Infectious Disease.

The training sessions were participatory, with participants taking part in the hands-on demonstrations/practical sessions, including group work in solving assigned tasks. The posttest assessment showed at least 15% increase in knowledge on equipment maintenance and troubleshooting

"There is need to build the capacity of personnel working in the laboratory with knowledge, skills and abilities to effectively operate and maintain the various laboratory equipment to ensure reliable, accurate and quality laboratory results"

FEATURED EVENTS

NATIONAL AMR SURVEILLANCE SYSTEM: TRAINING PROGRAM FOR PERSONNEL AT THE NATIONAL AMR SECRETARIAT (NCDC) ON DATA MANAGEMENT AND DATA QUALITY ASSURANCE.
SUPPORTED BY THE FLEMING FUND COUNTRY GRANT

Date: 11th March 2021
Venue: Reiz Continental Hotel, Abuja

Agenda Item	Time	Facilitator
Training introduction ▪ Introduction of participants and facilitators ▪ Norms and expectations ▪ Training overview ▪ Overall Objectives	9:00 -9:15	NCDC
Short quiz	9:15 – 9:40	NCDC
Overview	9:40 – 11:00	IFAIN

Picture of data management training: 11 March 2021

Data Management Training for NCDC AMR Unit Staff

The Fleming Fund Country Grant consortium ((IFAIN) trained the AMR unit at the NCDC on data management and quality assurance for AMR surveillance.

Fourth Animal Health Technical Working Group (TWG) Meeting

The Animal Health Sector held a two-day technical working group meeting of the sector, supported by Fleming Fund country grant consortium (LMS). The AMR NAP tracker was reviewed, proposals for some priority activities developed, review of AMU data collection tool for survey in veterinary clinics /hospitals, draft SOP for the use of disinfectants on farms and draft farmer's guide on the use of Biosecurity were reviewed.

Fourth Animal Health TWG meeting 17-18 March 2021

Antimicrobial Use Implementation Plan Meeting: 18-19 March 2021

Antimicrobial Use Implementation Plan Meeting

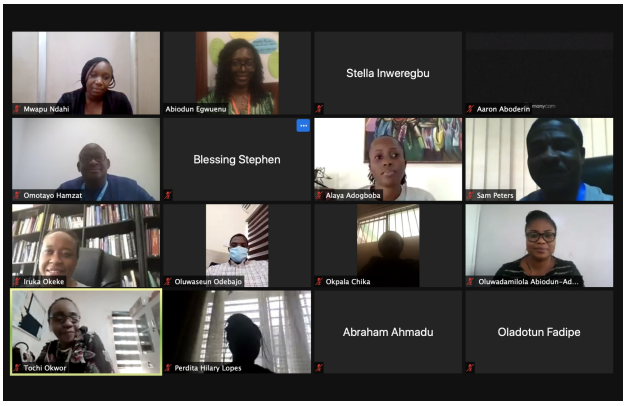
The National Antimicrobial Stewardship pillar of the National AMR TWG supported by the Fleming Fund country grant consortium members (IFAIN), held a two-day meeting to review a plan to pilot antimicrobial stewardship implementation use implementation. Eighteen participants were in attendance. At the end of the meeting, two hospitals: Lagos University Teaching Hospital and Obafemi Awolowo University Teaching Hospitals and Complexes were selected as pilot sites.

FEATURED EVENTS

National Antimicrobial Stewardship and IPC Pillars' Retreat

The Nigeria Centre for Disease Control (NCDC) in collaboration with USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program organized a four-day retreat for the infection, prevention and control and, antimicrobial stewardship pillars. The retreat had in attendance 47 participants. Outcomes included the terms of reference for the antimicrobial stewardship and infection prevention and control pillars were developed, stakeholders were mapped, and the AMS and IPC activities within the AMR national action plan were reviewed.

Two-day National Antimicrobial Stewardship Pillar Retreat: 24-27 March 2021



National AMR Coordination Committee Meeting: 16 March 2021

National AMR Coordination Committee Meeting: 16 March 2021

The National AMR Coordination Committee held a one-day meeting. The aims of the meeting were to review AMR response updates from stakeholders and provide strategic guidance for response activities in Nigeria. The meeting had in attendance twenty participants which included representatives from relevant Ministries, Department and Agencies, and partner agencies.

Needs Assessment of the National Environmental Reference Laboratories in Kano and Port Harcourt

The status and capacity of the National Environmental Standards and Regulations Enforcement Agency's (NESREA) laboratories to conduct antimicrobial resistance (AMR) surveillance were assessed with support of the Fleming Fund Country Grant in December 2020. The assessment revealed that the current state and capacity cannot handle all aspects of AMR surveillance. The key strategies identified were to set a standards AMR and AMU surveillance in the environment and, ensure enforcement of regulations.

Validation meeting of Needs Assessment of National Environmental Reference Laboratories in Kano and Port Harcourt

EVENTS AND WEBINARS

KEMRI Annual Scientific and Health Conference

Link to Register:

https://www.kemri.org/kash-11/#1571270386351-cc6b5c63-8644

Date: 7-11 June 2021

KASH is the KEMRI Annual Scientific and Health Conference launched in 2010

BSAC SPRING CONFERENCE 2021: Stewarding the AMR Agenda Through the Lenses of Prevention, Diagnosis and Treatment

Link to Register:

http://www.bsac-conference.com/

Date: 29-30 April 2021

2021 marks 50 years of the BSAC. BSAC is celebrating 50 years of being at the forefront of antimicrobial chemotherapy. Join us to celebrate this landmark anniversary at our annual Spring Conference, which this year will be held fully virtually. Please register and submit your abstracts to be considered for poster presentation at the meeting.

AMR R&D efforts in the CMC and formulation arena: Do it right the first time!
Link to Register:
https://attendee.gotowebinar.com/register/6685871137565241871?source=REVIVE
Date: 29 April 2021 at 17:00-18:30 CEST
The presentation will discuss:

- Are CMC and formulation efforts treated as the foster child in the innovation and development armament?
- Underestimating CMC and formulation aspects can potentially cause significant delays and project failures
- Appropriate (what, how and when) CMC and formulation innovation and development strategies can improve overall probability of project success, can bring competitive advantages (including IP umbrella) and can reduce time to market
- Do it right the first time!

World Sepsis Congress 2021
This innovative virtual 2-day global event is set to hold on April 21-22, 2021 i.e. 2 weeks away - have you registered yet?

If not, do so here for free, the gallery of amazing speakers is available here. For anything else, like sponsors, supporters, FAQ, and more, please check out the congress website.

PAST WEBINARS

Discovering and developing new treatments for tuberculosis

Link to Recording: https://revive.gardp.org/discovering-and-developing-new-treatments-for-tuberculosis/s

Date: Wed, Mar 24, 2021

One Health AMR Stewardship Conference

Link to recording:

https://gardp.org/news-resources/webinar-learning-from-covid-19-to-tackle-the-silent-pandemic-of-antibiotic-resistance/

Date: 10-12 March 2021

Learning from COVID-19 to tackle the silent pandemic of antibiotic resistance

Link to Recording: https://revive.gardp.org/learning-from-covid-19-to-tackle-the-silent-pandemic-of-antibiotic-resistance/

Date: 4 March 2021

IPC Leadership and Management Optimizing the Environment for IPC: Screening and Triage for COVID-19 and Ebola

Link to recording:

https://icanetwork.us17.list-manage.com/track/click?u=92bd846aa12ae53f160d78928&id=701062a75f&e=052b0d5c47

Date: 24 March 2021

PUBLICATIONS

Community-based antibiotic access and use in six low-income and middle-income countries: a mixed-method approach Nga T T Do, Huong T L Vu, Chuc T K Nguyen, Sureeporn Punpuing, Wasif Ali Khan, Margaret Gyapong, et al.

Using quantitative and qualitative assessments of antibiotic access and use in six LMICs across Africa (Mozambique, Ghana, and South Africa) and Asia (Bangladesh, Vietnam, and Thailand) the authors compared community-based antibiotic access and use practices to identify contextually specific targets for interventions to improve antibiotic use practices. Read full article here.

The role of vaccines in combatting antimicrobial resistance Micoli, F., Bagnoli, F., Rappuoli, R. et al.

The use of antibiotics has enabled the successful treatment of bacterial infections, saving the lives and improving the health of many patients worldwide. However, the emergence and spread of antimicrobial resistance (AMR) has been highlighted as a global threat by different health organizations, and pathogens resistant to antimicrobials cause substantial morbidity and death. Read full article here.

Could Efforts to Fight the Coronavirus Lead to Overuse of Antibiotics?

Study from Pew Charitable Trusts' antibiotic resistance project shows more than half of hospitalized COVID-19 patients in U.S. received antibiotics in pandemic's first six months. The authors note that the significant amount of antibiotic use for COVID-19 patients and the increased hospitalization rates of the pandemic call for devoting resources to strengthen stewardship programmes.

Read full article here.

Policy actors and human and animal health practitioners' perceptions of antimicrobial use and resistance in Tanzania: a qualitative study Frumence G., Mboera L.E.G., Katale B.Z., Sindato C., et al.

The future policies of AMR need to capitalize in the identified strengths and opportunities as well as designing interventions to improve public awareness of AMR and community engagement, deployment of adequate human resources and ensure adequate resource mobilization to meet AMR needs. Read more.

Antibiotic use prior to seeking medical care in patients with persistent fever: a cross-sectional study in four low- and middle-income countries Edited by Brecht Ingelbeen, Kanika D

Community-level antibiotic use contributes to antimicrobial resistance, but is rarely monitored as part of efforts to optimize antibiotic use in low- and middle-income countries (LMICs). This article aims at investigating aetiologies of infections in patients

Read the paper here.

Efflux pump activity, biofilm formation and antibiotic resistance profile of Klebsiella spp. isolated from clinical samples at Lagos University Teaching Hospital Sharon Akinpelu, Abraham Ajayi et al

Nosocomial and community acquired multidrug resistant Klebsiella infections are widespread resulting in high morbidity and mortality due to limited number of antibiotics treatment options. This study investigated efflux pump activity, biofilm forming potential and antibiotic susceptibility profile of Klebsiella spp. isolated from clinical samples in a tertiary hospital in Lagos Nigeria. Read more.

PUBLICATIONS

The epidemiologic impact and cost-effectiveness of new tuberculosis vaccines on multidrug-resistant tuberculosis in India and China Weerasuriya C.K., Harris R.C., McQuaid C.F., Bozzani F., et al.

Despite recent advances through the development pipeline, how novel tuberculosis (TB) vaccines might affect rifampicin-resistant and multidrug-resistant tuberculosis (RR/MDR-TB) is unknown. We investigated the epidemiologic impact, cost-effectiveness, and budget impact of hypothetical novel prophylactic prevention of disease TB vaccines on RR/MDR-TB in China and India. Read the article here:

Impact of an antimicrobial stewardship programme on reducing broad spectrum antibiotic use and its effect on Carbapenem-Resistant Acinetobacter Baumannii (CRAB) in hospitals in Jordan Edited by Dawood Yusef, Wail A. Hayajneh

This article aims to evaluate the impact of an antimicrobial stewardship programme (ASP) on reducing broad-spectrum antibiotic use and its effect on carbapenem-resistant Acinetobacter baumannii (CRAb) in hospitalized patients.

Read the paper here.

Prolonged treatment of COVID-19 Pneumonia with high flow nasal oxygen: a story of oxygen and resilience G Audley, P Frankenfeld

This paper describes COVID-19 pandemic as a significant strain on the oxygen delivery infrastructure of health facilities in resource constrained health systems. Also discuss the oxygen delivery infrastructure needed for intervention, as well as the psychosocial impact on those undergoing treatment.

Read the paper here.

Survey of antibiotic and antifungal prescribing in patients with suspected and confirmed COVID-19 in Scottish hospital Seatonabcheryl et al.

This article highlights the following; Antibiotic prevalence survey of 2/5 hospitalised SARS-CoV-2 patients at the epidemic peak in Scotland, Antibiotics in 38% SARS-CoV-2 patients in wards and critical care units and Narrow spectrum antibiotics predominant in wards reflecting national recommendations

Read the paper here.

Design, architecture, pharmacy: making a difference to understanding anti-microbial resistance (AMR) S. Walker, S Hignett, R Lim, C Parkhurst, F. Samuel

This paper presents the work of the AHRC-funded cross-disciplinary project, 'Information and Architecture in Persuasive Pharmacy Space: combating antimicrobial resistance' (IDAPPS) which is designed to support one of the strategic aims of the UK 5-Year Antimicrobial Resistance strategy 2013-18. The paper introduces the working methods and outcomes of work to consider how we can use space within a pharmacy to encourage people to engage with information about AMR and self-care; and how we can design information so it is understood, whether on paper or in digital form. Read the paper **here**.

Media representation of the antimicrobial resistance (AMR) crisis: An Australian perspective SL Bouchoucha, E Whatman, MJ Johnstone

In this study, the media reports analysed were substantive and well informed. Just what impact they have had on the public in terms of improving its knowledge of the AMR issue or motivating behaviour change to mitigate the AMR crisis was unable to be ascertained. The strategic use of the media to galvanise an effective public response to the AMR crises thus requires further investigation.

Read more

PUBLICATIONS

Coronavirus disease 2019 and antimicrobial resistance: parallel and interacting health emergencies Robby Nieuwlaat, Lawrence Mbuagbaw, Dominik Mertz, Lori L Burrows, Dawn M E Bowdish, et al.

In this article, the authors suggest that understanding how COVID-19 affects AMR trends and what we can expect if these trends remain the same or worsen will help us to plan the next steps for tackling AMR. Researchers should start collecting data to measure the impact of current COVID-19 policies and programs on AMR. Read more

Challenges around COVID-19 at a tertiary-level healthcare facility in South Africa and strategies implemented for improvement T. Thomasl, A. E. Laher et al.

In this paper, the authors discuss the challenges experienced while facing COVID-19 at a tertiary-level institution in Gauteng province, SA, and the dynamic strategies implemented to deal with the epidemic. Read more

Antimicrobial resistance in the environment: considerations for current and future risk assessment of veterinary medicinal products

In this article, the authors reviewed available information on the emissions and the environmental fate of veterinary medicinal products as sources of antimicrobial resistance (AMR) and antimicrobial resistant genes to and within the environment, and their risk to human and animal health. The document considers the suitability of the current risk assessment process for AMR and risk mitigation recommendations, and notes knowledge gaps and

Underestimation of co-infections in COVID-19 due to non-discriminatory use of antibiotics Chien-Yi Chang, Kok-Gan Chan

Coronavirus disease 2019 (COVID-19) pandemic is causing huge impacts on health and social care systems globally. Several health authorities have published their guidelines for COVID-19 diagnosis and treatment including the administration of antimicrobial agents. The author suggests that the administration of antibiotics on suspected COVID-19 patients is heavily dependent on the judgement and experience of frontline clinicians, especially at the early stage of pandemic outbreak. Read more

Antimicrobial use, drug-resistant infections and COVID-19 Timothy M. Rawson, Damien Ming, Raheelah Ahmad et al.

Coronavirus disease 2019 (COVID-19) has placed huge strains on health and social care systems and resources globally. The significance of infection prevention and control through measures such as hand hygiene, social distancing and self-isolation have now been emphasized at a societal level. It is important to consider the short and longer-term consequences that COVID-19 may have on antimicrobial use and drug-resistant infections. Read more

Mechanisms of Antimicrobial Resistance (AMR) and Alternative Approaches to Overcome AMR Moo, Chew-Li; Yang, Shun-Kai; Yusoff, Khatijah; Ajat, Mokrish; Thomas, Warren; Abushelaibi, Aisha; Lim, Swee-Hua-Erin; Lai, Kok-Song

In this article, the authors reviewed the causes and mechanisms of AMR as background, and then provide insights into a novel, future emerging or evolving strategies that are currently being evaluated and which may be developed in the future to tackle the progression of AMR. Read more

research needs.. Read more

PUBLICATIONS

The role of vaccines in fighting antimicrobial resistance (AMR) KU Jansen, AS Anderson
This paper describes the drivers of antibiotic use and subsequent development of AMR; it makes the case how existing vaccines are already participating in combatting AMR, describe future prospects for the role of new vaccines in development to reduce AMR, and highlight challenges associated with future vaccine development to combat AMR. Read more

'There is worse to come': the biopolitics of traumatism in antimicrobial resistance (AMR) Nik Brown, Sarah Nettleton
This paper reflects on the different futures and imaginaries constructed through the politics and policy of antimicrobial resistance (AMR). The authors examine the role of catastrophism, trauma and notions of 'resistance' expressed at different moments in the development of the AMR debate. Read more

Will 10 million people die a year due to antimicrobial resistance by 2050? JA Ayukekbong, M Ntemgwa et al
This paper describes the health-seeking behaviors that lead to the threat of AMR and healthcare practices that drive the development of AMR in developing countries and discuss alternatives for disease prevention as well as other treatment options worth exploring.. Read more

Antimicrobial resistance (AMR): significance to food quality and safety DW Nelson, JE Moore, & JR Rao
In this article, the authors propose that prudent employment of the existing arsenal of available and licenced antibiotics needs to be emphasized and schemes adopted including antimicrobial stewardship codes of conduct, in order to extend the usefulness and efficacy of such antibiotic agents for generations. New economic incentives need to be developed to encourage investment into novel antibiotics by the pharmaceutical industry, so that society will have effective tools to combat infectious diseases for generations to come. Read more

Antimicrobial resistance in human populations: challenges and opportunities S Allcock, EH Young, M Holmes et al.
The authors highlight the importance of population-based approaches to assess the association between antimicrobial use and AMR in humans and animals. Such approaches are needed to improve our understanding of the development and spread of AMR in order to inform strategies for the prevention, detection and management of AMR, and to support the sustainable use of antimicrobials in healthcare. Read more

Strategies to overcome antimicrobial resistance (AMR) making use of non-essential target inhibitors: a review G Annunziato
Antibiotics have always been considered as one of the most relevant discoveries of the twentieth century. Unfortunately, the dawn of the antibiotic era has sadly corresponded to the rise of the phenomenon of antimicrobial resistance (AMR), which is a natural process whereby microbes evolve in such a way to withstand the action of drugs. In this paper, the author focuses on the discovery of antibiotic adjuvants and on new tools to study and reduce the prevalence of resistant bacterial infections. Read more

PUBLICATIONS

The role of vaccines in fighting antimicrobial resistance (AMR) KU Jansen, AS Anderson
In this paper the authors describe the drivers of antibiotic use and subsequent development of AMR; they make the case on how existing vaccines are already participating in combatting AMR, describe future prospects for the role of new vaccines in development to reduce AMR, and highlight challenges associated with future vaccine development to combat AMR. Read more

Monitoring global progress on addressing antimicrobial resistance: analysis report of the second round of results of AMR country self-assessment survey 2018 World Health Organization
Antimicrobial resistance (AMR) is a grave threat to human health and economic development. The overuse and misuse of antimicrobials in humans, animals and plants have accelerated the natural evolutionary processes by which microbes become resistant to antimicrobial treatments. Today, some infections have even been rendered untreatable by existing antimicrobials. Projections suggest that AMR is likely to exacerbate global economic inequality, with the economic costs disproportionately affecting poorer countries. Read more

The threat of antimicrobial resistance in developing countries: causes and control strategies JA Ayukekbong, M Ntemgwa et al
The causes of antimicrobial resistance (AMR) in developing countries are complex and may be rooted in practices of health care professionals and patients' behavior towards the use of antimicrobials as well as supply chains of antimicrobials in the population. Some of these factors may include inappropriate prescription practices, inadequate patient education, and non-human use of antimicrobials such as in animal production. Read more

'LMICs as reservoirs of AMR': a comparative analysis of policy discourse on antimicrobial resistance with reference to Pakistan MS Khan, A Durrance-Bagale et al.
This article describes why the COVID-19 pandemic has increased our awareness of AMR and presents the immense global impact of AMR on society as a whole. Furthermore, an attempt is made to stress the importance of tackling AMR in the future and the role of the orthopaedic community in this worldwide effort. Read more

MENTORSHIP AND OTHER OPPORTUNITIES

Call for best practices in transforming food systems for affordable healthy diets and addressing key drivers of food insecurity and malnutrition

This call aims to gather additional input for the 2021 edition of "The State of Food Security and Nutrition in the World" (SOFI), an annual flagship report jointly prepared by FAO, IFAD, UNICEF, WHO and WFP

Register here: http://newsletters.fao.org/c/116lpU7ZgttUFd8AUjU9TU37R

ASTMH Young Investigator Award

Application deadline - April 21, 2021

Award: Winners receive a $900 US cash award, First-Tier Mention receives a $600 US cash award and Honorable Mention receives a $450 US cash award. Thisis limited to current student/post-doctoral members of ASTMH who have a primary role in various aspects of tropical disease research and experimentation.

Apply here: https://www.astmh.org/awards-fellowships-medals/awards-and-honors/nomination-submissions

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Travel Award for Low/Low-Middle Income (LMIC) Trainees

Application deadline - April 21, 2021

Award: **u**p to $1,000 US cash award and complimentary registration, Eligibility is limited to a student or trainee who must be primarily working and living in a Low/Low-Middle Income Country (LMIC), not based full-time in a U.S. or European research institute.

Apply here: https://www.astmh.org/annual-meeting/awards/acmcip-travel-award-for-lmic-trainees-final.pdf

One Health Regional Network for the Horn of Africa (HORN)

HORN has provided open-access to One Health eLearning materials through a two-tiered structure: Tier 1: Introducing One Health and Tier 2: Generic and transferable research skills.

To access the HORN training materials, click the following link http://onehealthhorn.net/horn-curriculum

ASTMH Committee on Global Health (ACGH) Student/Post-Doc Travel Awards

Application deadline - April 21, 2021

Award: Up to $750 US cash award and complimentary registration. Eligibility is limited to graduate students, medical students, residents and post-doctoral fellows who are conducting global health research and actively participating in advocacy, program implementation or networking efforts for global health. The award recipients will present their research orally or as a poster during the Annual Meeting.

Apply here: https://www.astmh.org/awards-fellowships-medals/awards-and-honors/nomination-submissions

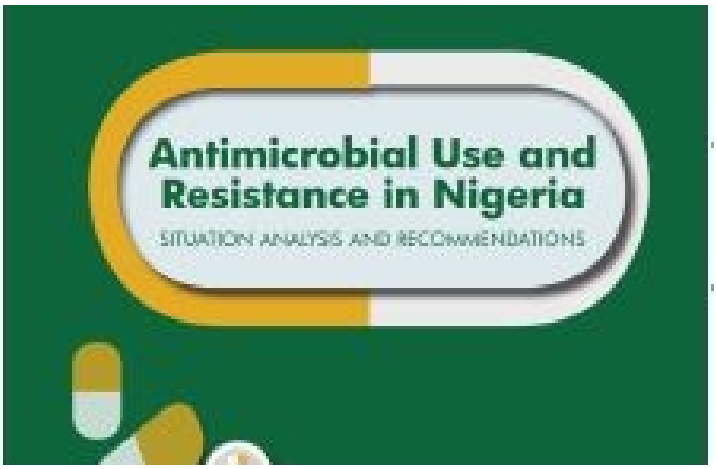
PHOTO GALLERY

Advocacy visit to State Ministry of Health Adamawa, during assessment of Antimicrobial Stewardship (in collaboration with CFID): 29th March 2021

Antimicrobial Stewardship Intervention needs assessment at General Hospital Takum, Taraba state (in collaboration with CFID): 29th March 2021

National Level Training on Surgical Site Infection Surveillance Study at Reiz Continental Hotel, Abuja: 8 March 2021

LEARN MORE ABOUT AMR RESPONSE IN NIGERIA

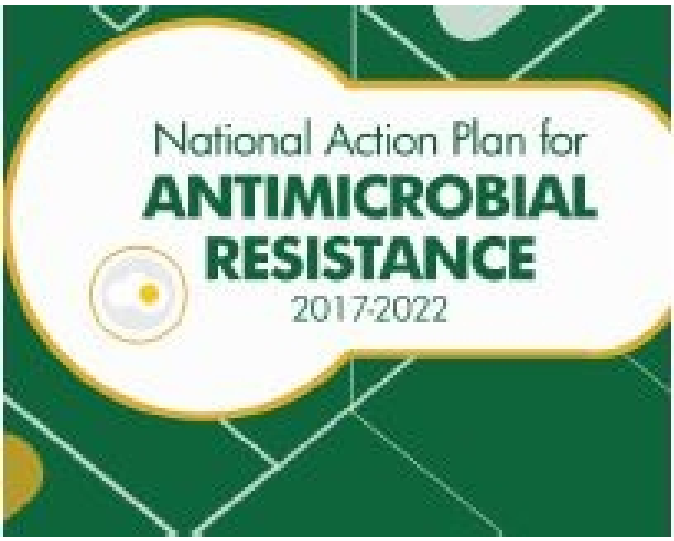


National AMR situation:

- Antimicrobial use and resistance in Nigeria: situation analysis and recommendations, 2017 https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf
- Joint External Evaluation 2017 https://ncdc.gov.ng/themes/common/docs/protocols/70_1511012198.pdf

Response plans:

- National Action Plan for Antimicrobial Resistance https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf
- National Action Plan for Health Security https://ncdc.gov.ng/themes/common/files/establishment/5e88f9e22d2b4e4563b527005c8a0c43.pdf
- Laboratory guidelines for AMR surveillance One Health Strategic Plan *https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf*



To join the National AMR surveillance system (call to action):

- Assess the laboratory assessment checklist by clicking on the URL: https://ncdc.gov.ng/diseases/guidelines
- Click on the NCDC AMR surveillance self-assessment checklist and complete the self-assessment form
- Send the form to amr_surv@ncdc.gov.ng

For other disease conditions

- Read the Weekly Epidemiology Report here