Holistic Approaches to Combating Antimicrobial Resistance:

Lessons from Clinical Practice and Interdisciplinary Strategies

November 18, 2024

9:00 GMT | 10:00 WAT

WORLD AMR AWARENESS WEEK
18-24 NOVEMBER

THE GLOBAL HEALTH NETWORK AFRICA

Register.

Housekeeping

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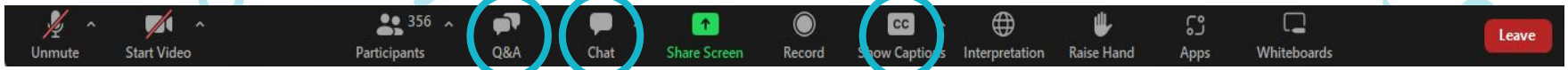


Panel & Agenda

Chair

Godwin Pius Ohemu

Welcome address

Dr. Olarenwaju Ibigbami

Brief Overview of The Global Health Network Africa

Dr. Paul Kingpriest

Strengthening Antimicrobial Stewardship and Infection Control: Lessons from Clinical Practice and Research

Prof. Ibinabo Laura Oboro

Optimizing Infection Prevention Strategies to Combat AMR in Clinical Settings

Dr. Mary Alex-Wele

Integrating Oral Health and Antimicrobial Stewardship in Adolescent Care: Strategies for Reducing AMR

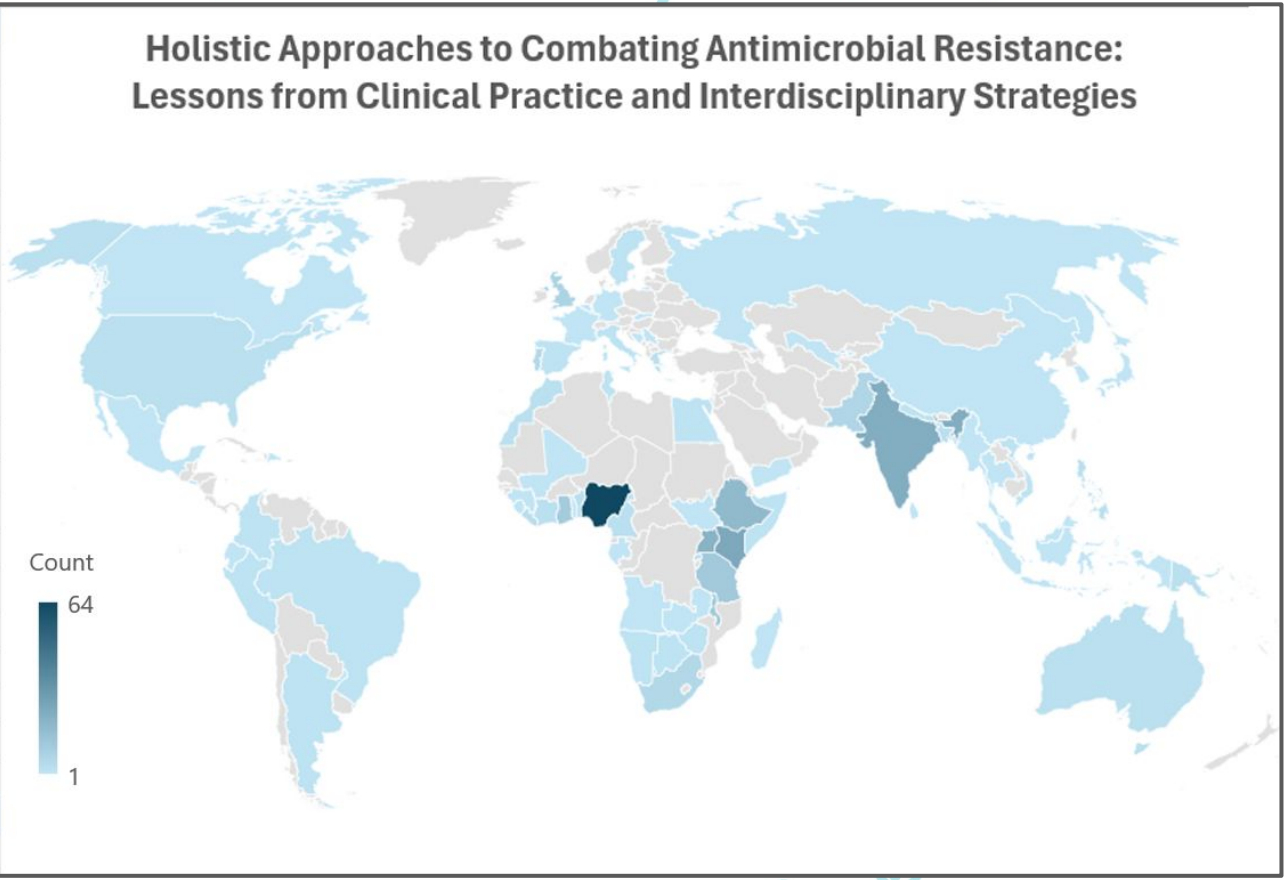
Prof. Morenike Oluwatoyin Folayan

Closing Remarks

Goodness Ogeyi

Registered for today's webinar - Thank you!

	Country	Count
1	Nigeria	64
2	Kenya	25
3	India	23
4	Uganda	21
5	Ethiopia	18
6	Tanzania	12
7	Malawi	12
8	Ghana	11
9	United Kingdom	8
10	Pakistan	7
11	Portugal	6
12	South Africa	6
13	Rwanda	4
14	Liberia	4
15	Benin	3
16	Bangladesh	3
17	Philippines	3
18	Congo, Democrat	3
19	Morocco	3
20	Côte d'Ivoire	3
	Total	
	76	320



Welcome address

Dr. Olarenwaju Ibigbami

Coordinator,
The Global Health Network Nigeria

WORLD AMR AWARENESS WEEK
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THE GLOBAL HEALTH NETWORK AFRICA

Brief Overview of The Global Health Network Africa

Dr. Paul Kingpriest

Research/Project Coordinator,
The Global Health Network, University of Oxford

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Empowering Researchers for Global Health Advancements

The Global Health Network

Equity in where research happens & who benefits

Agenda

1. Introduction – What is The Global Health Network Africa
2. Opportunities for The Global Health Network Africa
    - Resources and Training

What is The Global Health Network Africa

Coordination and support of global health research capacity building training initiatives

Connect researchers, health research institutes, healthcare workers and policymakers of the country

Support the exchange of knowledge and expertise, sharing and disseminating resources

Facilitate training initiatives

THE GLOBAL HEALTH NETWORK
Enabling research by sharing knowledge

The Global Health Network Africa

Regional Centres

AFRICA CDC
Centres for Disease Control and Prevention
Safeguarding Africa's Health

amref health africa

CANTAM
Central Africa Clinical Research Network

EACCR
Eastern Africa Consortium for Clinical Research

TESA
Trials of Excellence in Southern Africa

WANETAM
West African Network for TB, AIDS and Malaria

Country Centres

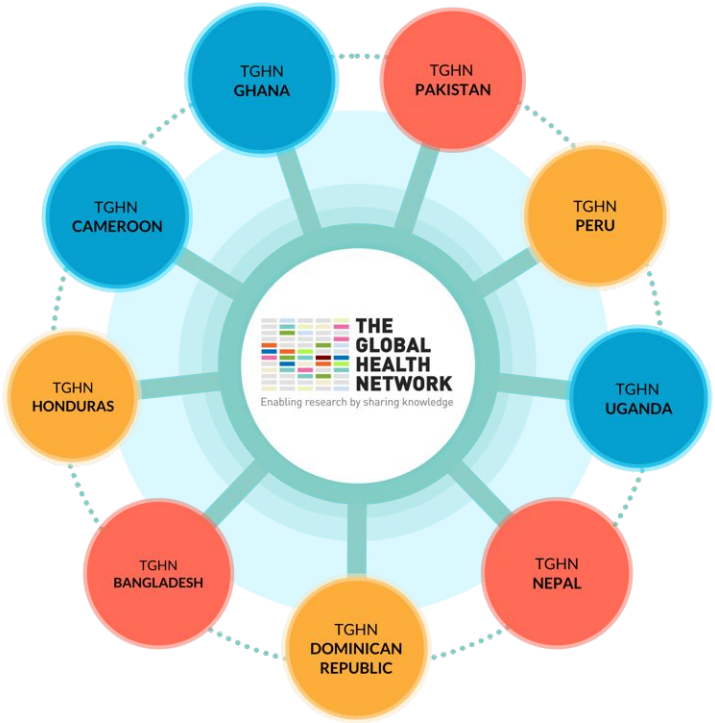
- Ghana — Kumasi Center for Collaborative Research in Tropical Medicine (KCCR)
- Sudan — Sudan Academy of Sciences
- Malawi — Anglican Council Health of Malawi; muzu University of alth Sciences (JHeS)
- Kenya — KEMRI Wellcome Trust
- Uganda — Uganda Virus Research Institute
- Cameroon — University of Yaounde I
- Rwanda — Rwanda Biomedical Centre
- Nigeria — Obafemi Awolowo University

EDCTP · IDRC · CRDI Canada · Burdett Trust for Nursing · wellcome · BILL & MELINDA GATES foundation

**Dots on the map indicate collaborators/affiliates to The Global Health Network's current projects. Country centres include those with existing MOU/in progress with the indicated institutions.*

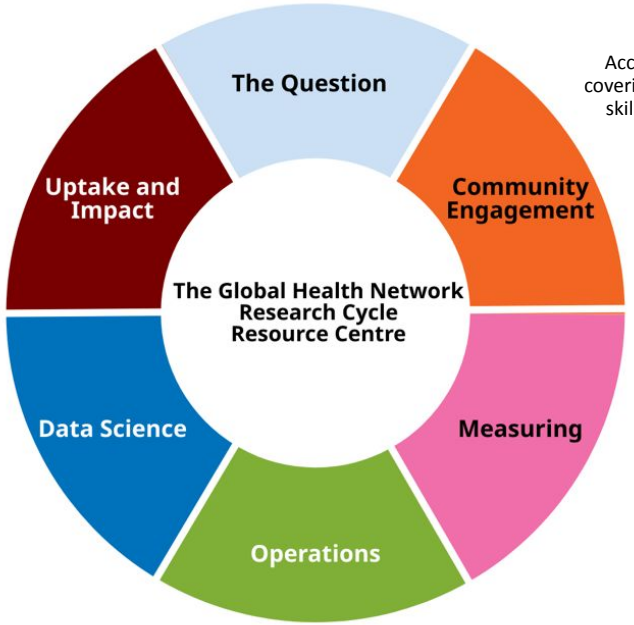
Federated Partnership of Country Centres

Each centre operates autonomously to win funding, address their local research focus and capacity gaps – connected with each other and working to shared standards and processes to maintain quality and access to each other resources



THE GLOBAL HEALTH NETWORK
Enabling research by sharing knowledge

Opportunities; Access to Resources and Training



Free eLearning courses + certificates
Accessible to anyone, 24/7, and covering topics in essential research skills essential topics related to health research

Research Toolkits
Step-by-step guides to conducting and managing a research project in low-resource settings, Sharing protocols, guidelines, best practices

Professional Development Scheme (PDS)
Tool which captures core competencies, qualifications, training and experience. Measures skills and impact of training

Webinars and Workshops
Online or in-person seminars, for skills transfer and infromation sharing

Supported Learning sessions
Person-centered, to foster effective learning strategies

Data Science Clubs and Clinics
Forums for engagement, to exchange opinions, raise questions

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Visit www.africa.tghn.org

To Learn More. Thank you.

Strengthening Antimicrobial Stewardship and Infection Control: Lessons from Clinical Practice and Research

Prof. Ibinabo Laura Oboro

Consultant Clinical Microbiologist, Co-Chair and Focal Person, IPC/AMS committee, Rivers State University Teaching Hospital, Rivers State, Nigeria

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THE GLOBAL HEALTH NETWORK AFRICA

Prof. Ibinabo Laura Oboro

Consultant Clinical Microbiologist, Co-Chair and Focal Person, IPC/AMS committee, Rivers State University Teaching Hospital, Rivers State, Nigeria

Strengthening Antimicrobial Stewardship and Infection Control: Lessons from Clinical Practice and Research

Prof. Ibinabo L. Oboro

Co-Chair and Focal Person, IPC/AMS committee, Rivers State University Teaching Hospital

Associate Dean, Faculty of Basic Clinical Sciences, Rivers State University

Scope

- Introduce antimicrobial stewardship
- Essential role of antimicrobial stewardship in enhancing patient outcomes and minimizing AMR
- Share successful strategies implemented in various healthcare settings to promote responsible antibiotic use and improve infection control measures.

Infection prevention and control

- A scientific approach and practical solution to prevent harm (caused by infections) to patients, health workers and visitors/community.
- Practices applied during every single medical interaction
- Ensures safety of patient, health worker, community
- Combined IPC/ AMS committee and teams is beneficial

✔ Identification and prioritization of infection risks

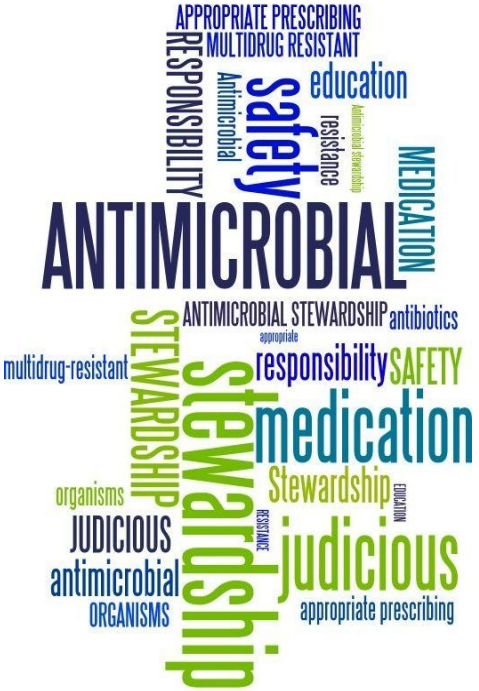
✔ Application of resources to minimize, monitor, and control the problem

Antimicrobial Stewardship

A coordinated program that promotes the appropriate use of antimicrobials

right **D**rug, correct **D**ose, right **D**rug-route, suitable **D**uration, timely **D**e-escalation to pathogen-directed therapy

- ✔Decreases unnecessary antimicrobial exposure
- ✔Reduces antimicrobial resistance
- ✔Decreases the spread of multidrug-resistant infections
- ✔Improves patient outcomes
  - reduced morbidity, mortality, length of hospital stay and healthcare costs
- ✔Reduces antibiotic-related adverse effects



APIC, 2021;Jishna et al2023
https://www.ncbi.nlm.nih.gov/books/NBK572068/

Core Elements of Hospital Antibiotic Stewardship Programs

Hospital Leadership Commitment
Dedicate necessary human, financial, and information technology resources.

Accountability
Appoint a leader or co-leaders, such as a physician and pharmacist, responsible for program management and outcomes.

Pharmacy Expertise (previously "Drug Expertise"):
Appoint a pharmacist, ideally as the co-leader of the stewardship program, to help lead implementation efforts to improve antibiotic use.

Action
Implement interventions, such as prospective audit and feedback or preauthorization, to improve antibiotic use.

Tracking
Monitor antibiotic prescribing, impact of interventions, and other important outcomes, like *C. difficile* infections and resistance patterns.

Reporting
Regularly report information on antibiotic use and resistance to prescribers, pharmacists, nurses, and hospital leadership.

Education
Educate prescribers, pharmacists, nurses, and patients about adverse reactions from antibiotics, antibiotic resistance, and optimal prescribing.

https://www.iccs-home.com/news/2019/11/25/cdc-updates-core-elements-of-hospital-antibiotic-stewardship-programs

AMS Interventions

Core strategies

- Prospective Audit and Feedback
- Prior Authorization

Supplemental strategies

- Prompt IV to oral switch
- Antibiotic "Time outs"
- Dose optimization
- Automatic alerts
- Time-sensitive automatic stop orders
- Detection and prevention of antibiotic-related drug-drug interaction

- Antimicrobial guidelines
- *Improves prescribing for specific syndromes but should not interfere with prompt and effective treatment for severe infection or sepsis*
- Education

Structural

Persuasive

Enabling

Restrictive

Dijck et. al., 2018

Interventions in AMS

What works best?

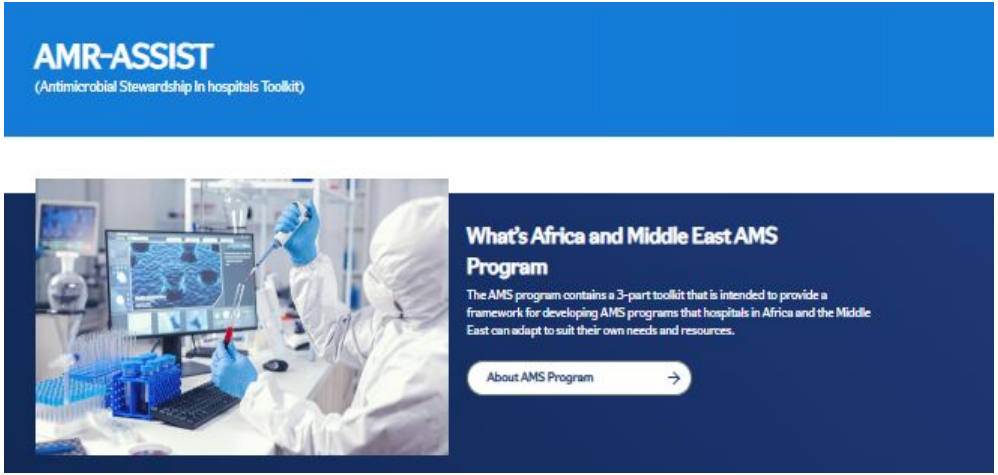
Success stories

RSUTH IPC/AMS program

- **Governance/ Programmatic approach**
  - ✔ AMS Committee and Team
  - ✔ Management support including budgetary allocation
  - ✔ Knowledgeable lead and motivated multidisciplinary team
  - ✔ Dedicated time for AMS activities
  - ✔ Annual AMS Plan and budget

ASSESSMENT CHECKLISTS

Surveys



- ✔ World Health Organization (WHO)
- ✔ Global PPS
- ✔ Nigeria Centre for Disease Control (NCDC)
- ✔ Clinical Microbiology and Infectious

AMS Challenges in Nigeria

Table 2: Identified challenges impeding AMS practice in Nigerian hospitals

Challenges	No of Hospitals (%)
Lack of Funding	15 (75)
Poor awareness of AMS usefulness by staff	12 (60)
Prescribers' opposition	11 (55)
Lack of IT Facilities	9 (45)
No ASP committee	9 (45)
Higher priorities	8 (40)
Lack of Staff	8 (40)
Lack of Leadership Support	7 (35)
Administration not aware of programme	6 (30)

ASP =Antimicrobial Stewardship Programme; IT= Information Technology

Table 1: Availability of AMS practices and identified gaps from hospitals in Nigeria

AMS Elements	Components of the AMS Elements	Present/Available n = 20	
		Yes (%)	No (%)
Antimicrobial Stewardship Committee	Existence of AMS Committees	6 (30)	14 (70)
	Written evidence of leadership commitment	3 (15)	17 (85)
	Resource Allocation	1 (5)	19 (95)
	AMS identified as priority	1 (5)	19 (95)
	AMS policy document	1 (5)	19 (95)
Accountability and Responsibility	Multidisciplinary AMS Committee	6 (30)	14 (70)
	AMS Terms of Reference	2 (10)	18 (90)
	Regular Meetings	0	20 (100)
AMS Actions	Treatment Guidelines	1 (5)	19 (95)
	Antibiotic Approvals/Restrictions	0	20 (100)
	Antibiotic Audit	0	20 (100)
	Hospital Formulary	4 (20)	16 (80)
Education and Training	Training for Prescribers and other AMS stakeholders	1 (5)	19 (95)
Monitoring and Evaluation	Indication, Dose, Duration, Route Monitoring	0	20 (100)
	Surveillance	7 (35)	13 (65)
Reporting and Feedback	Regular reports to prescribers and others, and Feedbacks	0	20 (100)
AMS Support Facilities	Clinical laboratories for culture and sensitivity	20 (100)	0
	Prescription sheets	20 (100)	0
	Drug charts	20 (100)	0
	Standardized drug chart and prescription sheet	0	20 (100)
	IT Facilities	11 (55)	9 (45)
IPC Activity	Antibiotic policy	2 (10)	18 (90)
	IPC Committee	5 (25)	15 (75)
	AMS-IPC Interaction	1 (5)	19 (95)

Iregbu et al. Afr. J. Clin. Exper. Microbiol. 2021; 22 (1): 60 - 66

AMS program implementation

Implement core and supplemental strategies

Start with low hanging fruits

Develop and implement Policies and Guidelines

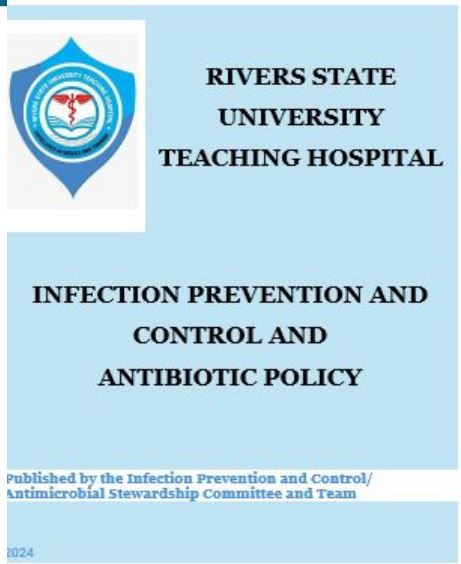
ORIGINAL ARTICLE

'Prospective Audit with Intervention and Feedback' as a Core Antimicrobial Stewardship Strategy in the Paediatrics Department of a Nigerian Tertiary Hospital

Ola-Bello, Olafoyekemi Ibiwunmi[1]; Akintan, Patricia Eyanya[2,3]; Osuagwu, Chioma Stella[1,2]; Oshun, Philip Olayiwola[1,2]; Fajolu, Iretiola Bamikeolu[2,3]; Nwaiwu, Obiyo[4]; Olusanya, Adedunni[4]; Busari, Abdulwasiu Adeniyi[4]; Roberts, Alero Ann[2,5]; Temiye, Edamisan Olusoji[2,3]; Omotayo, Oluwafisayo[2]; Oduyebo, Oyinlola Omoniyi[1,2]

Author Information

Nigerian Postgraduate Medical Journal 30(2):p 137-143, Apr–Jun 2023. | **DOI:** 10.4103/npmj.npmj_257_22



Absence of guidelines and policies in Nigerian health institutions

Summary of quality indicators

	Our hospital 2021-P3		Country	
	N	%	N	%
Medical				
Reason in notes	51	78.5	353	42.0
Guidelines missing	48	73.8	618	73.6
Guideline compliant	6	60.0	113	82.5
Stop/review date documented	26	40.0	423	50.4
Surgical				
Reason in notes	33	82.5	381	48.8
Guidelines missing	38	95.0	604	77.4
Guideline compliant	0	0.0	91	89.2
Stop/review date documented	27	67.5	577	74.0
ICU				
Reason in notes	19	90.5	52	44.8
Guidelines missing	1	4.8	88	75.9
Guideline compliant	10	100.0	10	66.7
Stop/review date	1	4.8	60	51.7

Antibiotic quality indicators by activity (medical, surgery, ICU) for all patients receiving
- For reason in notes and stop/review date documented: Count at antibacterial lev
- For guidelines missing: Count on NA (= no guideline for an indication) at patient
- For guideline compliance: Count at patient level and diagnosis for compliance= y
if 1 antibiotic by diagnosis is not compliant, this combination therapy as a whole fo

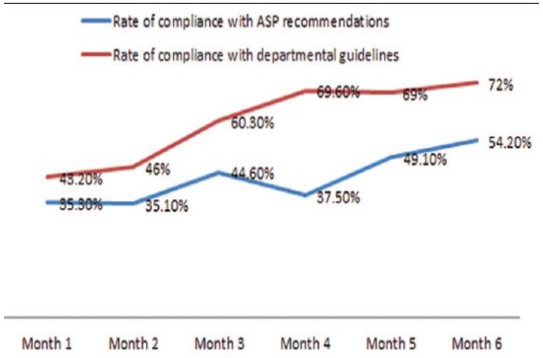
Summary of quality indicators for antibiotic use

	Our hospital 2024-P1		Country		Continent		Hospital type		Europ
	N	%	N	%	N	%	N	%	N
Medical									
Reason in notes	235	81.9	203	64.6	4885	80.8	203	64.6	2134
Guidelines missing	277	96.5	90	28.7	614	10.2	90	28.7	364
Guideline compliant	0	0.0	104	90.4	2862	76.0	104	90.4	1432
Stop/review date documented	22	7.7	180	57.3	2368	39.2	180	57.3	917
Surgical									
Reason in notes	121	70.8	254	67.9	2972	78.5	254	67.9	727
Guidelines missing	164	95.9	171	45.7	737	19.5	171	45.7	35
Guideline compliant	0	0.0	86	100.0	1370	68.6	86	100.0	572
Stop/review date documented	17	9.9	313	83.7	1868	49.4	313	83.7	473
ICU									
Reason in notes	52	89.7	60	89.6	1178	88.8	60	89.6	479
Guidelines missing	58	100.0	56	83.6	154	11.6	56	83.6	84
Guideline compliant	0	0.0	3	100.0	604	80.6	3	100.0	295
Stop/review date	3	5.2	16	23.9	559	42.1	16	23.9	256

Antibiotic quality indicators by activity (medical, surgery, ICU) for all patients receiving antibacterials for systemic use (ATC J01).
- For reason in notes and stop/review date documented: Count at antibacterial level.
- For guidelines missing: Count on NA (= no guideline for an indication) at patient level and diagnosis over total scores for this indicator.
- For guideline compliance: Count at patient level and diagnosis for compliance= yes or no only. For combination therapy with >1 antibiotic: if 1 antibiotic by diagnosis is not compliant, this combination therapy as a whole for this diagnosis will be counted as non-compliant.

Global PPS Q4 2021; 2024

AMS Success



The total number of antibiotics prescribed per patient also decreased during this study period with an average prescription of 1.97 drugs per patient.

- Ola-Bello *et al*, 2023

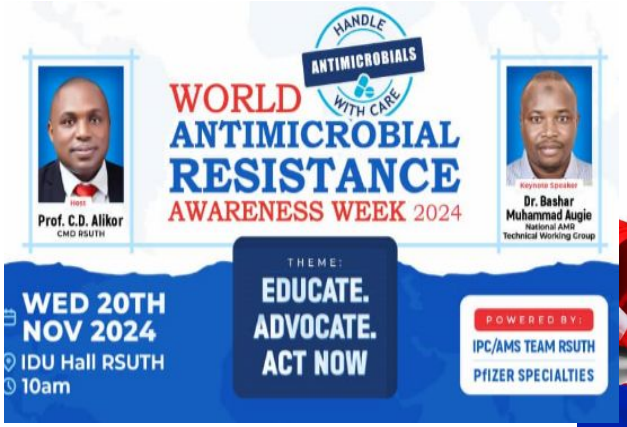
Indicator	Month						Total
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	
Number of therapies	264 (100)	211 (100)	164 (100)	158 (100)	177 (100)	172 (100)	1146 (100)
Reason in note	213 (81.0)	206 (97.6)	164 (100)	158 (100)	177 (100)	172 (100)	1090 (95.1)
Stop/review date	64 (24.2)	65 (30.8)	86 (52.4)	48 (30.4)	60 (33.9)	38 (22.1)	361 (31.5)
Compliance rates*	114 (43.2)	97 (46.0)	99 (60.3)	110 (69.6)	122 (69)	124 (72)	666 (58.1)
IV therapy	250 (94.6)	200 (94.8)	160 (97.6)	150 (94.9)	173 (97.7)	158 (91.8)	1091 (95.2)
Appropriate	114 (43.2)	97 (46.0)	99 (60.3)	110 (69.6)	122 (69)	124 (72)	666 (58.1)
Inappropriate	150 (56.8)	114 (54)	65 (39.6)	48 (30.4)	55 (31.1)	48 (28)	480 (41.9)
Intervention**	150 (100)	114 (100)	65 (100)	48 (100)	55 (100)	48 (100)	480 (100)
Compliance - with ASP***	53 (35.3)	40 (35.1)	29 (44.6)	18 (37.5)	27 (49.1)	26 (54.2)	193 (40.2)

All outcomes have statistically significant trend ($P<0.05$, P value for testing of trend in proportion). *Compliance with departmental antibiotic guidelines, **Refers to number of interventions on inappropriate therapy, ***Refers to compliance based on interventions/recommendations. IV: Intravenous, ASP: Antimicrobial stewardship programme

Summary of quality indicator per monthly activity

Ola-bello et al, 2024

AMS/IPC Education



- ✔ Tailored to professional groups
- ✔ At orientation and annually
- ✔ Grand rounds and clinical meetings
- ✔ At monthly meetings of IPC/AMS team
- ✔ Formal training for IPC/AMS team
- ✔ Mark notable days – WAAW, WHW day
- ✔ Outpatient clinic settings


WORLD ANTIMICROBIAL


WORLD HAND HYGIENE DAY 2024
Powered by:
SAFE HANDS HYGIENE INITIATIVE
in association with
RIVERS STATE MINISTRY OF HEALTH AND
IPC/AMS TEAM RIVERS STATE UNIVERSITY TEACHING HOSPITAL
MARKS
THEME:
PROMOTING KNOWLEDGE AND CAPACITY BUILDING OF HEALTH AND CARE WORKERS THROUGH INNOVATIVE AND IMPACTFUL TRAINING AND EDUCATION, ON INFECTION PREVENTION AND CONTROL, INCLUDING HAND HYGIENE.
Monday 6th May 2024
12 noon
Rivers State University Teaching Hospital, IDU hall
Keynote Speaker:
Dr. Adaeze Oreh
Commissioner For Health, Rivers State
Host:
Prof. Chizindu D. Alikor
Chief Medical Director, RSUTH


MONDAY MAY 6, 2024
12 NOON
How to Handwash?
KNOW WHEN TO WASH YOUR HANDS
HAND HYGIENE


CHILDREN'S CLINIC
IN CONJUNCTION WITH BIOMÉRIEUX
MARKS
WORLD ANTIMICROBI
RESISTANCE AWARENESS WE

Diagnostic Microbiology support for AMS

- **Promote diagnostic stewardship**
- **Guidance to laboratory users (handbook/ call)**
- **Quality laboratory services and continuous quality improvement**
- **Pathology reports**
- **AMR Surveillance**
  - Priority pathogens/ patient groups
  - Signal resistance
- **Antibiogram**

Promote **appropriate** and **timely**

- ✔ Test request
- ✔ Specimen collection
- ✔ Specimen processing
- ✔ Reporting

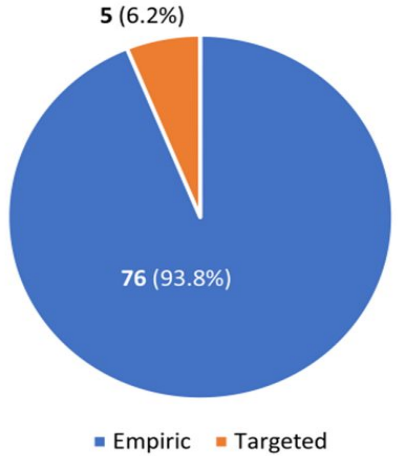
Poor utilization of medical laboratory

Table 2: Patterns of utilization of clinical microbiology laboratory by clinicians for patient management

Variable	Frequency	Percentage (%)
Use of microbiology laboratory for diagnosis of infections (n = 283)		
Always	45	15.9
Very often	141	49.8
Occasionally	35	12.4
Not often	39	13.8
Rarely	18	6.3
Never	5	1.8

- Clinical diagnosis is sufficient (56.1%)
- Patient cannot afford the cost (7.3%)
- Already know potent antibiotics, so there's no need for laboratory test
- No access to Medical Microbiology Laboratory (4.9%)

Before the AMS program, the absence of clear protocols led to an overreliance on subjective clinical judgment when prescribing antibiotics, resulting in inconsistent and often inappropriate use of these vital medications.



Antimicrobial prescription based on biomarkers/evidence of infection.

Oboro et al 2023; Iregbu et al, 2020; Osuagwu et al, 2022
https://msh.org/story/teaching-hospital-in-enugu-takes-lead-in-fighting-antibiotic-resistance

AMS success:

Improved use of Microbiology laboratory services

patients were culture positive. Biomarkers were used in 59.5% of the investigated cases, of which 92.8% were white blood cell (WBC), 3% procalcitonin (PCT), 1.7% PCT in addition to WBC, C-reactive protein (CRP) in combination with WBC in 1.5% and CRP alone in 1%. The frequency of documentation of the reason for antibiotic treatment in case

Overall trends of prophylaxis, empiric and targeted therapies

Ola-Bello *et al*, 2024

Mentorship works

- **RSUTH P2P program**

AMS/IPC Mentorship works

Our collaboration facilitated the establishment of robust governance structures to oversee and guide antimicrobial stewardship efforts and provided extensive training for staff, empowering them to make informed, evidence-based decisions regarding antibiotic prescriptions.

Adebayo Adebisi, *MTaPS Country Project Director in Nigeria*

Setting a New Standard for Care

Within months of implementing the AMS program, the impact was clear. Data from the newly developed antibiotics prescription chart showed significant improvements in AMS practices. The percentage of patients who received antibiotics with samples sent for culture and sensitivity tests increased from 24.5% to 68.5%, while the proportion of patients with documented laboratory requests on their folders rose from 53.6% to 75.8%. These changes have led to better health outcomes, including faster recoveries and fewer complications due to antibiotic resistance, and enhanced patient care within the facility. The new guidelines empowered health care workers to collaborate more effectively, ensuring that every antibiotic prescription was based on evidence and best practices rather than guesswork.

https://msh.org/story/teaching-hospital-in-enugu-takes-lead-in-fighting-antibiotic-resistance/

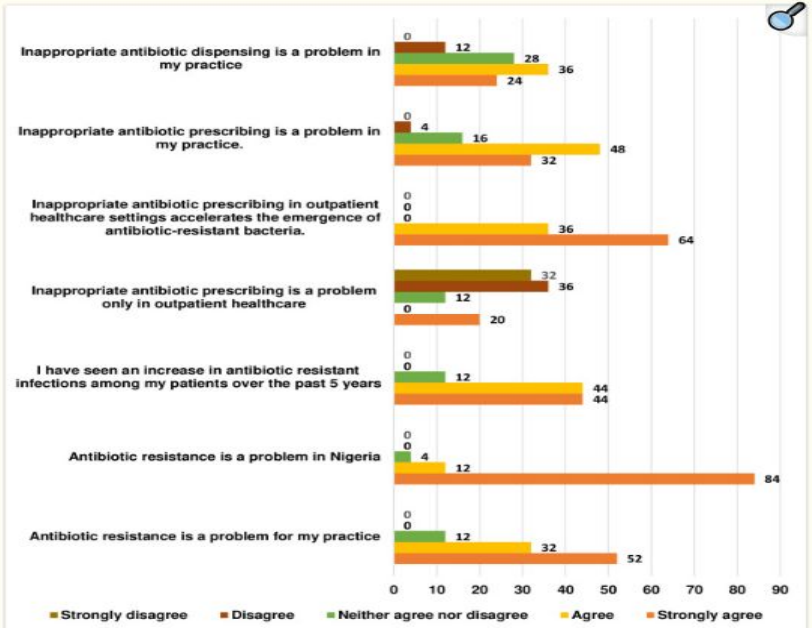
PLOS ONE

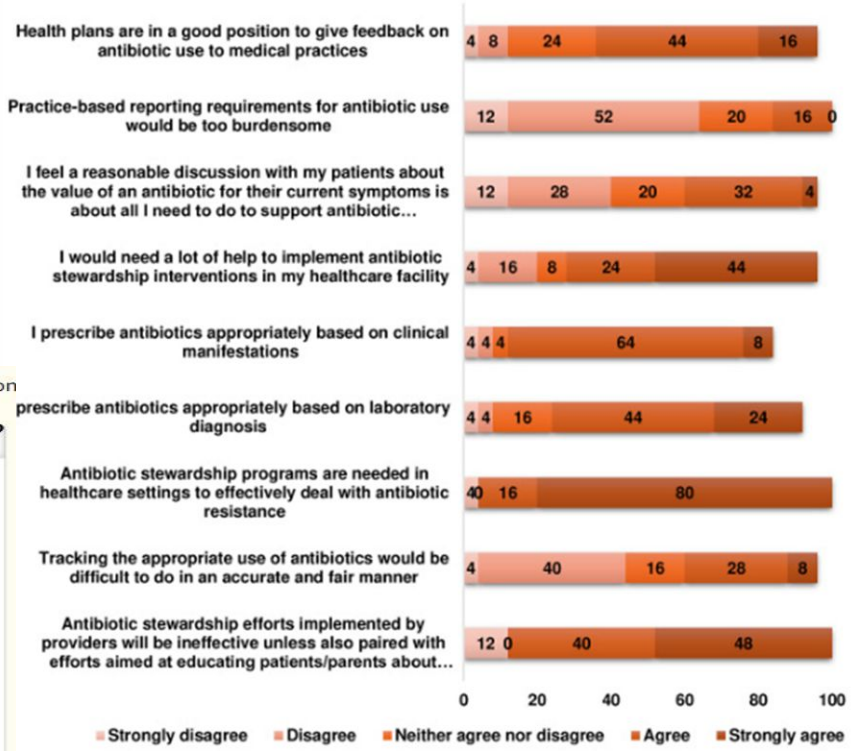
PLoS One. 2024 Jan 19;19(1):e0297472. doi: 10.1371/journal.pone.0297472

Implementation of antimicrobial stewardship programs: A study of prescribers' perspective of facilitators and barriers

Emelda E Chukwu [1], Ifeoma E Idigbe [1], Kazeem A Osuolale [1], Vivian Chuka-Ebene [1,2], Oluwatoyin Awoderu [1], Roser ... [1,3]

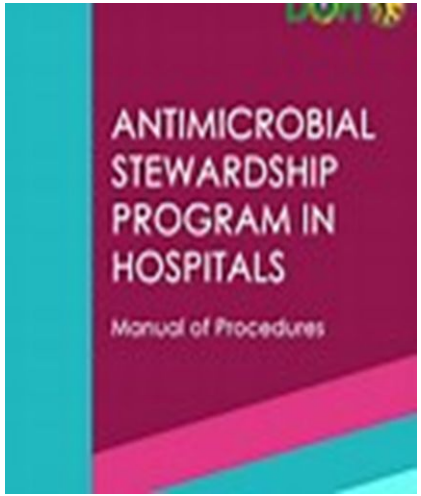
Fig 3. Responses to questions on the perceptions of stewardship approaches/ intervention





My recommendations for AMS in Nigeria

- ✔ Establish institutional antimicrobial stewardship programs
- ✔ Develop antimicrobial policies and guidelines
- ✔ Educate!!! Improve awareness and knowledge
- ✔ Diagnostic stewardship
- ✔ Strengthen Infection Prevention and control programs
- ✔ Legislature that works – including one health considerations



Conclusion

- Let's fight AMR together!!!
- Spread the message, NOT RESISTANCE
- *#goblueforantimicrobialresistance*


thank
you!

Q&A

WORLD AMR AWARENESS WEEK
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Optimizing Infection Prevention Strategies to Combat AMR in Clinical Settings

Dr. Mary Alex-Wele

Senior Lecturer, University of Port Harcourt, Consultant Clinical Microbiologist, Head, Department of Medical Microbiology and Parasitology, Focal Person for the joint IPC/AMS Program, University of Port Harcourt Teaching Hospital, Rivers State, Nigeria

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EDUCATE. ADVOCATE. ACT NOW.

HANDLE ANTIMICROBIALS WITH CARE

OPTIMIZING INFECTION PREVENTION STRATEGIES TO COMBAT ANTIMICROBIAL RESISTANCE IN CLINICAL SETTINGS

DR. MARY A. ALEX-WELE

Consultant Clinical Microbiologist & IPC/AMS Focal Person,

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Senior Lecturer, University of Port Harcourt.

Introduction

- The major cause of morbidity and mortality in low and middle income countries, like Nigeria is communicable diseases.
- These are diseases caused by microorganisms: bacteria, viruses, fungi, parasites and prions. These are organisms that cannot be seen with the naked eyes.
- These diseases are usually treated with antimicrobials. However, the usefulness of these medications continues to be threatened by antimicrobial resistance (AMR); as the landscape of global health continues to evolve, AMR poses a significant threat to all nations, disproportionately affecting LMICs.
- The theme of this year's World Antimicrobial Awareness Week (WAAW) is "Educate. Advocate. Act now.". It is a call to educate stakeholders on AMR, advocate for bold commitments and take concrete actions in response to AMR.

What are Antimicrobials ?

- Agents/medicines that are used to treat infectious diseases
- Antibiotics (treat bacterial infections)
- Antivirals
- Antifungals
- Antiparasitics
- They are the backbone of modern medicine and allow us treat deadly infections successfully as well as make essential healthcare services safer for everyone

Antimicrobial Resistance

- Antimicrobial resistance occurs when microorganisms that cause diseases become unresponsive to antimicrobials as a result of exposure to these agents; driven in large part by the misuse and overuse of antimicrobials.
- The continuous spread of resistant microorganisms and resistance-conferring genes amongst humans, animals, and the environment, make the efficacy of the antimicrobial drugs available to treat the infections, diminish. Thus, previously easy to treat infections become difficult to treat, with far-reaching effects on the health of populations and economies (global, national, local), resulting in high impact on global security.
- The infections thus, persist in the body, with an increased risk of severe illness, death and spread to others.
- Microorganisms that develop resistance are sometimes, referred to as “Super bugs”
- The burden of AMR brings with it, the need for more efforts towards diagnostics and new antibiotics that are difficult to come by.

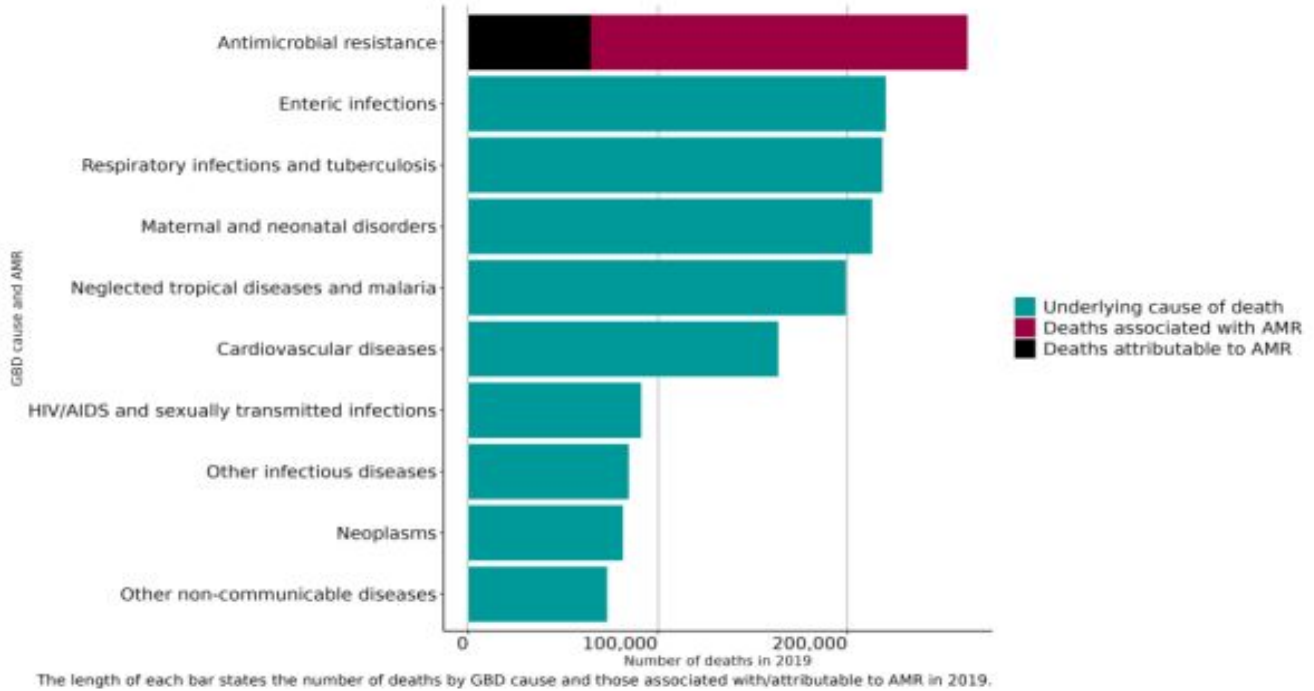


Figure 3: Placing AMR in context with other causes of death in Nigeria in 2019

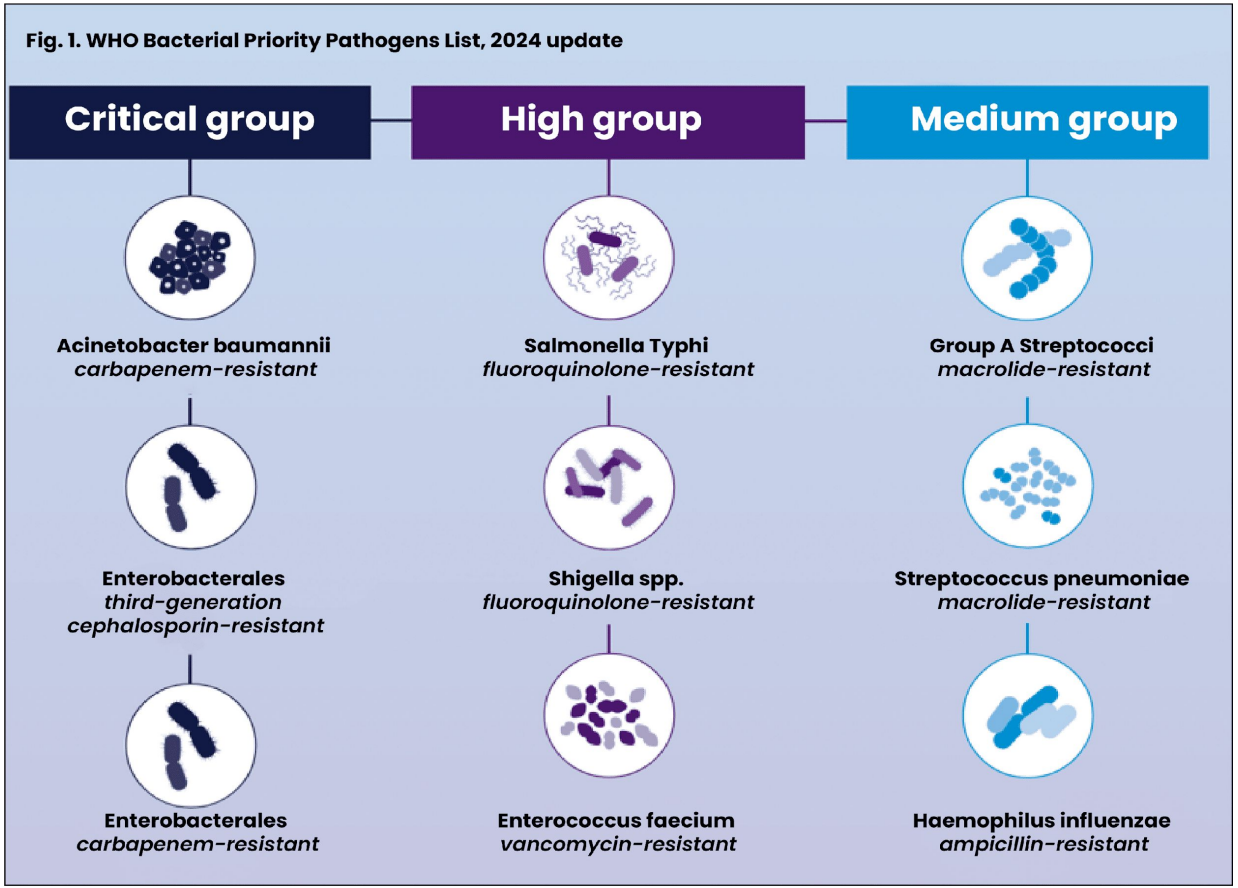
(Source: Global Research on Antimicrobial Resistance (GRAM) project)

AMR Pathogens

- On May 17, the World Health Organization (WHO) released its updated Bacterial Priority Pathogens List (BPPL) 2024, featuring 15 families of antibiotic-resistant bacteria grouped into critical, high, and medium categories for prioritization.

- The list provides guidance on the development of new and necessary treatments to stop the spread of antimicrobial resistance (AMR).

Fig. 1. WHO Bacterial Priority Pathogens List, 2024 update



Why is AMR a Global concern ?

- Antimicrobial resistant organisms are found everywhere; in people, animals, food and the environment- water, soil and air; and can spread within this cycle.
- Death from AMR is reported to be greater than that from HIV/AIDS, TB and Malaria combined
- Advances in medical technologies and interventional procedures (organ transplantation, cancer chemotherapy, implants such as heart valves, open reduction, etc) are increasing, leading to increased healthcare associated infections (HAIs) and usage of more antimicrobials and many of the patients are vulnerable (patients in the ICU, DM, splenectomy, oncology and neonatal patients).
- Without effective antimicrobials for the prevention and treatment of infections, these invasive medical procedures become very risky and the vulnerable population are also at higher risks of contracting infections.

Who can acquire AMR ?

01 Anyone

02 Anywhere

03 At Any Age

Implication of AMR

- Mild infections can no longer be easily treated
- Higher cost of treatment
- HAIs: Longer hospital stay
- More burden on care givers and healthcare facilities
- Higher chances of lifelong disability
- Death (especially in vulnerable patients)

How do we know that someone is infected with a resistant organism? (Diagnosis)

- Clinically: The patient does not get better, even after instituting antimicrobials
- Laboratory: we carry out investigations for susceptibility and resistance to detect these “Super bugs”
- Genomic surveillance

Key interventions and policies to address the rise of AMR

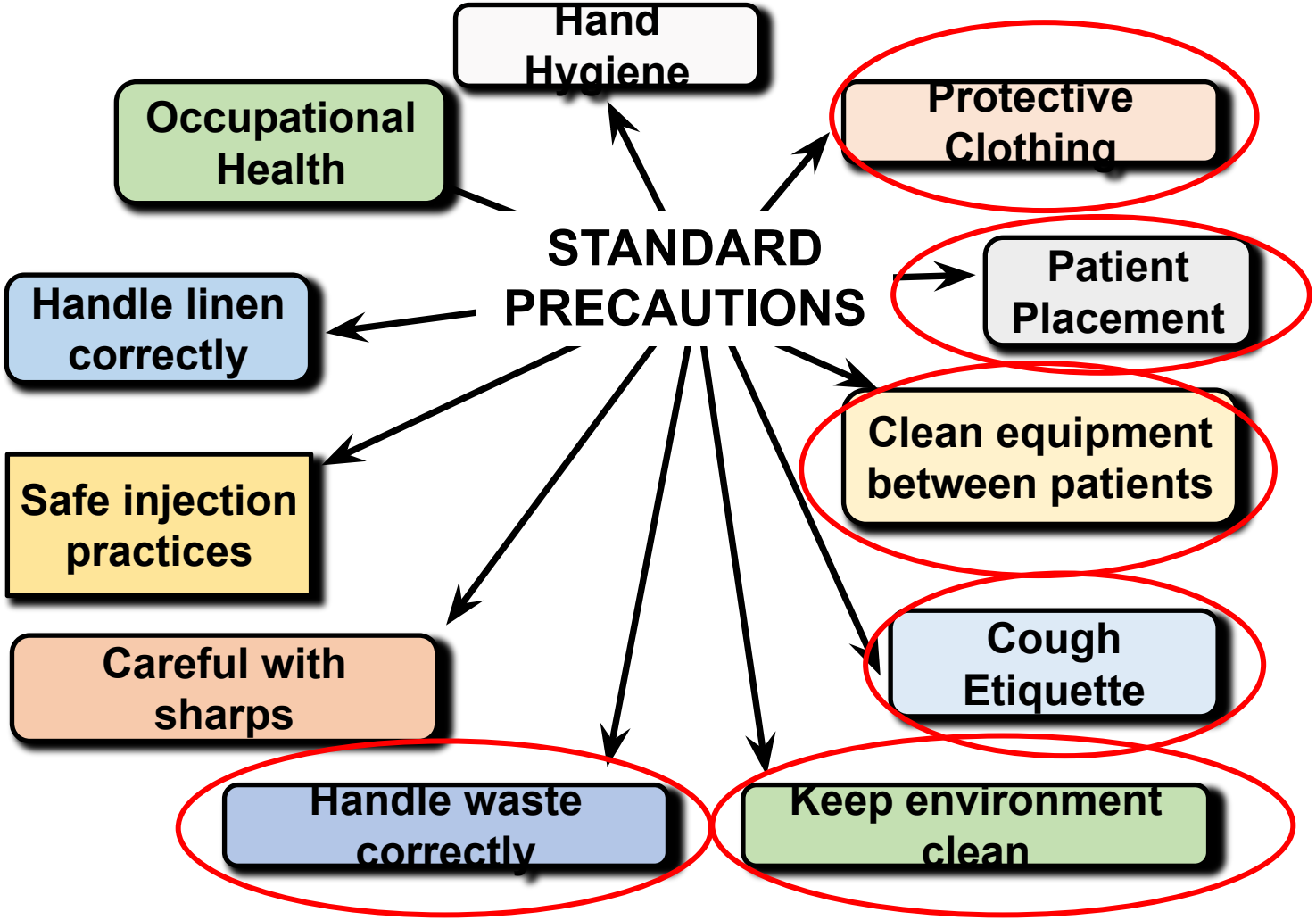
- Strengthening Infection Prevention and Control (IPC)
- Implementing Antimicrobial Stewardship Programs (ASPs)
- Strengthening Surveillance and Monitoring Systems (laboratory strengthening, diagnostic stewardship) and improving clinic-laboratory interface/linkage
- Data on the distribution of pathogens by infectious syndrome from many low-, and lower-middle income countries (LMICs) to estimate AMR burden should be available
- Vaccination
- Research and Development of New Antibiotics and Alternatives
- Regulating Antibiotic Use in Agriculture and Veterinary Sectors
- Public and Professional Education (media; mainstream and social media, informatics)
- Global Collaboration and Policy Development

Infection Prevention Strategies to Combat AMR

- Infection prevention and control (IPC): a practical and evidence-based approach to preventing avoidable infections, including those caused by AMR organisms.
- Preventing infections directly reduces the need for antimicrobial use, which helps slow down the development of resistance.

- Implementing Standard Precautions in healthcare facilities
- Improving access to WaSH (environmental cleaning and disinfection, waste management)
- Disinfection and sterilization of medical equipment
- Triaging and isolation practices: Screen Isolate and Notify (SIN)

- Significantly reduces infection rates, minimizes the spread of resistant pathogens and limits the need for antimicrobial use in clinical setting


Hand Hygiene
Occupational Health
Protective Clothing
STANDARD PRECAUTIONS
Patient Placement
Handle linen correctly
Clean equipment between patients
Safe injection practices
Cough Etiquette
Careful with sharps
Handle waste correctly
Keep environment clean

Hand Hygiene as a Primary Defense: the most effective way to prevent the spread of infections.

My 5 Moments for Hand Hygiene: The Game

https://5mgame.lxp.academy.who.int/

Hand Hygiene Techniques

01	**Hand washing using soap and water: Effective for visibly soiled hands.**
02	**Alcohol-Based Hand Rubs: Effective for routine hand hygiene.**

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How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0

Wet hands with water;

1

Apply enough soap to cover all hand surfaces;

2

Rub hands palm to palm;

3

Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

5

Backs of fingers to opposing palms with fingers interlocked;

6

Rotational rubbing of left thumb clasped in right palm and vice versa;

7

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

Rinse hands with water;

9

Dry hands thoroughly with a single use towel;

10

Use towel to turn off faucet;

11

Your hands are now safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

May 2009

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

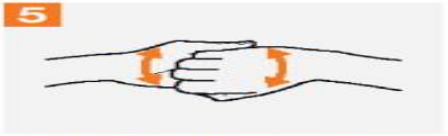
Duration of the entire procedure: 20-30 seconds

Apply a palmful of the product in a cupped hand, covering all surfaces;

Rub hands palm to palm;

Right palm over left dorsum with interlaced fingers and vice versa;

Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;

Rotational rubbing of left thumb clasped in right palm and vice versa;

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

Once dry, your hands are safe.

World Health Organization | Patient Safety | SAVE LIVES Clean Your Hands

How do we keep medicines working ?

- By using antimicrobials correctly
- - Empirically informed selection of first line treatments
- This helps preserve the effectiveness of vital medical treatments.
- Discouraging the use or sharing left over antimicrobials as these can cause resistance: they may not be the correct antibiotic and would not be a full course of treatment.
- Take your prescribed treatment in full even when you start to feel better (complete the course of your treatment).

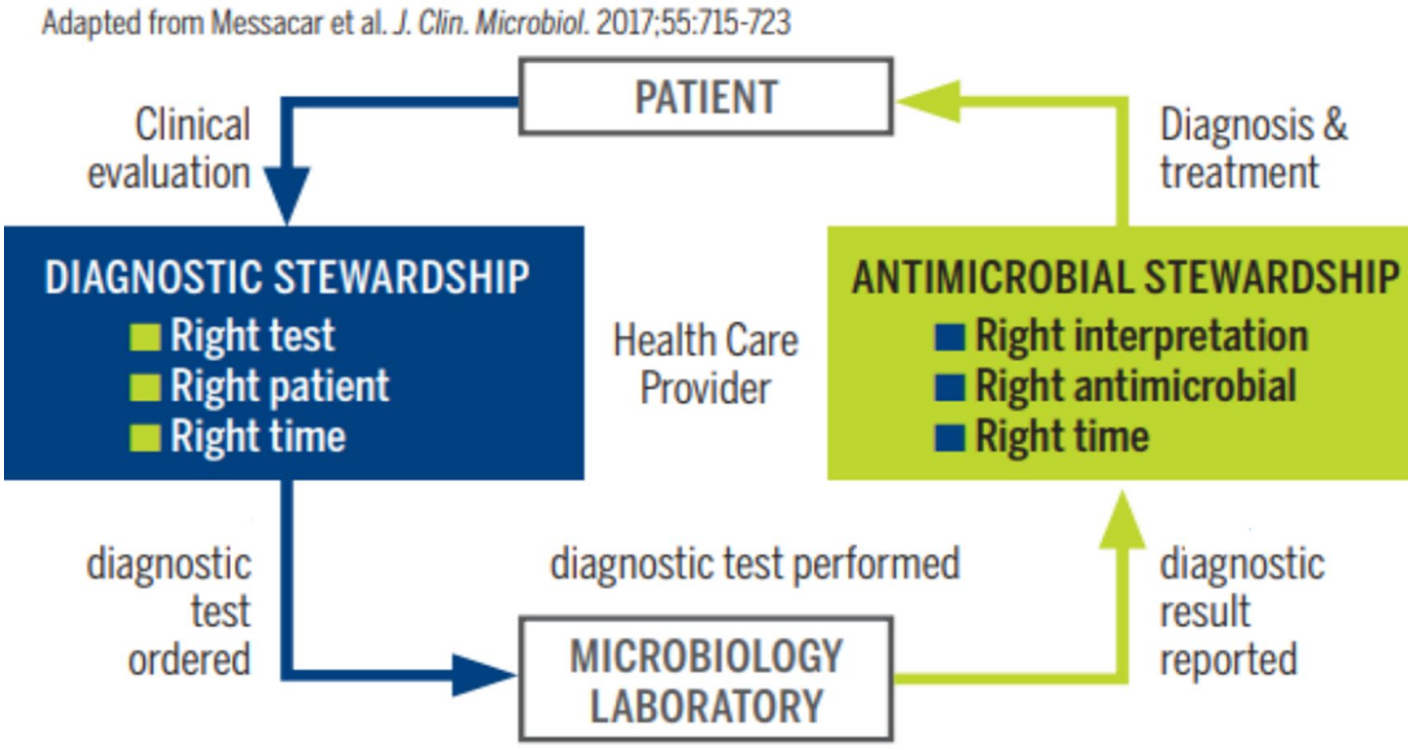
Linkage Between AMS, DS and IPC

- Patient presents
  - DS - Diagnose correctly: use symptoms, vitals, LAB!
  - AMS - Give correct treatment: are antimicrobials indicated? If yes, which? Use guidelines (from antibiogram), prevent antibiotic selection pressure, optimize use
  - IPC - Reduce spread: How can I limit the societal impact of this antimicrobial use?

Source: WHO. Antimicrobial Stewardship: A competency-based approach

Microbiology guides therapy wherever possible
Indications should be evidence based
Narrowest spectrum required
Dosage appropriate to the site and type of infection
Minimise duration of therapy
Ensure monotherapy in most cases

Linkage Between AMS, AMR and DS



Prevention of AMR

- Everybody's business!!
- Educate.
- Advocate.
- Act now.

Prevention of AMR

- Healthcare facility:
- Improve strategies that strengthen infection surveillance and control programs in the healthcare facility
- Encourage prompt diagnosis of infectious diseases with quick TAT
- Institute and implement IPC and WaSH measures
- Reduce HAIs
- Institute Antimicrobial Stewardship
- Contain pharmaceutical wastes

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Prevention of AMR

- Government and One Health:
- Institute policies that regulate and control the consumption and optimal use of antimicrobials in humans
- Control the use of antimicrobials in animals for human consumption, food for animal consumption
- Control environmental drivers of AMR such as pollution from hospital and community waste water
- Waste from pharmaceutical production
- Run-off from agriculture and surface waters that carry resistant genes of interest in global public health
- Improve collaboration between the government and private sector


Danke
感謝你
Gracias
Grazie
Merci
Thanks!
THANK YOU!

References

- Institute for Health Metrics and Evaluation. The burden of antimicrobial resistance (AMR) in Nigeria. Available from: https://www.healthdata.org/sites/default/files/files/Projects/GRAM/Nigeria_0.pdf, accessed 11th November, 2024.
- Nigeria National Action Plan 2.0 on Antimicrobial Resistance: https://onehealthdev.org/wp-content/uploads/2024/10/National-Action-Plan-NAP-on-Antimicrobial-Resistance-Situational-Analysis-and-Key-Recommendations-for-the-Development-of-NAP-2.0.pdf

Let's connect!!

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- Facebook: Mary Micah'Alex-wele

Q&A

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Integrating Oral Health and Antimicrobial Stewardship in Adolescent Care: Strategies for Reducing AMR

Prof. Morenike Oluwatoyin Folayan

Lecturer, Obafemi Awolowo University, Ile-Ife

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Prof. Morenike Oluwatoyin Folayan

Professor of Paediatric Dentistry, College of Health Sciences,
Obafemi Awolowo University.

Integrating Oral Health and Antimicrobial Stewardship in Adolescent Care: Strategies for Reducing AMR

Morenike Folayan

Objective

Introduce you all to a bit of dentistry

Highlight how oral health may be linked to AMR

Highlight how adolescents with oral diseases are prone to AMR

Highlight how dentists can contribute to AMS

Outline

Introduce AMR and adolescence

Highlight oral health diseases adolescents are prone to and why

A brief overview of pathophysiology of dental caries

Discuss AMS by dentists for adolescents

Conclude

Introduction to AMR and Adolescents

What is AMR?

Resistance of microorganisms to antimicrobials they were previously sensitive to.

Why focus on adolescents?

- High use of antimicrobials during puberty (e.g., for acne, infections).
- Vulnerable to poor oral hygiene and associated infections.
- Opportunity to instill lifelong habits.

Oral Diseases that Need Antibiotics

1. Dental Infections

Acute Dentoalveolar Abscess

Periapical Abscess

2. Periodontal Diseases

Aggressive Periodontitis

Necrotizing Periodontal Diseases

Oral Diseases that Need Antibiotics

3. Post-Surgical Prophylaxis and Infections

Post-Extraction Infections

Prophylaxis in At-Risk Patients

4. Osteomyelitis of the Jaw

5. Pericoronitis

Oral Diseases that Need Antibiotics

6. Salivary Gland Infections

7. Oral and Maxillofacial Infections

Facial Cellulitis

Ludwig's Angina

Oral Diseases that Need Antibiotics

8. Candidiasis (Secondary Bacterial Infection)

9. Dental Trauma with Infection Risk

10. Other Oral and Systemic Conditions

Oral Manifestations of Systemic Diseases

Bisphosphonate-Related Osteonecrosis of the Jaw (BRONJ)

The Stages Of Caries Development

Healthy Tooth

Stages 1. Enamel Caries

Stages 2. Dentin Caries

Stages 3. Pulpitis

Stages 4. Periodontitits

Oral Health and AMR Connection

Oral Health as a Key Contributor to AMR

Dental infections are a common reason for antimicrobial prescriptions.

Overuse/misuse of antibiotics in dentistry fuels AMR.

Impact on Adolescents

Untreated oral infections may lead to systemic health issues.

Adolescents frequently exposed to antimicrobials via dental care.

Antimicrobial Stewardship in Oral Health

Definition of Antimicrobial Stewardship (AMS)

Coordinated interventions to optimize antimicrobial use.

Role in Dentistry

Reducing unnecessary prescriptions.

Promoting alternative management strategies for infections.

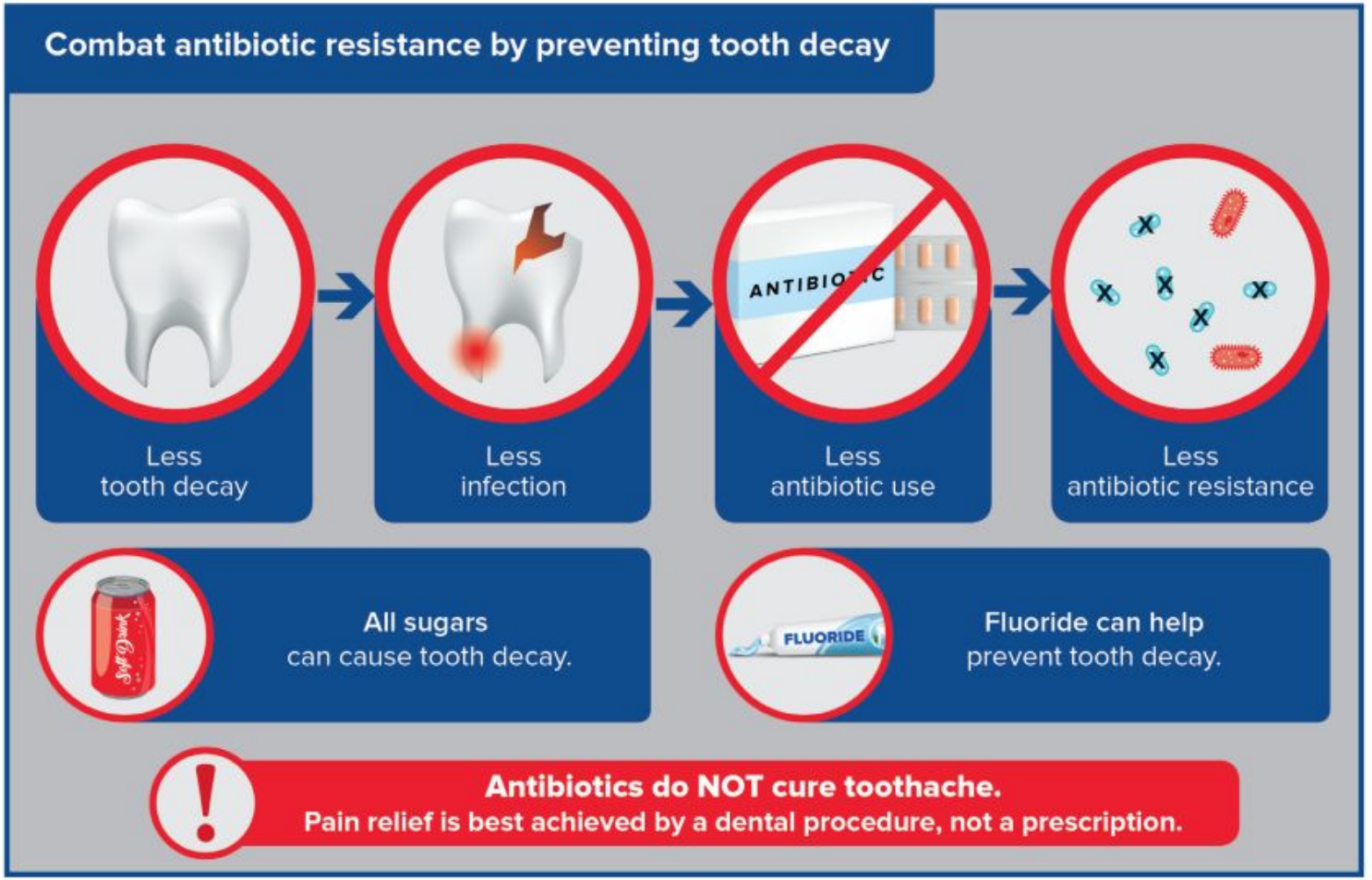

Figure 9. Combat antibiotic resistance by preventing tooth decay. Courtesy of FDI World Dental Federation.

Key Strategies for Integration – 1

Prevention Through Oral Hygiene

Educate adolescents on brushing, flossing, and regular dental visits.

Non-Antibiotic Management

Encourage minimally invasive treatments (e.g., drainage over antibiotics).

Appropriate Prescription Practices

Adhere to guidelines for antibiotic use in dental care.

Key Strategies for Integration – 2

Education and Awareness

Train dental professionals and adolescents on AMR risks.

Monitoring and Feedback

Implement systems for tracking antibiotic use in oral health care

Role of Schools and Community Programs

Incorporating Oral Health in School Curriculums

Teach students about AMR and oral health connection.

Community-Based Initiatives

Free dental check-ups and hygiene workshops.

Peer-Led Campaigns

Adolescents as advocates for antimicrobial stewardship.

Challenges to Integration

Limited awareness of oral health's role in AMR.

Resistance from stakeholders (e.g., parents, providers).

Inconsistent access to dental care for adolescents.

Need for context-specific strategies in LMICs.

Recommendations for Action

Policy Awareness

Include oral health in AMR national action plans.

Capacity Building

Train dental professionals in AMS principles.

Research and Data

Study antibiotic prescription patterns in adolescents in the dental clinic.

Funding

Invest in programs combining oral health and AMR education.

Thank you for listening

You can contact me via:

toyinukpong@yahoo.co.uk

Q&A

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Closing Remarks

Goodness Ogeyi

Partnership & Relationship Coordinator,
The Global Health Network Nigeria

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https://africa.tghn.org/signup/

Register now for tomorrow's AMR webinar! (Nov 19)

From Knowledge to Action: Mobilizing Awareness for a Resilient Future Against AMR

November 19, 2024
9:00 GMT | 10:00 WAT

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AMR Antimicrobial Resistance Knowledge Hub

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Enabling research by sharing knowledge

Register.

Thank you.

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