NIGERIAN INSTITUTE OF MEDICAL RESEARCH

7-9 NOV. 2022

8:00AM-5:00PM DAILY

ICHAIR

International Conference on Health Advances, Innovation & Research

an international gathering of

BIOMEDICAL PROFESSIONALS

Book of Abstracts

The Main Auditorium
Nigerian Institute of Medical Research,
6 Edmund Crescent, Off Murtala Mohammed Way, Yaba, Lagos.

LAGOS, NIGERIA
www.nimr.gov.ng

@NIMRNigeria

A GREATER AFRICA NEEDS A GREATER NIGERIA

NIGERIAN INSTITUTE OF MEDICAL RESEARCH

6 Edmund Crescent, off Muritala Muhammed Way, Yaba Lagos

https://nimr.gov.ng/about-ichair

ICHAIR 2022

The International Conference on Health Advances, Innovation and Research

TRACKS

1. Basic Sciences
2. Clinical Sciences
3. Public Health
4. One Health
5. Biomedical Innovations

Featuring:

10th Distinguished Lecture Series

" Exploring Biochemistry as the Anatomy of Life Sciences for Solving Health Challenges and Building Human Capacity: My Odyessy"

Dr. Bamidele Abiodun Iwalokun

(Bsc, MSc, E-Tech, PhD, IFBA, FRSPH)

Director Central Research Laboratory/Deputy Director of Research

Date: Monday 7th - Wednesday, 9th November 2022

Venue: Main Auditorium, Nigerian Institute of Medical Research, 6 Edmund Crescent, off Muritala Muhammed Way, Yaba Lagos

Host:

Prof. Babatunde Lawal Salako, FAS

Director -General/CEO

Nigerian Institute of Medical Research

GENERAL INFORMATION

Secretariat/Registration desk

- Pre-registered participants should approach the registration desk to **collect** their name tags and conference materials. Name tags must always be worn as it affords participants access to the conference venue and activities.
- Onsite Conference registration will also be possible at the registration desk, but provision of all conference materials will not be guaranteed.
- The Conference starts on Monday 07th November 2022 at 8am and ends on Wednesday 09th November 2022 at 5 pm.
- Certificate of attendance will be provided to all registered participants

Continuing Medical Education

- The Nigerian Institute of Medical Research (NIMR) is accredited by the Medical and Dental Council of Nigeria to provide Continuing Medical Education credits/points.
- Full participation in the conference proceedings will attract a total of 10 MDCN CPD points. For information on how to claim your CPD points, contact the registration desk.

Conference Activities and Facilities

- The conference proceedings include a pre-conference skills-building workshop, plenary sessions with invited expert speakers, oral presentation sessions, satellite sessions, poster and products exhibition sessions.
- The plenary sessions will feature invited expert speakers to give participants authoritative information on topical issues.
- Oral and Poster presentations will cover diverse areas of interest and will take place at the NIMR Auditorium. Only oral presentations for the Young Scientist Contest will take place at the NIMR Biomedical Centre.
- Morning tea breaks and lunch will be provided during the pre-conference workshop. Refreshments will be provided throughout the 3 days of the conference.

Accommodation

- The Central Organizing Committee has obtained discounted accommodation rates from several hotels. If you would like to utilize this, contact the registration desk or Mrs Atte (08029743020) for the list and contact details of the hotels.

Exhibition

- Our Sponsors and Collaborators will be exhibiting their products and services at the conference.

Information for Oral Presentation

- Authors of abstracts accepted for oral presentation are required to prepare a PowerPoint presentation of no more than 10 slides (including the title and the thank you) that summarises the key findings and implications of your project.
- Any extra slide will be automatically truncated at slide #10. The conference PowerPoint master slide earlier sent to corresponding authors should be used.

- You will have 10 minutes to present during the relevant session for your track. There will be 4 or more other presenters during the session. After all the presentations, there will be time for a moderated discussion of all presented work at the session.
- Please note that ALL PowerPoint presentations must be received latest by **12 midnight the day before your presentation**. Send your presentation to **conferenceabstracts@nimr.gov.ng** and **ichair.nigeria@gmail.com**
- Kindly note that the abstract will be published in the conference book of abstracts and possibly in a special supplement edition of NIMR Journal.

Important Contact Phone numbers

- COC Chairs: **Dr. Chika Onwuamah** (09098058007), **Dr. Nneka Onyejepu** (08182939514)
- Scientific Committee: **Dr. Zaidat Musa** (08033430791), **Dr. Fewa** (08088649952)
- Conference Secretary (Expert Speakers): **Miss Ifeoma Idigbe** (08152230180)
- Registration Desk: **Mr. David Johnson** (08023509869)
- Product Exhibition: **Dr. Nneka Onyejepu** (08182939514)
- Payment & TSA: **Ms Comfort Otuokpaikhian** (08066715514)
- Hotel Reservation: **Engr Edomwonyi Osaro** (08054184613); Mrs Bolanle Atte (08029743020)

Health Desk information.

- For first aid and any health emergency, please notify the nearest conference staff member for assistance. A health emergency desk will be located by the registration point. Kindly call **Dr. Paschal Ezeobi (07037167090)** or **Nurse Oladipo (08023084820)**

Conference Programme-at-a-Glance

Monday, 07 Nov 2022	Tuesday, 08 November 2022	Wednesday, 09 November 2022
	Oral Abstracts Session 01 (3A) **NIMR YOUNG SCIENTIST** 08:00 – 08:50 am	**Satellite Sessions** **08:00 – 08:50 am**
	Concurrent Oral Abstracts Session 02/03 (10A) 08:50 – 09:50 am Chairs**: Prof OAT. Ebuehi** [02] / **Prof Osuntoki** [03] Co-Chair: **Dr OB Salu** [02] / **Prof. Taiwo Idowu** [03]	**Concurrent Oral Abstract Sessions 04/05 (12A)** 08:30 – 09:50 am *Chairs:* **Prof. NN Odunukwe** [04] / **Prof. S. Omilabu** [05] *Co-Chairs:* **Dr. Funto Kalejaiye** [04] / **Prof. Ladokun** [05]
Skills-Building Workshops **08:30 – 06:00 pm** **1. Genotyping with TaqMan assays** **2. Sanger Sequencing Workflow demonstration with HIVDR assay** **3. National secondary data sources for the Nigerian HIV/AIDS program** **4. Peer Naija round Table**	**OPENING CEREMONY AND KEYNOTE SPEECH** 10:00 – 12:00 noon *Host:* **Prof Babatunde Lawal Salako,** FAS Director-General/CEO *Chairman of the Conference* **Professor I.F.A. Adewole**, FAS, DSC (HONS) Former Minister of Health University of Ibadan *Keynote Speaker:* **Professor Alani Sulaimon Akanmu**, Professor of Haematology, & Chair, National Task Team on ART (NTTA)	**PLENARY SESSION** 10:00 – 12:00 noon "The health industry in the shadow of COVID-19: focus on one health, programme integration and sustainability." *Chairs:* **Prof Aima Ahonkhai** **Dr Adenike Oluwo** 1. How integrating health programmes can benefit the control of NTDs – **Dr Akpan**, Division for the Control and Elimination of NTDs, FMoH – 20 mins 2. Integrating health programmes can benefit the control of Malaria – **Dr Uhomoibhi**, NMEP – 20 mins 3. NCDC's needs in responding to diseases outbreaks effectively **- Dr Adetifa**, Nigeria Centre for Disease Control, Abuja – 20 mins 4. Integrating health programmes to enhance effectiveness and sustainability – **Dr Boyd**, US Centre for Disease Control and Prevention, Nigeria – 20 mins
	EXHIBITIONS AND NIMR TOURS **12:00 – 01:00 pm**	**EXHIBITIONS AND NIMR TOURS** **12:00 – 01:00 pm**
	LUNCH BREAK **01:00 – 01:50 pm**	**LUNCH BREAK** **01:00 – 01:50 pm**
	SYMPOSIUM 02:00 – 04:00 pm "Repositioning the health sector to the health industry: the challenges, policy gaps and potentials". *Chairs:* **Prof AS Akanmu** **Prof N. Odunukwe** *Speakers:* 1. Viewpoint of a researcher and academician – **Prof. S. Omilabu**, UNILAG – 20 minutes 2. Viewpoint of an Intellectual Property Rights expert – **Dr T. Moody**, WIPO – 20 minutes 3. Viewpoint of the National agency overseeing food, diagnostics, and drugs – **Dr. M. Eimunjeze**, NAFDAC – 20 minutes 4. Viewpoint of a Private Foundation and sponsor of research – **Mrs Zouera Youssoufou**, Aliko Dangote Foundation – 20 minutes	**Concurrent Oral Abstracts Session 06/07 (19)** 02:00 – 03:20 pm Chairs: **Prof. PGC Odeigah** [06] / **Prof. R.A Audu** [07] Co-Chairs: **Dr. Toun Mustapha** [06] / **Dr F. Nwaokorie** [07] **Networking and Continual Education Session** Introduction to the National SPiCE ECHO Programme 03:30 – 4:00 pm *Chair:* **Dr Jay Samuels** *Topic:* Maintaining excellent mental health among healthcare workers *Hosts:* The Public Health Information, Surveillance Solutions, and Systems (PHIS3) project. Sponsored by the US CDC and, NASCP, Federal Ministry of Health, Nigeria
	10th Distinguished Lecture 04:00 – 05:00 pm by **Dr Bamidele Abiodun Iwalokun** Director, Central Research Laboratory & Deputy-Director (Research) *Topic:* **"Exploring Biochemistry as the anatomy of life sciences for solving health challenges and building human capacity: My Odyssey"** *Chair:* **Prof Babatunde Lawal Salako,** FAS Director-General/CEO, NIMR	**Conference Closing Ceremony** 04:00 – 05:30 pm *Chair:* **Prof Babatunde Lawal Salako.** FAS *Featuring Presentation of Awards and Certificates*: Student Conference Scholars 2022 Young Scientist Award Conference Sponsors and Endowments 2022-2023 NIMR Ambassadors of Research Award to the Distinguished Lecturer

Tracks

- Track A: Basic Science
- Track B: Clinical Science
- Track C: Public Health
- Track D: One Health
- Track E: Biomedical Innovation

Guide to Abstract Coding

- **TU:** Tuesday
- **WE:** Wednesday

Track Code

- **BS:** Basic Science
- **CS:** Clinical Science
- **PH:** Public Health
- **OH:** One Health
- **BI:** Biomedical Innovation
- **YS:** Young Scientist Research Contest

Presentation Type

OP: Oral Presentation

Presentation Sequence 1,2,3…

TABLE OF CONTENTS

Oral Abstract Sessions

Young Scientist Contest

Tuesday 08th November

Tuesday 08th November

Oral Presentations

TUBS-OP1 **Olaoluwa Pheabian Akinwale**- Health Research Mentorship in Low and Middle-Income Countries (HERMES): A TDR global practical guide to enhance research mentorship.

TUBS-OP2 **Vincent Duru-** Low frequency of non-falciparum malaria and PFCRT mutations in parasites circulating in nnewi district, southeast Nigeria

TUBS-OP3 **Kordinum Aumona**- Assessment of mitochondrial DNA damage in HIV-positive teenagers in south-west Nigeria

TUBS-OP4 **Ifechukwu Stephanie Ezeilo**- Green-synthesised silver nanoparticles of moringa oleifera leaf extract show antiparasitic activity in stored maize and peanuts**.**

TUBS-OP5 **Opeoluwa Shodipe**- Bacteriological assessment of sliced vended watermelon in Ago-Iwoye metropolis.

TUPH-OP6 **Azuka Patrick Okwuraiwe**- Tracking the epidemiology of Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) in Lagos wastewater canals: Preliminary findings.

TUPH-OP7 **Elizabeth Abodunrin**- Evaluation of Mutation Pattern in a Gene Associated with HbF Expression and Clinical Manifestation among Sickle Cell Disease Patients in Ibadan, South-West, Nigeria.

TUPH-OP8 **Folahanmi Akinsolu-** Community Assessment of School-Based Mass Drug Administration Program for Soil-Transmitted Helminths and Schistosomiasis in Nigeria

TUPH-OP9 **Ojopagogo Temiloluwa**- Socioeconomic risk factors for cervical oncogenic human papillomavirus (HPV) infection among Nigerians

TUPH-OP10 **Idigbe Ifeoma**- Transitioning from adolescence to adulthood: the lived experiences of female adolescents living with HIV in Lagos, Nigeria.

Wednesday 09th November

WECS-OP11 Folahanmi Akinsolu- Willingness to pay for HPV vaccine among women living with HIV in Lagos State, Nigeria.

WEBS-OP12 Ogbu Chinenye Angela- Oncogenic human papillomavirus infection is high among at-risk women in Nigeria.

WECS-OP13 Habeeb Salami Damola- Census of Microbiome and resistome in the gut

WECS-OP14 Azuka Okwuraiwe- Human Papillomavirus genotype survey across North and South Nigeria: Preliminary findings

WECS-OP15 Aliyu Sani Ado- Molecular detection of beta-lactam resistance genes in staphylococcus aureus isolated from wound infection (a case study of wudil general hospital, wudil – Kano, Nigeria).

WEBI-OP16 Chisomebi Duru- Effects of Abelmoschus esculentus Fruit Extract on the Malondialdehyde (MDA) Levels In The Plasma And Liver Of Alloxan-induced Diabetic Male Wistar Rats.

WEBI-OP17 Damilola Bodun- Protein-Ligand Based Pharmacophore Approach against ERK5 Involved in Breast Cancer; In-Silico Study of Flavonoids from Blighia sapida.

WEBI-OP18 Nureni, Ipinloju- Quantum Evaluation and Therapeutic Activity of (E)-N-(4-methoxyphenyl)-2-(4-(3-oxo-3-phenylprop 1-en-1- yl)phenoxy)acetamide and its Modified Derivatives against EGFR and VEGFR-2 in the Treatment of Triple Negative Cancer

WEBI-OP19 Abigael Edeh- Changes in physicochemical properties and enzymes associated with ripening of snake tomato (Trichosanthes Cucumerina L.) fruit

WEBI-OP20 David Ojo- Assessment of air quality in adaranijo market and neighbouring residential buildings in Gbagada, Lagos, Nigeria.

WEPH-OP21 Tochukwu Ifeanyi Onuigbo- Factors Affecting COVID-19 Testing Behaviours among the Population in South Western Nigeria

WEPH-OP22 Susan Holdbrooke- Assessment of Dyslipidemia for the Prevalence of Metabolic Syndrome in Early, Mid and Late Nigerian Adolescents with High Level of Fasting Blood Sugar and with Systolic and Diastolic Hypertension

WEPH-OP23 Momoh Abidemi Esther- Minimal resistance mutations recorded among patients on Dolutegravir (DTG)-containing regimen with unsuppressed viral load in Lagos, Nigeria.

WEPH-OP24 Mabel Uwandu- Antimicrobial analysis of selected soft drinks (kunun, zobo, and brukutu) and their antimicrobial susceptibility pattern in lagos, southwestern, Nigeria

WEPH-OP25 Oluwatoyin Olawunmi Adeyelu- Integrons, plasmid replicon types, metallo-β-lactamase encoding genes and antimicrobial susceptibility profile of Pseudomonas aeruginosa isolated from clinical samples.

WEPH-OP26 Vincent Pam Gyang - Evaluation of a Point-of-Care Circulating Cathodic Antigen (POC-CCA) Urine Assay for the Diagnosis of Schistosoma mansoni in Ogun state.

WEOH-OP27 Folake Latifat Adedokun- Antibiotic Resistance Profile and Plasmid Replicon Types of Non-typhoidal Salmonella Serovars Isolated from Food Animals and Humans in Lagos, Nigeria.

WEOH-OP28 Emelda Chukwu - Investigation of wastewater canals as a means of tracking the epidemiology of bacteria pathogens of public health importance and antimicrobial resistance (AMR) transmission in Lagos State: Preliminary findings**.**

WEOH-OP29 Abraham Ajayi - One Health Assessments of Antimicrobial Resistant Bacteria (ARB) and Antimicrobial Resistance Genes (ARGs) from waste effluents and soil of livestock farms in Lagos state, Nigeria

WEBS-OP30 Oluwabukunmi, Odedeji- Title of abstract: inheritance of purple pigmentation in Carica Papaya Linnaeus

WEBS-OP31 Babatunde Lawal Oriyomi- Molecular detection of flaviviruses in patients presenting with febrile illness in two general hospitals in Lagos State.

WEBS-OP32 Mariam Eluma- Prevalence of aeromonas species in treated and untreated water in parts of plateau state, nigeria

WEPH-OP33 Yusuf Babatunde- Need for inclusion of AMR into pre-service pharmacy curriculum in Nigeria: A comparison of the Bachelor of Pharmacy curriculum at the University of Ilorin with the WHO AMR competency framework

WEBS-OP34 Stephnie Nwaiwu- Antimicrobial Activities and Phytochemical Screening of Five Nigerian Chewing sticks.

TUEDAY, 08TH NOVEMBER

YOUNG SCIENTIST CONTEST

TUYSCS-OP1
Abideen Salako

Prevalence and associated risk factors of myocardial ischaemia in children living with sickle cell disease at a tertiary hospital in Lagos, Nigeria: a comparative cross-sectional study

Correspondence:
salako.abideennaheem@gmail.com

Background: Myocardial Ischaemia (MI) in children living with sickle cell anaemia (SCA) is rarely reported, especially in low- and middle-income countries like Nigeria. The occurrence of MI among children living with this disease could portend untoward outcome on their quality of life and survival. The aim of this study was to determine the prevalence and associated risk factors of MI in children aged six months to 18 years living with SCA during a vaso-occlusive crisis (VOC) compared with those in steady state at the Lagos University Teaching Hospital. **Materials and methods**: This prospective cross-sectional comparative study was conducted to determine the prevalence and associated risk factors of MI among 125 children living with SCA in VOC aged six months to 18years and 125 age and sex-matched controls in steady state. MI was determined using cardiac troponin T (cTnT) and electrocardiography (ECG) assessment. Statistical significance was set at p-value < 0.05 (95% confidence interval).

Results: The prevalence of MI using cTnT alone in children with SCA during VOC and steady state was 42.4% and 23.2%, respectively. Comparatively, using ECG alone, the prevalence of MI in VOC and steady state was 40.8% and 20.8% respectively. The prevalence of MI using both cTnT and ECG in children with SCA in VOC and steady state was 38.4% and 20%, respectively. Increasing age, lower haematocrit, elevated white blood cells and platelet count and were significantly associated with myocardial ischaemia in participants with SCA. Conclusion: The study affirms that MI occurs in children with SCA during VOC and in steady state. The prevalence of MI is higher during VOC using either or combined cTnT and ECG. Older age, low PCV, increased white cell counts and platelet counts are associated risk factors for MI.

TUYSPH-OP2

Chioma Kunle-Ope

Genetic diversity and drug resistance of Mycobacterium tuberculosis complex isolates circulating in Lagos, Nigeria

Correspondence: chiomakunleope@gmail.com

Background: Nigeria ranks sixth among the high tuberculosis (TB) and multi drug resistance (MDR) burden countries. Genotyping of Mycobacterium tuberculosis complex (MTBC) is important to understand regional transmission dynamics. In Lagos State, little information is available on genetic diversity of MTB strains. Objective: The present study aimed to dscribe the drug resistant profile and the main MTBC lineages and genotypes circulating in Lagos State

Methods: Four hundred and ninety MTBC isolates were tested for susceptibility to first and second-line anti-TB drugs using culture method on Lowenstein Jensen (LJ) and genotyped using 24-locus mycobacterial interspersed repetitive unit-variable number tandem DNA repeats (MIRU-VNTR). Data were analyzed using SPSS 26 software.

Results: A total of 246 MTBC strains were identified as drug resistance, including 147 MDR, 82 mono-resistant and 17 poly resistant. Two MDR isolates were extensively drug resistant (XDR) while 20 MDR isolates were pre-extensively drug resistant (pre-XDR).

Among the 438 isolates with MIRU-VNTR results, 411 (93.8%) were classified as lineage 4 (Euro-American) and 27 (6.2%) as lineage 5 (West African 1). The most prevalent circulating lineage was L4/Cameroon genotype, comprising 340 isolates (77.6%), followed by L4/Uganda1 and L5/MAF1 with 30 (6.8%), and 27 (6.2%) isolates respectively. Also, the L4/Cameroon genotype showed the strongest association with drug resistance.

Conclusion: The results showed that L4/Cameroon genotype was the predominant genotype among clinical isolates of MTBC and most of the transmission of TB and drug resistant TB can be attributed to it. Therefore, the results underscore the need for enhanced monitoring of TB drug resistance and epidemiological studies in Lagos State and Nigeria using robust molecular tool such as the whole genome sequencing.

TUYSPH-OP3

Olufemi Samuel Amoo-

Video Observed Therapy Device Improves Probability of Tuberculosis Therapy Adherence in Tuberculosis Patients

Correspondence: fhemy2003@yahoo.com

Background: Video Observed Therapy (VOT) is a method of adherence monitoring where participants transmit digital images of their treatment intake to a central location for review; either synchronously or asynchronously. The use of VOT in some developed countries has been documented to be acceptable, cost-effective, and improve participant commitment to treatment. Considering this, VOT presents an option that can be explored for developing countries like Nigeria with a high TB burden, thereby bringing about a reduction in TB burden and ultimately its elimination.

Methods: The study was a two-arm individually randomized clinical trial conducted by the Nigeria Institute of Medical Research (NIMR) in Lagos, Nigeria. 100 participants were recruited to this study and randomized into either treatment (VOT) or control (DOT). Data was collected through the NimCure mobile app and participant records. We compared treatment outcomes between VOT and DOT and assessed average treatment effects adjusting for gender, location (state) and age.

Results: Taking account of 100% adherence to TB treatment, 97% of VOT participants achieved 100% adherence while 79% of DOT achieved same. More females than males achieved 100% adherence for VOT, while more males achieved 100% adherence in DOT. Most of those who lived out of Lagos achieved 100% adherence to both VOT and DOT. There was a varied distribution across all age groups. The average adherence, if all participants were to use VOT, would be 0.1709 ($z=2.23$, $p=0.026$) more than the average that would be if the participants did not use VOT. Conclusion: VOT through the NimCure smartphone app achieved the adherence objective, therefore recommending that VOT can be used for remote monitoring and management of Tuberculosis participants. VOT, therefore, presents improved adherence to TB treatment. NimCure can therefore be recommended for use in low-income settings. **Keywords:** Tuberculosis, Adherence, Video Observed Therapy.

TUESDAY, 08TH NOVEMBER

ORAL PRESENTATIONS

TUBS-OP1

Olaoluwa Pheabian Akinwale

Health Research Mentorship in Low and Middle-Income CountrieS (HERMES): A

TDR global practical guide to enhance research mentorship

Correspondence:
pheabian@yahoo.co.uk

Background: Research mentorship is critical for health research, but many mentorship resources focus on high-income countries and neglect institutional factors that are important for research mentorship in low- and middle-income countries (LMICs). Institutionalizing research mentorship is nurturing research capacity in organizations to improve research effectiveness and health equity. This guide aims to provide practical advice for institutionalizing research mentorship in diverse settings, especially LMICs. **Methods:** This TDR Global guide was developed in partnership with Armauer Hansen Research Institute, Social Entrepreneurship to Spur Health, and individuals identified through a crowdsourcing open call. This guide was developed based on data from a global crowdsourcing open call, a scoping review of evidence from LMICs, and an adapted Delphi method. This culminated in an in-person meeting in Ethiopia where the draft was refined. All items that received greater than 80% agreement among the consensus panel members were included in this guide called "HEalth Research MEntorship in Low and Middle-Income CountrieS" (HERMES).

Results: The open call solicited 123 practical strategies from 40 LMICs that formed the foundation of the guide. The scoping review identified 77 relevant studies on enhancing research mentorship. The adapted Delphi process ultimately resulted in consensus on three main sections, including working across the mentorship life cycle, leveraging existing research and training resources, and monitoring and evaluating mentorship. Key suggestions to enhance research mentorship include the following: acknowledge power imbalances to enhance equity; consider a holistic approach to career development and mentorship; recognize research mentorship as an institutional responsibility; identify research and training resources available locally and more broadly; give generously to others without expectation of personal benefit.

Conclusion: Some LMIC institutions already have strategies to institutionalize research mentorship which can be scaled up. Research is needed to enhance the uptake of HERMES in diverse resource-constrained settings and optimize research mentorship practices.

TUBS-OP2

Vincent Duru

Low frequency of non-falciparum malaria and PFCRT mutations in parasites circulating in nnewi district, southeast Nigeria.

Correspondence: chiagozieduru@gmail.com

Background: There is paucity of data on the epidemiological status of the non-falciparum species in many countries including Nigeria with high endemic structure. The current study seeks to understand the prevalence of non-falciparum malaria parasite species. Additionally, the genetic diversity and resistance status of the P. falciparum isolates recovered from individuals in the study population were investigated. **Methodology:** Blood samples were collected from all consenting individuals and screened using RT-PCR for Plasmodium species. The genetic diversity of P. falciparum positive samples based on MSP 2 gene was determined by genotyping the MSP-2 and the sizes of the alleles visualized and estimated using QIAxcel. The allelic frequency and expected heterozygosity (He) were determined. High Resolution Melting (HRM)-PCR assay was used to genotype for the Plasmodium

falciparum chloroquine transporter (Pfcrt) polymorphisms.

Results: The RT-PCR diagnostics recorded 107 (53%) positive samples for malaria out of 203 total samples screened for the study. Out of these 203 samples, 106 (52%) were positive for P. falciparum. There were 4 (2%) mixed infections of P. falciparum with P. malariae and P. ovale and 1 (0.5%) P. malariae mono-infection. Also, a total of 22 MSP-2 genotypes were identified among the Pf species. These included 9 3D7 and 13 FC27 allelic families. He value was 0.42 with no polyclonal infections. Results of the Pfcrt HRM analysis showed that 52 (25.6%) samples had the CVMNK (wildtype) haplotype while 55 (27.1%) samples were of CVIET (mutant) haplotype.

Conclusion: This study highlights the low circulation of non-falciparum malaria species in the study population. There was also a low genetic diversity of the P. falciparum positive samples based on MSP-2 gene. The high number of parasite isolates with the mutant haplotype for 3chloroquine resistance calls for heightened surveillance and sensitization in the region to ensure complete withdrawal of Chloroquine from public use though this pressure could be due to amodiaquine use in the study population.

TUBS-OP3

Kordinum Alumona

Assessment of mitochondrial dna damage in HIV-positive teenagers in south-west Nigeria.

Correspondence: kordinum@gmail.com

Background: The use of combination antiretroviral therapy (cART) has changed the paradigm of HIV infection to a manageable condition. It has significantly helped viral suppression, maintaining healthy CD4 count, and reducing the spread of HIV infection globally. However, the long-term exposure to cART calls for concern, especially among teenagers that will need to be sustained, for a prolonged period. HIV infection and exposure to cART may singly or in combination cause mitochondrial DNA damage responses. Exposure to cART can also cause mitochondrial impairment, which in turn leads to physiological dysfunction and cause poor quality of life due to abnormal aging. It is critical to accurately measure the quantity of mitochondrial DNA (mtDNA) molecules, both those with mutations and those that are wild-type, in patients living with human immunodeficiency virus (PLHIV), especially among teenagers. The aim of this study is to assess mitochondrial DNA damage(mtDNA) in HIV-positive teenagers in southwest Nigeria. This is a cross-sectional comparative study, comparing values from HIV-positive teenage patients who are on cART treatment to HIVnegative patients, using established quantitative polymerase chain reaction (qPCR) protocols, A MT-B2M singleplex mtDNA copy number assay, and an MT-ND1/MT-ND4 multiplex mtDNA deletion test, over a variety of DNA concentrations, and mtDNA deletion/copy number levels respectively. The mitochondrial copy number in adolescents who are HIV positive was higher as compared to those who are HIV negative with the mean copy numbers as 87.87±1.62 and 53.18±30.52 respectively. These findings of higher mitochondrial DNA copy number in positive HIV adolescents could be due to the early start-up of antiretroviral therapy and the consciousness on the part of the guardians to administer supplements to their food and multivitamins. Furthermore, more studies should be carried out to establish an assertion on the source of mitochondrial copy number deletions in patients infected with HIV and under antiretroviral therapy.

TUBS-OP4

Ifechukwu Stephanie Ezeilo

Green-synthesised silver nanoparticles of moringa oleifera leaf extract show antiparasitic activity in stored maize and peanuts.

Correspondence:
ifechukwuezeilo55@gmail.com

Background: Food-borne parasitic infections are ongoing problems as new parasites continue to emerge, however, the impact of food-borne parasitic fungi remains largely underestimated. Globally, the incidence of gastrointestinal aspergillosis has increased significantly over the last two decades. This could be because staple grains like maize and peanuts remain common hosts for a range of Aspergillus species. Mitigating the colonization of grains by Aspergillus species is therefore pertinent to curbing food-borne fungal infections. **Objectives:** In this study, we report on the potential use of silver nanoparticles (AgNPs) biosynthesized from Moringa oleifera leaf extract as an antifungal agent against A. parasiticus and A. flavus colonizing maize and peanuts grains. **Methods:** AgNPs were prepared by reducing 1 mM AgNO3 with M. oleifera leaf broth, then purified and concentrated. Characterization of AgNPs was via UV-visible spectroscopy, fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy (SEM). The AgNPs were tested in-vitro against isolated A. parasiticus and A. flavus by the disc diffusion method. They were also incorporated in-vivo into peanuts and maize and stored for 8 weeks. Analogously prepared grains not treated with AgNPs, served as controls.

Results: AgNPs showed peak absorbance (1.8 A) at 450 nm, while SEM analysis revealed them to be spherical, ranging from 50-60 nm. The FTIR imaging revealed C≡N and N=C=S functional groups all found in M. oleifera phytochemicals. Biosynthesized AgNPs induced growth inhibitions in A. parasiticus and A. flavus both in-vitro and in-vivo, Mycelia colour changes suggestive of physiological modifications by the AgNPs and a reduction in the aflatoxin content were also observed in grains treated and stored with AgNPs.

Conclusion: This is the first report on maize and peanut protection from Aspergillus colonisation with AgNPs made from M. oleifera. The reported method can be applied to stored grain preservation, whilst mitigating the spread of food-borne fungal infections.

TUBS-OP5

Opeoluwa Shodipe

Bacteriological assessment of sliced vended watermelon in ago-iwoye metropolis

Correspondence:
opeoluwashodipe94@gmail.com

Background: Bacteriological assessment of vended sliced watermelon was demonstrated with the aim to determine the possible bacteria associated with sliced watermelon sold in Ago-Iwoye metropolis. A total of fifteen (15) sliced watermelon samples were purchased from four (4) distinct vending points at Ago-iwoye. The total aerobic plate count and coliform count were determined by the pour plate method on Nutrient agar and MacConkey agar respectively. The antimicrobial susceptibility of the isolated organisms to antibiotics was carried out using the disc diffusion method. The mean aerobic plat¬e count of the samples was 5.3 x 103 Cfu/g ranging from 2.8 x 103 to 12.0 x 103 Cfu/g. The mean coliform count was 2.9 x 104 Cfu/g ranging from 0.7 x 104 to 9.6 x 104 Cfu/g. A total of thirty (30) bacteria isolates belonging to five (5) genera were isolated, they include Staphylococcus spp. (40%), Klebsiella spp. (26.7%). Escherichia coli (16.7%), Proteus spp. (10%) and Enterobacter spp. (6%). The bacteria isolates showed varying degree of resistance, resistance to ceftazidine (100%) and cloxacillin (100%) was the highest among isolated organisms. The bacteria were

susceptible to some of the antibiotics, susceptibility to ofloxacin (96.7%) and gentamicin (56.7%) was the highest among isolated organisms. The isolated organisms from the vended fruits showed that contamination occurred which may be due to poor hygiene and environmental factors like contaminated air. Therefore adequate training on sanitary practices on both individuals and environment should be encouraged by concerned government officials to reduce the level of contamination in vended fruits.

TUPH-OP6
Azuka Patrick Okwuraiwe

Tracking the epidemiology of Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) in Lagos wastewater canals: Preliminary findings

Correspondence: azukaokwu@yahoo.com

Background: An alternative approach to monitoring SARS-CoV-2 community spread is from environment. Reports have shown positive correlations between wastewater SARS-CoV-2 concentrations and community's COVID-19 burden. This is attributed to feces viral shedding of infected and asymptomatic persons. Canals that are confluent for domestic wastewater are notable tools for wastewater based epidemiology (WBE) of SARS-CoV-2. OBJECTIVES: This study aims to obtain data on SARS-CoV-2 environmental presence and offer a time point of the virus's presence in wastewater canals in Lagos for epidemiological purposes.

Methods: Two major canals were identified per LGA (20 LGAs total) and five samples from different points of selected canals, were collected in 45ml tubes. Samples were pooled, concentrated and analyzed for SARS-CoV-2 RNA, using NIMR-BIOTECH RNA extraction and SCODA-PCR kits, for RNA isolation and real-time amplification/detection respectively, on Quant Studio5. Semi-structured questionnaires were administered to members of communities around the canal to gain insight on risk factors of disease transmission.

Results: Study was carried out between April and July 2022. Of 3054 respondents, 44.8% were female; 38% were exposed to domestic animals in their residences, while 9.8% engaged in open field waste disposal. Majority reported using water closet toilet system (81.8%) and pit latrine (12.5%). A few (3.3%) admitted to defecation in the open. Analysis of 40 samples from the 20 LGAs showed no positive result for SARS-CoV-2 RNA. 29.9% had tested for COVID-19 while 2.5% has previously tested positive for COVID-19. 29.2% had been vaccinated, 21.2% had completed 2 doses while only 9.7% had received booster dose. **Conclusion:** This study highlights importance of WBE as an early warning system for virus surveillance and demonstrated capability to undertake surveillance for infectious pathogens such as SARS-CoV-2. Herd immunity due to vaccination might be responsible for the negative result obtained, as one-fifth of the population are currently fully vaccinated.

TUPH-OP 7
Elizabeth Abodunrin

Evaluation of Mutation Pattern in a Gene Associated with HbF Expression and Clinical Manifestation among Sickle Cell Disease Patients in Ibadan, South-West, Nigeria

Correspondence: toyosiraheem55@gmail.com

Background: Foetal haemoglobin is a major contributor to the phenotypic heterogeneity of Sickle Cell Anaemia (SCA), a major ameliorating factor influencing sickle cell disease severity. Nigeria is ranked as the

highest burden of SCD globally, despite this, HbF estimation is not routinely done. HBS1L-MYB foetal haemoglobin variant (rs66650371) has been associated to the increase in HbF levels in African cohort.

Objectives: The study aimed at assessing the level of HbF in Sickle Cell Anaemia participants in the study area, determine the occurrence of SNP of gene responsible for HbF levels and and investigate the the relationship between the SNP type, HB F level and SCA severity in the participants **Methods:** This is a cross-sectional hospital based study, SCD patients' blood samples were collected from the University College Hospital and Adeoyo State Hospital in Ibadan respectively. Socio-demographic characteristics and clinical Manifestations of the SCD participants were recorded; their Heamoglobin F and haematocrit levels were determined. Amplification, Refraction-Mutation System (ARMS) PCR was performed to determine the 3-bp deletion in the HBS1L-MYB gene.

Results: The mean HbF levels of 260 patients is 4.9% ± 2.4, about 50% of the population had low HbF level. Patients with elevated levels of HbF had increased PCV counts, reduced vaso-occlusive crises in a year, reduced acute chest syndromes and reduced leg ulcer. The allelic frequency of the population with rs66650371 is 3%.

Conclusion: rs66650371 SNP was associated with the elevated level of HbF and reduced disease severity. This study demonstrated the beneficial effect of the rs66650371 SNP in Nigerian SCD patients.

TUPH-OP8

Folahanmi Akinsolu

Community Assessment of School-Based Mass Drug Administration Program for Soil-Transmitted Helminths and Schistosomiasis in Nigeria

Correspondence:
folahanmi.tomiwa@gmail.com

Introduction: STH and schistosomiasis are parasitic infections controlled through mass drug administration (MDA) programs delivered to pre-school and school-age children via school-based delivery platforms. Despite several rounds of MDA, there are challenges in achieving the target coverage and utilization of the intervention. The study aims to identify and assess the barriers and facilitators of the school-based MDA integrated program in Nigeria from the community perspective.

Methods: This study employed a qualitative research design method. Focus group discussions and key informant interviews were conducted to assess the barriers and facilitators of the school-based MDA integrated program among community members. The study participants were enrolled/non-enrolled school-age children, parents, school teachers, community leaders, and town announcers. Voice recorders were used to record all interviews, transcribed verbatim and analyzed through thematic analysis. **Results:** Findings from the study revealed that enrolled/non-enrolled school-age children identified perceived side effects of the drugs, parental instructions, and unpalatable drug characteristics as barriers for the MDA uptake. Although, parents, teachers, and community leaders highlighted a lack of program awareness, unknown effects of the drug, late announcement of the MDA program rollout, and poor incentives for community members. The community members highlighted that integration of the NTD control program in the school curriculum and community outreach and sensitization as part of the control programs facilitators. Also, disease knowledge, drug acceptability, and accessibility vary among the selected endemic LGAs.

Conclusion: The findings from this study provide crucial insights into the community

perspectives on the NTD integrated control program. Both policymakers and implementers need to identify factors that ensure the program success in the Nigerian context. There is a need to maximize the enabling factors identified to improve implementation and ensure sustainability.

TUPH-OP9
Ojopagogo Temiloluwa

Socioeconomic Risk Factors For Cervical Oncogenic Human Papillomavirus (Hpv) Infection Among Nigerians

Correspondence: temiloluwaojopagogo@gmail.com

Background: Cervical cancer is the fourth most common cancer among women, and most cases are linked to human papillomavirus (HPV) infection. Different studies in Nigeria have reported HPV prevalence between 21-45% among women. This study aimed to evaluate social-economic and lifestyle factors associated with the risk of HPV infection.

Methods: Study participants were recruited from different clinics and women's health outreach programmes in Lagos, Imo and Delta states, Nigeria. Self-administered semi-structured questionnaires obtained participants' demographics, attitudes, practices, social habits, and risk factors, including age, educational levels, occupation, marital status, smoking and alcohol consumption. HPV infection status was determined using Sansure real-time PCR kit and BGI PCR-NGS tests. Epi info 7 was used for data analysis, applying chi-squared, fisher exact and Kruskal-Wallis tests as appropriate.

Results: Higher educational status positively correlated with a higher prevalence of HPV. Women with tertiary education ranked first (49.1%, 110/224), followed by secondary (36.6%), Primary (8.4%), and others (5.4%). Younger women (median 34 years; 28-40 years interquartile range; p=0.000) and married women (p=0.026) were more infected. However, religion, and HIV status, were not significantly associated with HPV infection. The odds for women who take alcohol to have an HPV infection was 1.7X (95% CI: 1.2-2.4; p=0.0004), while it was 2.4X (95% CI: 1.3 - 4.4; p=0.002) for women who smoked. However, the impact of frequency and quantity of alcohol taken on HPV infection was not apparent. Condoms were the primary protection used (36.3%), but it was not significantly associated with HPV infection (p>0.05)

Conclusion: Social habits of alcohol, smoking and young age less than 35 were the identified risk factors for cervical oncogenic HPV infection. Efforts at cervical cancer prevention should address these social habits, especially among the younger women.

TUPH-OP10

Ifeoma Idigbe

Transitioning From Adolescence To Adulthood: The Lived Experiences Of Female Adolescents Living With HIV In Lagos, Nigeria

Correspondence: ifeomagenia@yahoo.com

Background: Female Adolescent Living with Human Immunodeficiency, a chronic lifelong disease are challenged by issues of developing relationships, exploring their sexuality, sexual and reproductive health needs and independency as they transit to adult care.

Methods: A qualitative methods and Interpretive phenomenology approach, in-depth interviews were conducted among 12 female adolescents living with HIV who were transitioning from adolescent to adult care in Lagos, Nigeria between October, and November 2021. The interviews were conducted to understand and describe their lived experiences

of having a health condition. Information provided during the interviews were transcribed, coded to provide emerging themes using thematic analysis.

Results: A total of 12 female adolescents were interviewed. Their average age was 17 years old, 75% had attended Secondary School. Four main themes highlighted were: 1) Anxiety i.e., participants remembering that they had HIV initiated negative triggers; 2) Disclosure (i.e., majority of the participants believed that disclosing their status will lead to stigma irrespective of its impact on treatment outcome; 3) Stigma (i.e., most participant had experienced self and societal stigma) and 4) Culture (i.e., participants expressed concern about favoring gender dynamics within our cultural practices).
Conclusion: Our data reveals that Female Adolescents Living with HIV transitioning from paediatric care to adult care faces a barrage of challenges ranging from anxiety, stigmatizations, and disclosure issues.
Keywords: Lived Experience, Female adolescents, transitioning, Pediatric care, Adult HIV care.

WEDNESDAY, 09TH NOVEMBER

WECS-OP11
Folahanmi Akinsolu

Willingness to pay for HPV vaccine among women living with HIV in Lagos State, Nigeria.

Correspondence:
folahanmi.tomiwa@gmail.com

Background: The willingness to pay for HPV vaccination is crucial in the prevention of cervical cancer among women living HIV in Nigeria. Cervical cancer and HIV are closely intertwined, and Nigeria accounts for the second-highest burden of people living with HIV globally. HPV vaccination in Nigeria will require substantial financing due to the high cost of HPV vaccine and the inexistence of structures to support vaccination. This study assessed the willingness to pay for the HPV vaccine among Nigerian women living with HIV.
Methodology: A quantitative, cross-sectional, survey-based study was conducted among 1,371 Nigerian women of childbearing age living with HIV receiving treatment at the Nigerian Institute of Medical Research, Lagos State. Respondents completed questions about HPV-related knowledge and health beliefs, intention to take the HPV vaccine, and willingness to pay HPV vaccine.
Results: The total number of study respondents was 1371. 79.1% of the respondents have not heard of the HPV vaccine. 68.3% of the respondents will not pay for the HPV vaccine, while 55.6% are willing to vaccinate their daughters. However, only 33.2% agreed to pay for their daughter's vaccine. 79.1% of the respondents would allow all females around them to be vaccinated if the HPV vaccine is free. The average WTP was 9.39 USD (3963.95 NGN). Also, 78.7% had poor knowledge of the HPV vaccine. Demand for the HPV vaccine was deemed high (82.4%) and was significantly associated with respondents previously diagnosed with HPV infection.
Conclusion: Results show that a higher percentage of women living with HIV are not willing to pay for the HPV vaccine. Hence, the cost of the HPV vaccine should be reduced, increase HPV knowledge and improve the attitude of people.

WEBS-OP12

Ogbu Chinenye Angela

Oncogenic human papillomavirus infection is high among at-risk women in Nigeria

Correspondence: angelachnn@gmail.com

Background: Globally, cervical cancer is the fourth most common cancer among women and 99% of cases are linked to infection with high-

risk human papillomavirus (hrHPV) strains. HPV infection rate in Nigeria ranges from 21-45%. Lack of awareness, access to vaccines, and barriers to routine screening by women contribute to this high prevalence. We surveyed for HPV infection among women living in three states in southern Nigeria, targeting women with a possible predisposition to HPV infection.

Methods: Study participants were recruited at the anti-retroviral therapy clinic, NIMR Lagos, NGOs outreach activities in Lagos and Owerri, Optimal Cancer Care Centre, Lagos, and Delta State University Teaching hospital. Target women sub-groups were female sex workers (FSWs), women seeking cancer-screening services (WCS), HIV-positive women, pregnant women, and women tested at outreach activities. The medics performed sampling at the healthcare facilities, while NGO outreaches implemented self-sampling with pictorial guides. Sansure real-time PCR and the BGI PCR-NGS assays used detected the 14 high-risk HPV strains. Assays were performed according to the manufacturer's protocol, and Epi info 7 was used for data analysis.

Results: Nine hundred and nineteen (919) women were recruited, 544 (59.2%) from the South-West (Lagos), 250 (27.2%) from the South-East (Imo), and 125 (13.6%) from the South-South (Delta). Six hundred and ninety-six (696/919; 75.7%) women were negative for HPV, while 224 (224/919; 24.4%) were positive for HPV. HPV infection rates for the target populations were 16.0%, 16.5%, 17.4%, 19.2%, and 30.8% for FSWs, WCS, HIV-positive women, pregnant women, and women reached during outreaches, respectively. HPV prevalence was 26% (142/544) in Lagos, 14.8% (37/250) in Imo and 36% (45/125) in pregnant women from Delta.

Conclusion: The igh prevalence of HPV among pregnant women may indicate that more research and intervention are expedient across the geo-political zones to ascertain the national prevalence.

WECS-OP13

Habeeb Salami Damola

Census of Microbiome and resistome in the gut

Correspondence: damolamillz@gmail.com

Background: The human gut contains a densely populated microbial ecosystem, termed the gut microbiota, which harbours antimicrobial resistant genes offers ample opportunities for the horizontal transfer of genetic material, including antibiotic resistance genes (resistomes) between the commensals and opportunistic pathogens. The aim of this topic was to determine the bacterial population present in the gut and their associated antibiotics resistance determinants inherent sick people in Osogbo, Osun state.

Methods: This study was a cross-sectional study. A total of 80 stool samples was obtained from subjects with varying clinical conditions in Osun state. The stool samples were cultured on laboratory media and the isolates identified and multi-drug resistant isolates were screened for antibiotic resistance genes using the polymerase chain reaction.

Results: Gram negative bacilli including Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris and Pseudomonas aeruginosa was isolated in the proportion of 34.5, 24.8, 9.0, and 9.7 respectively. Gram positive cocci such as Staphylococcus aureus and enterococcus was also isolated. Antibiotic resistance genes; CTX-M, OXA, Bla-VIM and aac (3)-ii was detected in the proportion 16.7%, 16.7%, 33.4% and 8.3% respectively.

Conclusion: The high faecal carriage of Extended-spectrum beta lactamase genes associated with Bla-VIM and CTX-M genes in sick people highlights the risk of the

transmission of resistance characteristics between commensals and pathogenic organism in the gut posing a threat to treatment of infections with antibiotic resistant organism.

Keywords*:* Resistomes, microbiota, faecal carriage, antibiotic resistance, microbiome commensals, pathogenic, gut, Extended-spectrum beta lactamase.

WECS-OP14

Azuka Okwuraiwe

Human Papillomavirus genotype survey across North and South Nigeria: Preliminary findings

Correspondence: azukaokwu@yahoo.com

Background: The WHO states that almost all cervical cancer cases (99%) are linked to infection with high-risk human papillomaviruses (HPV), an extremely common virus transmitted through sexual contact. Effective primary (HPV vaccination) and secondary prevention approaches (screening for, and treating precancerous lesions) will prevent most cervical cancer cases. There is a national drive to scaleup HPV testing in Nigeria. In efforts to reduce the cases of cervical cancer, there have been sensitization efforts across health facilities in Nigeria, including cervical tissue sample collection.

Objective: This study attempts to collect data on the genotype-prevalence of clinically relevant high-risk HPV among women in Nigeria.

Methods: The Clinton Health Access Initiative (CHAI) adopted a cross sectional, descriptive study design. Adult women from various health facilities in Lagos, Niger, Taraba and Kaduna states were counseled and screened by obtaining cervical tissue, stirred into PCR cell media, stored at room temperature. They were transported in bulk to the Centre for Human Virology and Genomics (CHVG), at the Nigerian Institute of Medical Research (NIMR), and assayed for HPV presence and genotype, using the Cobas 6800 System by Roche Diagnostics.

Results: A total of 4,423 samples were tested in August, 2022. The age of the women ranged from 18 to 72 years (mean 36.61±8.61). Prevalence of high-risk HPV was 15.1% and the strains of HPV obtained were; HPV16, 1.31%; HPV18, 1.20%; other high risk (OHR)-HPV, 10.46%, HPV16 & OHR-HPV, 0.90%, HPV18 & OHR-HPV, 1.04%, HPV16, 18 & OHR-HPV, 0.11%. HPV negative and invalid results were 77.9% and 7% respectively.

Conclusion: As previously reported, OHR-HPV (at 10.46%) is significantly prevalent and on the rise across the north and south geo-political zones, and not the target of most available vaccines. Policies and interventions geared towards preventing and curtailing the incidence of cervical cancer are eagerly

WECS-OP15

Aliyu Sani Ado- Clinical Sciences

Molecular detection of beta-lactam resistance genes in staphylococcus aureus isolated from wound infection (a case study of wudil general hospital, wudil – kano, nigeria).

Correspondence: aliyujanzaki@gmail.com

Background: Antimicrobial resistance among strains of Staphylococcus aureus and other pathogenic microorganisms was posing a potential challenge in the infection prevention and control of bacterial infection around the globe with β-lactam resistance as the most common.

Methods: In this study the β-lactam resistance genes were examined among isolates of S. aureus recovered from the infected wound of

patient attending Wudil general hospital. A total of 217 wound samples were microbiologically analyzed from September, 2021 to August, 2022 for the isolation and identification of S. aureus and detection of β-lactam resistance genes following district laboratory procedure and molecular techniques.

Results: Results of the study shows the presence of S. aureus in 83 (38.24%) of the samples and 24 (11.06%) are resistance to β-lactam antibiotics used in the study. Moreover, the susceptibility test of the isolates shows that 157(72.35%) are susceptible to Nitrofurantoin, Gentamicin 151(69.58%), Ciprofloxacin 133(61.29%), Ofloxacin 116(53.46), Cotrimozazole 68(31.33%), Augmentin 62(28.57%), Erythromycin 60(27.65%), Ampicillin 52(23.96%), Ceftazidine 43(19.82%) and Cefurozime 28(12.90%). Following the acidometric and iodometric analysis, 11(5.07%) of the isolates are confirmed β-lactamase producers and only 4(1.84%) of the isolates revealed the presence of β-lactamase genes (blaZ, blaI and blaR1). **Conclusion:** This study confirmed the conclusion of many research that β-lactam resistance was not solely depend on the presence of blaZ, blaI and blaR1 genes.

WEBI-OP16
Chisomebi Duru

Effects of Abelmoschus esculentus Fruit Extract on the Malondialdehyde (MDA) Levels In The Plasma And Liver Of Alloxan-induced Diabetic Male Wistar Rats.

Correspondence: chisomduru7@gmail.com

Background: The need to explore alternative remedies such as food supplements phytotherapy has become increasingly important in the management and treatment of Diabetes mellitus (DM) as its prevalence continues to rise alarmingly despite years of intensive research. The aim of this study was to evaluate the effect of okra (Abelmoschus esculentus) extract on the weight, fasting blood glucose (FBG) Malondialdehyde (MDA) levels, of alloxan-induced diabetic male Wistar Rats. **Methods:** A pre- and post-test control experimental study design was implemented. Twenty-eight male albino Wistar rats were used for the experiment and the animals randomly divided into four groups: normal control, normal treated, diabetic control and diabetic treated groups. Diabetes was induced in the diabetic groups by a single intraperitoneal injection of alloxan (150mg/kg body weight). 5% aqueous extract from okra fruit (400mg/kg body weight) was administered to the normal and diabetic treated groups for fourteen days. Weight and FBG levels were determined at baseline, 72hours post-induction, day seven and day fourteen of treatment. The animals were sacrificed, the liver and plasma extracted were assayed for the quantitative analysis of the lipid peroxidation marker, MDA.

Results: Injection of alloxan reveals a significant increase ($p< 0.05$) in the FBG levels of the diabetic groups when compared with those of the normal control rats. These changes were associated with non-significant decreases ($p> 0.05$) in the body weight. Treatment with okra extract generated non-significant decreases in the FBG and MDA levels of the diabetic treated rats, and non-significant increases in the body weight status.

Conclusion: Okra fruit supplementation show promising anti-diabetic effects. However, future study demands an investigation into identifying the active components of the Abelmoschus esculentus plant pre-treated with Indole Acetic Acid (IAA) for anti-diabetic efficacy.

WEBI-OP17
Damilola Bodun

Protein-Ligand Based Pharmacophore Approach against ERK5 Involved in Breast

Cancer; In-Silico Study of Flavonoids from Blighia sapida.

Correspondence: dbodun56@gmail.com

Introduction: Breast cancer is a global public health issue that can be caused by environmental or hereditary factors. There are still a shortage of effective treatments with enhanced efficacy and acceptability against the disease, as many breast cancer drugs have serious side effects. Hence, the inhibitory potential of flavonoids from Blighia sapida against breast cancer target (ERK5) was investigated.

Methods: The interactions of the target protein and its co-crystallized ligand were used to develop a protein-ligand based pharmacophore hypothesis. The idea was applied to the screening of phytochemicals obtained from an online database. Following that, we used structural bioinformatics and theoretical chemistry tools to find new ERK5 inhibitors using molecular docking, molecular mechanics generalized Born surface area (MMGBSA) and pharmacokinetics model in Schrödinger suite, density functional theory analysis (DFT) was also performed using Spartan 10. **Results:** The technique discovered new lead molecules as inhibitors of ERK5 as breast cancer therapy through molecular docking and MM/GBSA calculation with Quercetin, Kaempferol and (+)-Catechin showing higher docking score than the co-cystalized ligand and the standard drug. In the phase-generated Epharmacophore theory, the postulated pharmacophore hypothesis has a hydrogen bond acceptor, hydrogen bond donor, and aromatic ring. Interestingly, all the hits obeyed Lipinski rule of five. The results of the frontier molecular orbitals revealed that the EHOMO values of the hit compounds range from -6.02 to -5.48 eV indicating that all the hit compounds will readily donate electron.

Conclusions: Flavonoids from B. sapida may serve as promising inhibitors of ERK5 for breast cancer management.

WEBI-OP18

Nureni Ipinloju

Quantum Evaluation and Therapeutic Activity of (E)-N-(4-methoxyphenyl)-2-(4-(3-oxo-3-phenylprop 1-en-1-yl)phenoxy)acetamide and its Modified Derivatives against EGFR and VEGFR-2 in the Treatment of Triple Negative Cancer

Correspondence: nureniipinloju@gmail.com

Introduction: Breast cancer (BC) is known to be one of the three most familiar cancers circulating the world and in women . In 2020, 2.3 million women were diagnosed with breast cancer and 685000 deaths were recorded globally. Therefore, making it the world's most prevalent cancer. Triple negative breast cancer (TNBC) accounts for 15% of all breast cancers and 25% of all breast cancer-related deaths. Chemotherapy is one of the effective method of treating breast cancer. However, it is imperative to search for new drugs due to high multidrug resistance and greater toxicity of the existing drugs. This work aimed investigating novel chalcones derivatives for the treatment of Triple negative breast cancer. (E)-N-(4-methoxyphenyl)-2-(4-(3-oxo-3-phenylprop-1-en-1-yl)phenoxy)acetamide and six of its modified derivatives (MOLa - MOLf) were modelled using Spartan 14 software. Density functional theory analysis was performed via Spartan software version 14 using exchange correlation hybrid functional B3LYP and 6-31* basis set. The molecular docking analysis was performed using Maestro interface of Schrodinger software suite 2018. The ADMET properties were evaluated using an online server (http://swissadme.ch/index.php). All the compounds displayed good electronic properties and better intermolecular charge transfer than the standard drug (Vandatenib). Also, all the tested compounds satisfied the ADMET and drug-likeness parameters without single valuation of Lipinski's rule of five. By implementing molecular docking, the tested compounds were

tested against two (2) targets (EGFR and VEGFR-2). The compounds showed varying degree of binding affinities with the target proteins. MOLg showed the highest binding affinity (-5.032Kcal/mol) against EGFR while MOLa showed the highest binding affinity (-9.424 Kcal/mol) against VEGFR-2. This work examined the therapeutic activity of (E)-N-(4-methoxyphenyl)-2-(4-(3-oxo-3-phenylprop-1-en-1- yl)phenoxy)acetamide and its derivatives. The compounds displayed high therapeutic activity against breast cancer than the standard drug (Vandatenib) with MOLa and MOLf showed the most promising leads.

WEBI-OP19

Abigael Edeh

Changes in physicochemical properties and enzymes associated with ripening of snake tomato (Trichosanthes Cucumerina L.) fruit.

Correspondence: abigaeledeh17@gmail.com

Introduction: Changes accompanied ripening of fruits as well as reduction in quality and/or nutritional qualities of fruits are caused by enzymes released during growth and development of the fruits. This study was intended at investigating physicochemical changes and enzymes associated with ripening of three varieties of snake tomato fruit. Three varieties of Snake tomato (T. cucumerina) fruits at different stages of maturation [immature green, mature green, half ripe and fully ripe] was obtained from Ethnobotanical garden of Wesley University Ondo, Nigeria. Three gram of the coat and pulp of snake tomato was homogenized with cold 0.1M sodium phosphate buffer pH 7.0 in a porcelain mortar. After which it was then sieved and centrifuged with a speed of 4000 rpm at 4oC. The supernatant obtained was used for the following enzyme assay; polyphenol oxidase, pectin methylesterase and α-mannosidase, pectin methylesterase, polygalacturonase and cellulase. Firmness, ascorbic acid, moisture, non-reducing sugar, total chlorophyll and colour parameter L* value were decreased as ripening progressed while total soluble solid, carotenoids, total sugar, reducing sugar, and colour parameter a* and b* values increased as the fruits ripened. Activities of polyphenol oxidase, pectin methylesterase and α-mannosidase were maxima at half ripe stage in coat and pulp while cellulase and polygalacturonase activities were maxima at fully ripe stage in light green, light green with white stripe and dark green with white stripe varieties. Steady increased activities of pectin methylesterase, polygalacturonase and ellulase during fruit ripening correlate with decrease in firmness of the three snake tomato varieties. This establishes the roles the enzymes play on the loss of firmness (softening) of three varieties of snake tomato fruits in the course of ripening.

WEPH-OP20

David Ojo

Assessment of Air Quality In Adaranijo Market And Neighbouring Residential Buildings In Gbagada, Lagos, Nigeria.

Correspondence: davidomotola0@gmail.com

Background: Air quality in major cities of developing countries is deteriorating with increase in uncontrolled traffic growth and urban sprawl. This study was carried out to monitor the ambient air quality of five areas (a market, three nearby residential buildings and the control building some streets away). This research provides a pertinent supply of information to ambient air quality studies and will be helpful in policy and decision making. **Methods:** Three sample locations in each of the selected sites were assessed mainly for Particulate Matter (PM2.5 AND PM10) along with other

parameters like Hydrogen Sulphide (H2S), Carbon Monoxide (CO) at 7am and 12 noon; by using handheld testers which were calibrated properly before use for quality assurance. Data obtained were subjected to the following statistical tools: Mean, Standard Deviation and Two-way analysis of variance.

Result: Result across the five sites showed higher values recorded at 7am compared to values recorded at noon especially for Particulate Matter (PM2.5 and PM10). When compared to the regulatory limits of various organizations (World Health Organization, National Ambient Air Quality Standard, etc.), all the sampled areas showed exceeded values for PM2.5 (27.33-58.67ug/m3) and PM10 (53.67-78.67ug/m3) against the regulatory limits of 25ug/m3 and 50ug/m3 respectively. Buildings 2 (10.33 and11.00ppm) and 3 (20.33ppm) showed exceeded values for CO as against the standard 9ppm on an 8-hour exposure. While H2S maintained values below the regulatory limits of 10ppm and 10% respectively. **Conclusion:** There are dangers posed by poor ambient air we are exposed to on daily basis especially in places with huge human activities and as such, public awareness is pertinent. The evidence therefore suggests that; with the introduction of the monitoring of ambient air parameters and environmental- friendly lifestyle would be an accompanied reduction in air pollution related health conditions.

WEPH-OP21

Tochukwu Ifeanyi Onuigbo

Factors Affecting COVID-19 Testing Behaviours Among the Population in South Western Nigeria

Correspondence:
onuigbotochukwuifeanyi@gmail.com

Background: In order to ensure the successful management of COVID-19, compliance of individuals to stipulated guidelines for prevention and control is greatly determined by their knowledge, attitudes and practices. The effectiveness of mass and rapid testing depends not only on how the tests are conducted, but the willingness of citizens to be tested, among other factors.

Objective: this study assess the factors affecting testing behaviours amongst citizens of Ondo and Lagos States.

Methods: A cross-sectional study involving 704 individuals who were considered eligible for COVID-19 testing in 4 local governments each in Lagos (307) and Ondo (397) states in Nigeria, was conducted from April-June 2021. Respondents were selected using simple random sampling. A close-ended questionnaire was administered using a digital survey platform known as SurveyCTO. Data were analyzed using R 4.1.0.

Results: In Lagos state, 52.4% were females, 47.2% were males while in Ondo, 55.2% were females, 44.6% were male. Chi-square tests of association conducted revealed that socio demographic factors significantly associated with testing patterns was education level in Lagos, and none in Ondo. Testing behavior associated with testing patterns included; awareness of nearby COVID-19 testing centers, internet access, access to technology devices and number of devices one has access to and having another member of the family testing positive. Further, knowledge of preexisting conditions, knowledge of COVID-19 symptoms, and knowing where to go when having symptoms were significantly associated with testing and willingness to test at 5% significance level.

Conclusion: Efforts should be put in improving knowledge and creating awareness about the symptoms and risk factors by necessary health information bodies in order to mitigate the factors that affect testing behaviours.

WEPH-OP22

Susan Holbrooke

Assessment of Dyslipidemia for the Prevalence of Metabolic Syndrome in Early, Mid and Late Nigerian Adolescents with High Level of Fasting Blood Sugar and with Systolic and Diastolic Hypertension

Correspondence: shobrooke@yahoo.co.uk

Introduction: Dyslipidaemia, a factor of metabolic syndrome (MS), is an important risk factor for cardiovascular diseases, accounting for high mortality annually and global disabilities. The objective was to determine the prevalence of dyslipidemia and its associated risk factors among adolescents in Lagos, Nigeria.

Methods: This study, conducted between October 2019 and March 2020 was a school-based cross-sectional descriptive study that assessed adolescents living in urban/semi-urban communities of Lagos state, Nigeria. Multi-stage sampling method was used to recruit 650 registered secondary school students. Five milliliters of the fasting venous blood sample was collected for fasting blood sugar (FBS) and lipid profile analysis. Anthropometric, blood pressure, and biochemical variables were assessed. MS and dyslipidaemia were defined using two different diagnostic criteria. Data were analyzed using NCSS version 21 (Utah, USA). Relevant statistical analyses were performed. P-value <0.05 was considered as statistically significant. **Results:** Means (±sd) of age, BMI-for-age, systolic and diastolic BP, energy intake, Waist-hip ratio (WHR) of study participants were 14.7 (2.1) years, -0.48 (1.3), 108.3 (12.4) mm Hg, 66.2 (9.6) mmHg, 2056.5 (883.7) cal. and 0.84 (0.05) respectively. Prevalence of dyslipidemia among participants was 8.0%. In all, 70.5%, 49.7%, 85.9% and 24.7% of subjects had hypertriglyceridemia, hypercholesterolemia, high level of low-density lipoprotein (LDL-C), and low level of high-density lipoprotein (HDL-C) respectively. Prevalence of dyslipidemia was higher in females, in early adolescents, in healthy BMI-for-age and among those with low fasting blood glucose. Of the 73 with diabetic FBS, only 2 (2.7%) had dyslipidaemia and of the 35 with elevated systolic and diastolic blood pressure, 3 (8.6%) had dyslipidaemia, both indicating metabolic syndrome

Conclusion: Although high prevalence of dyslipidaemia was found among the adolescents, there was relatively low prevalence of metabolic syndrome. A nation-wide screening for dyslipidemia and metabolic syndrome among adolescents is needed for early identification of the risk factors.

WEPH-OP23

Momoh Abidemi Esther

Minimal resistance mutations recorded among patients on Dolutegravir (DTG)-containing regimen with unsuppressed viral load in Lagos, Nigeria

Correspondence: momohesther25@gmail.com

Backgrounds: Combination antiretroviral therapy (cART) has reduced the burden of HIV globally, ensuring high-quality of life for people living with HIV. However, rising drug resistance HIV is a major concern, especially in the sub-Saharan Africa. Integrase strand transfer inhibitor (INSTI), with a high barrier to drug-resistance, is currently recommended and many HIV-positive patients in Nigeria have been transited to INSTI-based regimen. This study evaluated INSTI resistance among patients on dolutegravir (DTG) for over six months.

Methods: HIV-positive patients on DTG with viral load (VL) above 1000 were recruited at the Antiretroviral therapy clinics in NIMR and LUTH. Samples were tested at the Center for

Human Virology and Genomics, NIMR. RNAs were extracted using the Qiagen viral RNA kit, and sequenced using Thermofisher drug resistance assay covering the protease, reverse transcriptase, and the integrase genomic regions. HIV drug resistant profiles were determined with Stanford HIVdb.

Results: Samples were collected from 65 participants. 44 and 51 samples had the protease/reverse transcriptase (PRRT) and INSTI regions successfully sequenced, respectively. 34 samples had the PRRT and INSTI sequenced concomitantly. Four (4/51, 7.8%) participants were resistant to all INSTI, while 93% were susceptible to DTG despite their rising VL. Of the four INSTI-resistant samples, two had PRRT sequenced. One had DRV/r as the only susceptible protease inhibitor (PI), while the other was susceptible to all PIs. These two were further resistant to the zidovudine, abacavir and tenofovir. The INSTI-resistant virus had mutations in the major (T66A[1],E138K[1],G118R[4]) and accessory (H51Y[1],G163K[1]) regions. Low level resistance to raltegravir alone occurred with accessory mutations (T97A[1],E157Q[3],G163K[1]).

Conclusion: Minimal genotypic resistance was recorded among this cohort, necessitating further studies to elucidate causes of the virologic failure. The little treatment options available to those resistant to INSTIs is a concern, suggesting continual surveillance.

WEPH-OP24

Mabel Uwandu

Antimicrobial Analysis Of Selected Soft Drinks (Kunun, Zobo, And Brukutu) And Their Antimicrobial Susceptibility Pattern In Lagos, Southwestern, Nigeria.

Correspondence: uwandumabel@yahoo.com

Background: Current food safety challenges have risen over several years and require strategic efforts to control. In Nigeria control is lacking over hawked foods, because vendors lack adequate knowledge of food processing/handling practices, leading to high risk of chemical and microbial contamination. Sales and consumption of this locally made beverage is high; hawked in motor parks, school premises, market places.

Methods: Hawked Burukutu, Kunun and Zobo drinks samples were collected by purchasing randomly from five different locations along Ojo LGA. Samples were stored at refrigeration temperature prior to culturing; serial diluted with distilled water; bacterial enumeration and isolation using Nutrient Agar medium. Total bacteria count was obtained by aerobic incubation at 37℃ for 24 hours. Characterization and identification of bacterial and fungal isolates followed, identified on basis of their morphology and biochemical characteristics. Organisms were subsequently characterized according to taxonomic scheme-Bergey's manual.

Results: Total bacterial count ranged from 1.3×105 to 6.2×105 cfu/ml. Total fungal count ranged from 1.9×105 to 7.4×105Cfu/ml. pH values ranged from 1.40 to 6.40. Prevalence of bacterial isolates found present in screened soft drink samples was S. aureus (26%), Streptococcus spp. (21%), E. coli (19%), Bacillus subtilis (18%) and Proteus spp. (7%). Isolated fungi were Candida spp. (42%), Aspergillus flavus (35%), A. niger (7%) and Rhizopus spp (16%). Antimicrobial susceptibility was carried subsequently and each result were observed. Staphylococcus aureus exhibited a very high sensitivity to Ampiclox with a percentage total of 90%, Bacillus spp., however, was observed to exhibit a 100% sensitivity to Ciprofloxacin as opposed to Staphylococcus aureus.

Conclusion: Microbial content of kunu and Zobo drinks was higher and are contaminated with microorganisms which are potentially pathogenic to humans. There is therefore need to maintain adequate hygienic conditions during processing and preparation of these beverages, to eliminate microbial contaminants and improve quality of final product.

WEPH-OP25

Oluwatoyin Olawunmi Adeyelu

Integrons, plasmid replicon types, metallo-β-lactamase encoding genes and antimicrobial susceptibility profile of Pseudomonas aeruginosa isolated from clinical samples

Correspondence:
ajayiabraham2013@gmail.com

Introduction: Antibiotic resistant bacteria with critical priority such as Pseudomonas aeruginosa pose substantial public health threat. Mobile genetic elements (MGEs) and other determinants are known to facilitate horizontal gene transfer that promotes the spread of resistance. This study was aimed at investigating the occurrence of various classes of integrons, metallo-β-lactamase encoding genes and plasmid replicon types of P. aeruginosa.

Methods: A total of 38 P. aeruginosa strains isolated from clinical samples were investigated in this study. Antimicrobial susceptibility testing was done by the Kirby-Bauer disk diffusion method. Singleplex and multiplex polymerase chain reaction (PCR) assays were used in the detection of metallo-β-lactamase encoding genes (blaNDM-A, blaNDM-B, blaVIM, blaOXA-48, blaOXA-58, and blaIMP), integrons (class 1, 2 and 3) and plasmid replicon typing.
Results: All 38 (100%) P. aeruginosa displayed pan resistance to Ceftlozane/tazobactam and Polymyxin. Among the classes of antibiotics tested, 33%, 27%, 24%, 11% and 5% were resistant to fluoroquinolones, βlactams, lipopeptides, aminoglycosides, and carbapenems respectively. Seventeen (44.74%) of the 38 P. aeruginosa isolates possessed plasmids with estimated sizes ranging from 14.9kb to 17.4kb. Some harbored single plasmid, while multiple plasmids were detected in 11 of the isolates. All of the isolates harboring plasmids possessed at least one replicon type among FIA, FIB, W, and FREP that were detected. Plasmid replicon type FIA, FIB, FREPB and W were detected in 11/17(64.7%), 6/17(35.3%), 5/17(29.4%) and 5/17(29.4%) respectively. intI1 gene was detected in 19 (50%) of the isolates while only 2(5.3%) of them were positive for int2 gene. blaNDM-A, blaNDM-B, and blaVIM genes were detected in 14(35.9%), 4 (10.3%), and 5 (12.8%) of the P. aeruginosa isolates.

Conclusion: MGEs and metallo-β-lactamase encoding genes detected in P. aeruginosa with concomitant antibiotic resistance reported, underscores the grave danger of the continuous dissemination of this pathogen.

WEPH-OP26

Vincent Pam Gyang

Evaluation of a Point-of-Care Circulating Cathodic Antigen (POC-CCA) Urine Assay for the Diagnosis of Schistosoma Mansoni in Ogun state.

Correspondence: gyangvince@yahoo.com

Background: Schistosomiasis is the second major parasitic disease, after malaria, affecting tropical and subtropical regions, with sub-Saharan Africa accounting for over 90% of the cases. The Kato-Katz technique (KK), which is the most common diagnosis method and recommended by World Health Organization (WHO) for mapping and routine surveillance of Schistosoma mansoni, lacks sensitivity particularly in areas of low endemicity and low intensity of infection. Consequently, infection

prevalence is often seriously under-estimated due to missed diagnosis. We evaluated a commercial point-of-care circulating cathodic antigen (POC-CCA) test for assessing the infection prevalence in areas at risk.

Methods: The study was done in three communities with an overall total of 245 children providing urine and stool samples. About 200 ml of fresh, early morning urine was collected and screened for S. mansoni circulating cathodic antigen using Schisto POC-CCA urine kit (Rapid Medical Diagnostics; Pretoria, South Africa). Urine pellets were also prepared and gDNA was extracted using Nigerian Institute of Medical Research (NIMR) Biotech DNA Extraction kit. The gDNA was then subjected to PCR amplification of a fragment of 110 bp from a highly repeated 121basepair sequence of S. mansoni. About 5g of fresh, early-morning stool was also collected, processed using Kato-Katz method and examined under the microscope for presence and quantification of S. mansoni eggs.

Results: The overall prevalence in the study with regards to diagnosis method showed 9.4% (Kato-Katz), 19.2% (POC-CCA) and 24.5% (PCR) respectively. Comparing the overall POC-CCA test with S. mansoni PCR results, the sensitivity and specificity were 78% and 94% respectively, while the positive predictive value (PPV) of this test was 80% and the negative predictive value (NPV) 93%. Comparing Kato-Katz with S. mansoni PCR, the sensitivity and specificity were 38% and 80% respectively. **Conclusions:** Urine POC-CCA test showed higher sensitivity and specificity than Kato-Katz and could be considered as a possible replacement.

WEOH-OP27

Folake Latifat Adedokun

Antibiotic Resistance Profile and Plasmid Replicon Types of Non-typhoidal Salmonella Serovars Isolated from Food Animals and Humans in Lagos, Nigeria

Correspondence:
ajayiabraham2013@gmail.com

Background: Multidrug resistance and emerging invasiveness of non-typhoidal Salmonella (NTS) serovars have in recent times brought to the fore the public health risk associated with salmonellosis. Consequently the World Health Organisation (WHO) has classified Salmonella species as high priority pathogens in terms of antibiotic resistance. This study was aimed at profiling NTS serovars isolated from food animals and humans for their susceptibility to antibiotics and typing of plasmids that mediate resistance.

Methods: The study profiled 47 NTS serovars for their resistance to antibiotics using the disk diffusion method according to clinical and laboratory standard institute (CLSI). Singleplex and multiplex polymerase chain reaction (PCR) assays were used for the detection of plasmid replicon types. Results: High rate of resistance were found for amoxicillin/clavulanic acid (40/47; 85.1%), cefuroxime (38/47; 80.9%) and ceftazidime (30/47; 63.8%). Thirty one (65.9%) and 33(70.2%) showed intermediate resistance to ofloxacin and ciprofloxacin respectively. Plasmids of sizes ranging from 14.3kb to 16.7kb were detected in 24(51.1%) of Salmonella isolates with some serovars harbouring multiple plasmids to the tune of 5. FIA, FIB, Frep, and W plasmid replicon types were detected in 11, 4, 2 and 1 of the Salmonella isolates respectively. Three of the isolates harboured both FIA and FIB replicon types. Nine of the Salmonella isolates possessed plasmids that could not be typed.

Conclusion: The high rate of resistance to β-lactams and intermediate resistance to floroquinolones observed in Salmonella serovars harbouring different plasmid replicon types in this study highlights the potential public health

threat and the need for prudent use of antibiotics in human and veterinary medicine.

Keywords: Antibiotic resistances, Plasmid, Replicon typing, Salmonella.

WEOH-OP28

Emelda Chukwu

Investigation of wastewater canals as a means of tracking the epidemiology of bacteria pathogens of public health importance and antimicrobial resistance (AMR) transmission in Lagos State: Preliminary findings

Correspondence: gyangvince@yahoo.com

Background: Wastewater-based epidemiology (WBE), already adopted for the surveillance of health conditions of communities, shows potential for the monitoring of infectious pathogens including Vibro cholerae and antimicrobial resistance (AMR) transmission. This study evaluates the prevalence of clinically relevant bacteria pathogens and provide a single time point Antimicrobial Resistance profiles of pathogens in wastewater canals in Lagos State for epidemiological purposes.

Methods: This is a cross-sectional survey of wastewater canals in Lagos State for detection of bacteria pathogens of public health importance. Descriptive epidemiological survey was done using questionnaires to assess exposure pathways.

Results: Three thousand and fifty-four (3054) questionnaires were administered to 1215 (39.8%) females and 1658 (54.3%) males in communities around 40 canals in 20 LGAs. Although majority (81.8%) reported using water closet toilet system and pit latrine (12.5), a few of them admitted to open defaecation [101 (3.3%)] while 299 (9.8%) engaged in open field waste disposal. There was moderate knowledge of antibiotics (70.1%), though 37.7% of the respondents confessed to self-medication. A total of 123 bacteria pathogens were isolated from 40 canals in 20 LGAs. Prominent enteropathogens isolated included Escheriachia coli (28.5%), Salmonella spp (16.3%), Vibro cholerae (10.6%) and Shigella spp (5.7%). The isolates were most susceptible to Amikacin (92.7%) and Imipenem (83.7%), and least susceptible to Erythromycin (28.5%) and Ciprofloxacin (30.1%). Vibro cholerae was isolated from 13 canals in nine LGAs and were resistant to Ampicillin (69.2%), Cotrimoxazole (46.2%) and Tetracycline (38.5%).

Conclusion: This study revealed the presence of antibiotic resistant enteropathogens in canals in Lagos State with potential to cause diarrhoea epidemic. Detection of Vibro cholera in canals in Lagos State is a major concern and a sensitive signal of an impending Cholera outbreak. There is need for proactive measures to be taken to mitigate future outbreaks of Cholera and other diarrhoeal diseases.

WEOH-OP29

Abraham Ajayi

Assessments of Antimicrobial Resistant Bacteria (ARB) and Antimicrobial Resistance Genes (ARGs) from waste effluents and soil of livestock farms in Lagos state, Nigeria.

Correspondence: ajayiabraham2013@gmail.com

Introduction: Human activities including agriculture, treatment of humans and animals, and production of antibiotics contribute directly or indirectly to antimicrobial resistance proliferation. This study accessed the bacterial composition, antimicrobial resistant bacteria and antimicrobial resistance genes of waste water effluent (8) and soil (4) of selected farms, abattoir, tertiary hospital and pharmaceutical company in Lagos Nigeria.

Methods: Standard microbiological techniques and 16S rRNA amplicon sequencing were used.

Results: Physicochemical analysis of waste water and soil samples revealed parameters that exceeded tolerable limits that could have adverse impact on the ecosystem. Klebsiella pneumonia had the highest prevalence (21.5%) among bacteria species isolated and Enterobacter aerogenes isolated from waste effluent of abattoir was resistant to 7 antibiotics with multi-antibiotic resistance index (MRI) of 58.7. Thirty four (52.3%) of the 65 bacterial strains isolated were resistant to pefloxacin and 21 (32.3%) were resistant to thrimethoprim/sulfamethoxazole. blaTEM gene was detected in all 12 samples with mean Ct values ranging from 15.60±0.12 to 27.93±0.06. blaKPC, blaCMY, and qnrS were detected in 1, 7, and 10 of both soil and waste effluents. Nine major phyla among others were identified as dominant in the bacterial composition of both soil and waste effluents. Proteobacteria (87.2%) dominated among the phyla of pharmaceutical company waste effluent, while Fusobacteria dominated among the phyla of waste effluents of farms. Arcobacter, Cetobacterium, Enterobacter, Klebsiella, and Corynebacterium were bacteria genera that had visible dominance across samples. Lactobacillus helveticus group was the dominant bacteria species among soil samples of poultry farms, while Corynebacterium xerosis group and Dechloromonas dentrificans group were dominant in abattoir and hospital waste effluents respectively.

Conclusion: The high prevalence of multidrug resistant bacteria with high MRI recorded in this study indicates the risk of continuous amplification of the problem. The need for scrupulous antibiotic use and treatment of waste effluent is advocated.

WEBS-OP30

Oluwabukunmi, Odedeji

Inheritance of purple pigmentation in carica papaya Linnaeus

Correspondence: Odedejiife@gmail.com

Objective: The aim of this research work is to investigate the mode of inheritance of purple pigmentation on petioles and nodes of Carica papaya L. During this course of this study, 120 seeds of Caricapapaya were collected from purple petiole female papaya plant and planted, out of which 106 seedlings germinated, but only 101 seedlings made it to maturity. After 4 weeks of germination, the germinated papaya plant were transplanted into new planting bags and perforated buckets and monitored for the presence of pigmentation. Inheritance of purple pigmentation were observed, of which petiole pigmentation were observed to be either green or purple, node pigmentation was also observed to be green or purple. Inheritance of pigmentation on petiole and node segregated and fit into 1purple: 1 green after subjecting to chi square analysis although it has different values for each character, fifty two (52) Carica papaya plants had green pigmentation while the remaining forty nine (49) had purple pigmentation. it was also observed that all Carica papaya L. with purple pigmentation has it on both petioles and nodes.

Result: the result showed that the inheritance of pigmentation was controlled by one single gene in its recessive state (pp) producing purple pigment on the nodes and petioles. Only gene with a dominant allele (P-) producing green pigmentation on the nodes and petiole.

WEBS-OP31

Babatunde Lawal Oriyomi

Molecular Detection Of Flaviviruses In Patients Presenting With Febrile Illness In Two General Hospitals In Lagos State

Correspondence: oriyobabatunde@gmail.com

Introduction: Arthropod-borne viruses (arboviruses) are among the most common agents of human febrile illness worldwide and

the most important emerging pathogens, causing multiple notable epidemics of human disease over recent decades. Despite the public health relevance, little is known about the geographic distribution, relative impact, and risk factors for arbovirus infection in many regions of the world. Arboviruses are among the most common agents of febrile illnesses worldwide and are important emerging pathogens Flavivirus infection is a common cause of febrile illness but are routinely misdiagnosed, most commonly as malaria/typhoid.

Methods: This study was designed to detect and to determine the prevalence of Flavivirus infections among febrile patients in two general hospitals in Lagos state using Reverse Transcription Polymerase chain reaction (RT-PCR). One hundred and thirty (130) venous blood samples of patients with high fever were collected from patients attending these hospitals between January and May, 2018. The samples were analyzed using E.Z.N.A Viral RNA kit and the amplification of NS5 gene for Flavivirus was done using Nested Reverse Transcription polymerase chain reaction.

Results: A total of 11(8.5%) samples were positive. Most of the positive samples were observed in age range 1-5years. The results showed a prevalence rate of 8.5%. Most of the Flavivirus positive samples were observed in female, 8 (72.7%) and male, 3 (27.3%). The major symptoms observed in infected patients include headache, rashes, joint pain and abdominal pain

Conclusion: This study shows a low prevalence of flavivirus in the study area. The involvement of viruses in febrile conditions as shown by this study has buttressed the need to extend laboratory examination of febrile conditions beyond malaria parasite to some of these arboviruses whose vectors are abundant in our environment.

WEBS-OP32

Mariam Eluma

Prevalence Of Aeromonas Species In Treated And Untreated Water In Parts Of Plateau State, Nigeria

Correspondence: elumaoche39@gmail.com

Background: The genus Aeromonas is one of several medically significant genera that have become an increasingly troublesome group to Physicians and Microbiologists. The genus Aeromonas comprises of gram-negative, non-spore forming rod-shaped, facultative anaerobes that are widely distributed in aquatic environments. Eight hundred (800) water samples comprising Tap water (160), well water (160), dam water (160), sachet water (160) and bottled water (160) were randomly collected in 300 ml sterile storage bottles from different sites while the bottled water and sachet ("pure water") were purchased from different vendors within the sampling areas. Samples were analyzed within three hours of procurement. Isolation, enumeration and identification of Aeromonas were carried out following standard procedure. Out of the 800 water samples examined for Aeromonas species 386 were positive. Among the water samples examined, dam water yielded the highest percentage prevalence of Aeromonas with a percentage of 19.25% while the lowest was bottled water with a percentage of 1.37%. In general, there was a significantly higher ($p<0.05$) prevalence of the organism during the wet season 257(32.1%) than the dry season 129(16.12%). There was also a significant difference ($P<0.05$) between the prevalence of Aeromonas species in water with regard to the sources at 95% confidence level. This study shows that there is a high prevalence of Aeromonas species in the various water samples examined which may pose a health risk for high-risk individuals.

WEPH-OP33

Yusuf Babatunde

Need for inclusion of AMR into pre-service pharmacy curriculum in Nigeria: A comparison of the Bachelor of Pharmacy curriculum at the University of Ilorin with the WHO AMR competency framework

Correspondence: yusufbabs916@gmail.com

Background: Antimicrobial resistance (AMR) is a major public health concern around the world and has become a major cause of death worldwide, particularly in sub-Saharan Africa. Healthcare professionals have a role to play in curbing this slow-moving pandemic. This paper compares the Bachelor of Pharmacy curriculum at the University of Ilorin with the WHO AMR competency framework and outlines the need for the inclusion of AMR into the pre-service pharmacy curriculum in Nigeria.

Method: A comprehensive review of the existing online version of the Bachelor of Pharmacy curriculum at the faculty of pharmaceutical sciences, University of Ilorin, Ilorin, Nigeria was conducted to identify what parts of AMR were taught, when they were taught, and the time allocated for the teaching. Findings from the curriculum were then compared with the World Health Organization's AMR competency framework to identify its alignment with the framework. We also reviewed relevant documents, national and international AMR reports, articles published in peer-reviewed journals, guidelines, policies, and grey literature available in Nigeria on the application of the AMR competency framework as a guide to implementing education and training of healthcare workers on AMR.

Result: Low coverage of the WHO AMR competency framework in the Bachelor of Pharmacy curriculum was observed. Antimicrobial use and antimicrobial resistance were introduced in the early stages of the pharmacy curriculum. Pharmacy students at the school were exposed to definitions of antimicrobials, different classes, their indications, doses, duration, and drivers of resistance. The curricula did not cover antimicrobial stewardships, disposal of antimicrobials, infection, prevention, and control (IPC), and measurement of antimicrobial consumption.

Conclusion: The core AMR competencies that are to be acquired by pharmacy students during pre-service training are inadequate. The curriculum should be redesigned, refocused, and reoriented to meet the identified gaps in AMR knowledge, skills, and attitudes.

WEBS-OP34

Stephnie Nwaiwu

Antimicrobial Activities and Phytochemical Screening of Five Nigerian Chewing sticks.

Correspondence: nwaiwustephnie@gmail.com

Introduction: Chewing sticks are important non-timber forest products widely used for dental cleaning in Nigeria. This work was intended to study the antimicrobial activities and phytochemical screening of some indigenous Nigerian chewing sticks which will serve as scientific support for the use of chewing sticks for oral hygiene in rural areas. Ethanol and aqueous extracts of Zanthoxylum zanthoxyloides, Massularia acuminata, Khaya ivorensis, Terminalia glaucescens and Azadirachta indica were obtained through soxhlet and maceration respectively. Qualitative and quantitative testing of bioactive compounds using standard procedures revealed the presence of tannins, reducing compounds, alkaloids, phenols, flavonoids, saponins and cardiac glycosides. Antimicrobial screening of the extracts was carried out on Staphylococcus aureus and Candida albicans which were isolated from mouth swabs. The ethanolic extract of K. ivorensis and A. indica had the highest antibacterial activity against Candida albicans and Staphylococcus aureus respectively. The

aqueous extract of Massularia acuminata exerted an antimicrobial effect only on Candida albicans. The variation in the antimicrobial activities of the extracts could be attributed to the concentration of the various bioactive compounds present in the chewing sticks. This study has confirmed the effectiveness of these chewing sticks and toothbrushes against certain microorganisms.

Keyword: Testing; Behaviours; Willingness; Knowledge; Practice

Authors and Co-Authors

Abdulhammed Babatunde
Abdulmumin Damilola Ibrahim
Abdulsamad Omotayo Aiyelabegan
Abdulwasiu Ibrahim
Abideen Olurotimi Salako
Abigael Edeh
Abiodun Kanmi Olakiigbe
Abraham Ajayi
Adebola Akinsulie
Adetoun Mustapha
Adeyemi Isaac Adeleye
Alejandra Chamorro
Alemseged Abdissa
Alfred Amambua-Ngwa
Aliyu Sani Ado
Amina Ahmed El-Imam
Andres Jaramillo
Azuka Patrick Okwuraiwe
Babatunde Adewale
Babatunde Lawal Oriyomi
Babatunde Lawal Salako
Bamidele Iwalokun
Barbara Castelnuovo
Bosun Tijani
Bowofoluwa Sharon Abimbola
Bukola Bamkefa
Busayo Oladejo
Catherine Chizoba Onubogu
Chika Kingskey Onwuamah
Chinenye Angela Ogbu
Chioma Kunle-Ope
Chisomebi Duru
Christy A. Okoromah
Conor Caffrey
Damilola A. Omoboyowa
Damilola S. Bodun
Daniel Yilma
David Ogbolu Olusoga
David Ojo
Deborah Joseph
Delenasaw Yewhalaw
Dennis Abu
Dolapo Igbari
Dorcas Kareithi
Dr. Bamgboye M. Afolabi
Dr. Christiana Ayolabi
Dr. Funmilayo I. D. Afolayan
Ebelechukwu Afocha
Elizabeth Abodunrin
Emelda Chukwu
Emily Nzeribe
Eneyi Kpokiri
Eniyou C. Oriero
esleemah Taye Abdulkareem
Essiet Udo Utibeima
Esther Abidemi Momoh
Esther Momoh
Ezechi, O
Ezekiel A. Olugbogi
Felicia Adesina
Festus, O, ONWULIRI
Fiona Kennedy
Florence, Olufunke, DARDA
Folahanmi Tomiwa Akinsolu
Folake Latifat Adedokun
Franklin Glozah
Grace Deborah Vincent
Habeeb Salami Damola
Helen Adekanmbi
Idigbe, I
Ifechukwu Stephanie Ezeilo
Ifeoma Idigbe
Isaac Adeyemi Adeleye
Isaac O. Oluwafemi
Ismaila Ahmed
Jacob Yisau
Jane Okwuzu
Janet, Uchechukwu
Jonathan Joseph

Joseph Shaibu
Joseph Tucker
Joshua F. Adedara
Josiane Awan Aben
Joy Isioma Oraegbu
Kamryn McDonald
Kazeem Adewale Osuolale
Kelechi Obiozor
KORDINUM ALUMONA
Leona Chika Okoli
Louise, Uhue, Louise
Lyda Osorio
Mabel Uwandu
Maria Isabel Echavarria Mejia
Mariam Eluma
Matthew Oziegbe
Mirgissa Kaba
Mitchell, T
Mobolaji Olagunju
Momoh Abidemi Esther
Moses N. Ikegbunam
Muinah Adenike Fowora
Ngozi Ezemelue
Ning Feng
Njuguna Diana Wangeshi
Nkechi H. Atasie
Nkem Okonkwo
Nneka Onyejepu
Nneka Onyejepu
Noah Fongwen
Nureni, Ipinloju
Nyatanga., B
Obiyo Nwaiwu
Ogochukwu Sokunbi
Ogbu Chinenye Angela
Ojopagogo Temiloluwa
Oladele David
Olaoluwa Pheabian Akinwale
Olaoniye Habeebat LABO-POPOOLA
Oliver Ezechi
Olufemi Olaleye
Olufemi Samuel Amoo
Olunike Abodunrin
Oluwabukunmi, Odedeji
Oluwakorede Adedeji
Oluwatoba Emmanuel Oyeneyin
Oluwatoyin Awoderu
Oluwatoyin D. Adeniyi
Oluwatoyin Olawunmi Adeyelu
Omowunmi Amao
Omowunmi, Abosede, Banjo
Opeoluwa Shodipe
Orsolya Varga
Paschal Ezeobi
Priscilla Ngozi Ezemelue
Qinyi Liu
Rahaman Ademolu Ahmed
Ramadan Ifekayo Aramide
Rosemary Ajuma Audu
Rufai Abubakar
Sabo Adamu
Samuel Sheppard
Sharon Abimbola Bowofoluwa
Simon Rayner
Stella Smith
Stephen Karera
Stephen Oluwanifise Oyejide
Stephnie Nwaiwu
Sulaimon Akanmu
Sulieman Alhaji Muhammad
Susan Holdbrooke
Tawakalit Boluwatife Adigun
Temi Filani
Temidayo Akinreni
Temiloluwa Ojopagogo
Thecla Igbasi
Tilak Chandra Nath
Timothy Nwafor
Tochukwu Ifeanyi Onuigbo
Tomi Tokun

Toyosi Raheem
Usman Ahmad
Victor Talavera-Urdanivia
Vincent Duru
Vincent Pam Gyang
Wale Ojogbede
Weiming Tang
Yoseph Gebreyohannes Abraha
Yuka Manabe
Yusuf Babatunde
Zainab Tukur
Zakari Nuhu Lambu
Zewdie Birhanu Koricha

ACKNOWLEDGEMENT

The Central Organizing Committee acknowledges with thanks the contributions of the following individuals and organizations towards the success of this conference.

Platinum Sponsor

ThermoFisher SCIENTIFIC

54gene

Gold Sponsors

HTDS Hi-Tech Detection Systems

APIN

PETER & JANE LTD

Silver Sponsors

PPNL

UIS

Bronze Sponsors

inqaba biotec™ Africa's Genomics Company

NEOPHOENIX LIFESCIENCES

Synapse Technologies

FOWM

bioLogix support services

Open Sponsors

ALSTEIN my research assistant

Nestlé

BELOXXI

DAT

TOAST JANITORIAL SERVICES

RANSTOJAN

Student Scholarship Endowments

Aliko Dangote Foundation — **Gold Scholarships for 20 students**

APIN — **Bronze Scholarships for 30 students**

Special Session Sponsors

APIN

ThermoFisher SCIENTIFIC

Viral Haemorhagic Fever Research Group, Microbiology Department, NIMR

Endorsers and Associate Sponsors

NIMR

NASCP National AIDS, Viral Hepatitis and STIs Control Programme — Federal Ministry of Health

Viral Haemorhagic Fever Research Group, Microbiology Department, NIMR

The Director General, Senior Management Committee and Chairman, Local Organizing Committee sincerely thank everybody for gracing this historic occasion.

NIGERIAN INSTITUTE OF MEDICAL RESEARCH

6, Edmund Crescent, (off Murtala Mohammed Way)
P.M.B. 2013, Yaba, Lagos - Nigeria
Tel: +234 909 213 3886
E-mail: info@nimr.gov.ng
www.nimr.gov.ng

@NIMRNigeria