NIMR BOOK OF ABSTRACTS

4TH ANNUAL SCIENTIFIC CONFERENCE 12th - 14th November, 2013

NIGERIAN INSTITUTE OF MEDICAL RESEARCH

Research for National Health

4th ANNUAL SCIENTIFIC CONFERENCE

THEME:
*Impact of Climate Change on Health:
Identifying The Research Gaps*

BOOK OF ABSTRACTS

Research for National Health

MAIN AUDITORIUM, LAGOS, NIGERIA
12th - 14th November, 2013
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Time	Monday, 11 November 2013	Tuesday, 12 November 2013	Wednesday, 13 November 2013	Thursday, 14 November 2013
9:00 am		REGISTRATION 8:00 – 9:00 am	REGISTRATION 8:00 – 9:00 am	REGISTRATION 8:00 – 9:00 am
		YOUNG RESEARCHER AWARD CONTEST 8:00 – 9:30 am	PLENARY 9:00 – 12:00 noon — 10 years of NIMR-PARTEC Partnership	PLENARY 9:00 – 12:00 noon — NIMR Research Group Presentations
	SESSION 1 SCIENTIFIC PAPER WRITING AND JOURNAL SELECTION	OPENING CEREMONY AND DISTINGUISED LECTURE 10:00 – 12:00 noon — Chair: Prof Victor Wakwe — Distinguished Lecturer Dr S.I. Smith	Chair: Dr Prosper Okonkwo — Host: Prof IAO Ujah, mni	Chair: Prof I.A.O. Ujah mni
12 noon			ORAL ABSTRACT Session 1 Track: Basic Sciences — Session 2 Track: Clinical Sciences	ORAL ABSTRACTS Session 1 Track: Operational & Implementation Research — Session 2 Track: Clinical Sciences
1:30 pm		LUNCH	POSTER PRESENTATIONS — LUNCH	POSTER PRESENTATIONS — LUNCH
2:30 pm	SESSION 2 BUDGET PREPARATION AND FINANCIAL MANAEMENT OF GRANTS	SYMPOSIUM Chair: Prof Joe Ezigbo — Theme: "IMPACT OF CLIMATE CHANGE ON HEALTH: Identifying the research gaps"	ORAL ABSTRACT Session 1 Track: Environmental and Public Health — Session 2 Track: Social Sciences & health Economics	CLOSING SESSION & COMMUNIQUE Chair: Chief Handel Okoli Chairman Governing Board
	PRECONFERENCE WORKSHOP 11:00 – 3:00 pm		PRODUCT EXHIBITION & POSTER VIEWING	EXHIBITION & POSTER VIEWING
4:00 pm	ARRIVAL & REGISTRATION	Young Researchers Club • Articulating Research ideas • Incorporating standards and quality in research	ROUND TABLE Ethics Forum Convened by NIMR Ethics Committee	
5:00 – 7:00 pm				

1. Dr Samson Awolola (Chairman)
2. Dr Chika Onwuamah (Co-Chair)
3. Dr Agatha David
4. Dr Olugbenga O. Aina
5. Mrs Ebiere Herbertson
6. Dr Oliver Ezechi

TUYOP01

Lack of portable water and poor personal and environmental hygiene fuel cholera epidemics in Nigeria: Findings from field studies

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Background: Cholera remains a public health challenge causing morbidity and mortality in Nigeria. Despite various control efforts, recent epidemic has been reported in different geopolitical zones of Nigeria since August 2010. We conducted epidemiological studies to assess cholera outbreak in Bauchi State (northeastern geo-political zone) in 2010, Abia State (Southeastern geo-political zone) in 2011 and Ogun State (Southwestern geo-political zone) in 2013.

Methodology: Communities with reported cases of cholera were visited to assess the personal and environmental hygiene practices, source of water supply and method of disposal of human waste. Hospital records of the health facilities where suspected cases of cholera were managed were studied for patient's demographics and epidemiological trend.

Results: A total of 3358 suspected cases of cholera was reported in Bauchi state with 104 deaths (Case Fatality Rate [CFR]-3.1%) in 2010. One hundred and forty one (141) suspected cases of cholera were reported in Abia state with 23 deaths (CFR-16.3%) in 2011 while 261 cases were reported in Ogun state with 12 deaths (CFR-4.6%) in 2013. Females were more affected (57.9%) than males. 63.5% of cases were 15 years and above while 19.2% were children less than 5 years of age. Lack of clean portable water supply was the most common factor for cholera epidemics across the three states studied (X^2=10.85, p=0.004), while open defaecation was found to be another aetiological factor mainly because of the absence of any form of lavatory facilities; modern toilet facility or Improved ventilated pit (VIP) latrines (X^2=21.69, p= <0.001). Bacteriological study of both clinical and environmental samples confirmed that the cholera epidemics in the three states were caused by Vibrio cholerae O1, ogawa serotype with similar antibiotic sensitivity pattern across the three states. While the Vibrio cholera strain was resistant to Augmentin, Amoxicillin, Ciprofloxacin and ceftazidime, they were however, sensitive to Doxycycline and Tetracycline.

Conclusion: Lack of portable water supply and poor personal and environmental hygiene are preventable factors that fuel recurring epidemics of cholera in Nigeria. The provision of clean potable water by Governments of Nigeria, coupled with sustained health education on health promotion and disease prevention, including hand washing practices after defaecation and improved environmental hygiene through the enforcement of compulsory sanitation days will reduce the frequency and magnitude of cholera epidemics in Nigeria.

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TUYOP02

Treatment Response Utility Tool Predicts Antiretroviral drug Adherence and Treatment Outcome.

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Background: Adherence to antiretroviral drugs is necessary for successful HIV treatment outcome. Several measures of adherence are available, but the only practical options in large HIV treatment centres are the use of self report and pharmacy refill. The treatment response utility (TRU) was developed to assist in patient management.

Objectives: This study aims to determine the feasibility of using adherence as shown in the TRU to estimate viral suppression.

Method: A cohort of ARV naive patients that were commenced on HAART between February to March 2009 were followed up for 48 weeks. Adherence was monitored and the viral load also determined at the end of this period. Logistic regression model were used to determine the average adherence percentage among the cohort that predicts viral suppression.

Result: A total of 236 adults were commenced on ARVS in this period, but only 181 that completed the follow up, had both baseline and 48weeks viral load were used for the analysis. Majority of patients were females (62.4%), had at least a primary education (70.7%), aged 30-39 years (50.3%) and were married (62.4%). Average adherence ranged from 95-100% in 80.6%, 80-94% in (13.8%) and 0-80% in (5.5%) patients. Viral suppression was achieved by 155(85.6%) patients at 48 weeks. Only adherence 95% was a predictor of viral suppression (OR: 0.03, 95% CI 0.01-0.18).

Conclusion: Adherence as measured by the TRU predicts viral suppression as over 80 % of patients that had 95% achieved viral suppression at 48 weeks. The TRU is a good tool for adherence monitoring and thus can be used in areas with no viral load support to monitor treatment outcome.

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TUYOP03

Factors associated with risk of malaria infection among pregnant women in Lagos, Nigeria

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Background: Pregnant women living in an area of stable malaria transmission like Lagos, Nigeria, have been identified as being at increased risk of malaria infection. In this area, most of the infections are asymptomatic which are overlooked and untreated to the detriment of the mother and fetus.

Objective: To identifying the factors associated with risk of malaria parasitaemia in pregnancy in Lagos, Southwest Nigeria.

Methods: Demographic information and malaria prevention practices of the pregnant women were captured using structured questionnaire. Microscopy was used to establish malaria infection, species identification and parasite density.

Results: A total of 1,084 pregnant women participated in the study. The prevalence of malaria was 7.7%. *P. falciparum* was seen in 95.2% of the cases as either mixed infection with *P. malariae* (3.6%) or as mono-infection (91.6%). Malaria preventive practices associated with significant reduction (P<0.05) in malaria infection were the use of insecticide sprays (RR = 0.36, 95 C.I. 0.24-0.54) and the combined use of insecticide spray and insecticide-treated nets (ITN) (RR= 6.53, 95% C.I. 0.92-46.33). Sleeping under ITN alone (RR = 1.07, 95% C.I. 0.55-2.09) was not associated with significant reduction in malaria infection among the study participants. Young maternal age (<20years) (RR = 2.86, 95% C.I. 1.48 – 5.50) but not primigravidity (RR = 1.36, 95% C.I. 0.90 – 2.05) was associated with increased risk of malaria infection during pregnancy. After a multivariate logistic regression, young maternal age (AOR = 2.61, 95% C.I. 1.13 – 6.03) and use of insecticide spray (AOR = 0.38, 95% C.I. 0.24 – 0.63) were associated with increase and reduction in malaria infection respectively.

Conclusion: Malaria prevalence is low among the pregnant women studied. Young maternal age and non-use of insecticidal spray were the main factors associated with increased risk of malaria infection during pregnancy in Lagos, Nigeria.

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TUYOP04

Altered platelet counts influenced levels of pro-inflammatory cytokines of *Plasmodium falciparum (P.f)* infected patients in a semi-urban area of Nigeria

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Background: Malaria is commonly associated with various degrees of haematological alterations such as anaemia, thrombocytopenia and leucopoenia. Platelets play critical roles in malaria pathogenesis including cytoadherence, Sequestration and killing of *P.f* within infected erythrocytes (IRBCs). However, the relationship between innate immune response and Platelet function is not well established. Understanding the correlation between innate immune response and Platelet function in *falciparum* malaria is important in understanding malaria pathogenesis.

Objective: To evaluate the relationship between Platelet function and immune response among *P.f* infected patients in Lagos, Nigeria.

Methods: 613 HIV-negative volunteers with a history of fever and forty (40) Uninfected controls were screened microscopically for *P.f* in a cross-sectional study at IJEDE GH. Full Blood Counts (FBC) was determined using Finray Auto-analyzer while TNF-α, Interlukin-1β & Interlukin-12 were determined by ELISA. Statistical analysis was done using SPSS Version 20 and Study protocol was approved by NIMR IRB.

Results: A total of 128 patients comprising of 62 (47%) males and 66 (53%) females with a median age of 10 years were recruited. Malaria prevalence was 20.85%. Hb, MCH and MCV were significantly (P<0.05) lower in the infected than uninfected participants. Mild Thrombocytopenia (Platelets counts < 150×10^9 / L**)** was prominent among infected participants (P<0.05). Parasitaemia, IL-12, TNF-α, Interlukin-1β & Interlukin-12 were significantly (P≤0.02) negatively correlated with platelet function.

Conclusion: Results from this study suggests that altered platelet count is a risk factor for severe outcomes of malaria

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WE1OP01

Ethno - botanical survey of plant species used as mosquito repellents in Nigeria

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Objective: To conduct an ethno - botanical survey of plant species used locally as mosquito repellents in selected states in Nigeria

Method: An ethno - botanical survey was carried out in four geo – political zones in Nigeria between March and October, 2011 using structured questionnaires and focus group discussions to obtain information on plants with suspected repellent activities. Data were collected from herb sellers in each of the study states with a view to determining the source of the plant species and method of utilization. Fresh plant samples were collected with the help of users and identified by a qualified taxonomist after which voucher specimens were deposited in the University of Lagos Herbarium.

Results: A total of 53 plant species were cited by the respondents as being used locally for repellency purposes in the study states. *Hyptis suaveolens* leaf was the most mentioned with a percentage frequency of 13%. This was followed by *Citrus sinensis* peel (8%) and *Cymbopogon citrates* leaf (5.1%). Leaves were the most mentioned part of the plant used for repellency purpose and this is probably due to the fact that they are exposed and conspicuous which makes them easy target for herbivores and other pathogens. Plants therefore tend to deposit and localize these secondary products in this area where attack is most likely to occur to serve as repellents.

Conclusion: There is need for documentation of these plants for further investigation as they constitute potential sources of repellent candidates against a wide range of insect pests.

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WE1OP02

Comparism of modified Methemoglobin reduction method for Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency assay

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Background: *In a medical laboratory setting meant for teaching, research and patient care, comparative evaluation and re-evaluation of methods used in assay of clinical parameters is very important if precision, adaptability and ease of diagnosis is to be maintained.* Methaemoglobin reduction (wet) method though considered as old fashion of qualitative analysis of G6PD was modified for comparative assay due to its relevance in population survey.

Objective: This study was carried out to determine the sensitivity and specificity of the two methods and examine their suitability/quality grid as a diagnostic tool.

Methods: *A total of 300 blood samples were tested. Inclusion criteria were blood samples with Hb ˃ 13.0g/dl, Total bilirubin < 0.9mg/dl and < 0.5mg/dl for direct and indirect bilirubin. Two screening methods were used: the original methemoglobin (wet) reduction method of Brewer and the modified technique which involved the use of already prepared tube, air-dried with reagents. The control assay by UV spectrophotometer @ 320nm using Randox test kits was used. All samples were stored in acid citrate dextrose at 4ºC and were placed randomly within the 2 groups.*

Result: Out of the 300 sample tested, 15 (5%; P=0.004) samples were G6PD deficient by UV spectrophotometer control assay, 12 (4%; P=0.043) by modified methemoglobin reduction method and 10 (3.3%; P=0.022) by original method of Brewer.

Conclusion: Both methods show a close diagnostic agreement in precision, reliability and adaptability. However, the ease and simplicity does not rule out experience, dialectic guidance and repeat of test result where obscurity may ensue.

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WE1OP03

Microsatellite evidence of genetic differentiation between populations of *Anopheles coluzzii* from South West Nigeria

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Background: Patterns of *Anopheles gambiae s.s.* population have received particular attention as these are considered suitable sites for experimental trials on transgenic-based malaria control strategies. We studied the population structure of *Anopheles coluzzi* from the forest ecological zone in Southwest Nigeria and determined genetic variation at 10 microsatellite loci located on chromosome 2.

Methods: Larval samples were collected from six localities each in Lagos and Oyo state separated by geographical distance ranging from 150 - 200km. PCR species identification was conducted on 360 female *Anopheles* mosquitoes (180 from each region) selected at random and subsequent identification of the *An. coluzzii* species.

Results: All samples identified in the Lagos populations were *An. coluzzii* while the samples from Oyo state contained 40% of the species. To determine the effect of selection, loci were located within and outside chromosome inversions. Analysis of genetic differentiation using F_{ST} estimate revealed that four loci (AG2H26, AG2H637, AG2H772 and AG2H603) located within inversion 2Rb and 2La are responsible for the differentiation between the two populations.

Conclusion: This observation suggests that genes within inversions in chromosome II counter the homogenizing effect of gene flow among populations of *Anopheles coluzzii* in South western Nigeria. This will seriously undermine the success of GMM in South west Nigeria if candidate genes are located within these inversions.

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WE1OP04
ALTERED LEUCOCYTE CHEMOTAXIS FUNCTION IN HIV SUBJECTS

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Background: The primary function of Leucocytes is believed to have been altered in HIV infection which culminates in the breakdown of the innate body defences mechanism.

Objective: To determine the chemotaxic activity of leucocytes in HIV infected subjects.

Methods: In order to establish this view and the process by which these functionalities were altered, a preliminary study of 600 blood samples comprising of 200 from subjects with HIV infection (newly diagnosed and not on drugs), 200 from HIV subjects undergoing treatment and 200 from seronegative normal controls were studied for Chemotaxic activities. Leucocyte chemotaxic activities which includes measures of adhesion, filterability and mobility were done using a modification of Boyden's technique as demonstrated by this study. Statistical analysis were done using MicroCal Origin 5.0 version.

Results: Leucocytes chemotaxic activities revealed that newly diagnosed HIV subject but not on drugs and sero-positive HIV subject on drugs recorded significantly lower chemotaxic indices when compared with controls (P<0.05, respectively), while the subjects undergoing treatment showed a significantly increased level of chemotaxis when compared with the newly diagnosed and untreated ones (P<0.05, respectively).

Conclusion: We conclude that Leucocytes, during HIV infection have their chemotaxis inhibited in both newly diagnosed subjects as well as those on treatment. The levels of inhibition of chemotaxis however, were significantly reversed in subjects undergoing treatment. We therefore, suggest that an inhibitory mechanism is initiated as soon as HIV gained entrance into the human system that prevent normal viral clearance before the infection is established.

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WE1OP05
Detection of Iron oxidising bacteria in sediment samples from an acid mine polluted stream using culture and molecular methods

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Background: Acid mine drainage is one of the most common types of water pollution, and it occurs as a result of the dissolution of sulphide minerals when exposed to water and air. The presence of iron and sulphur oxidising bacteria such as *Acidithiobacillus ferrooxidans*, *Leptospirillum ferrooxidans* and other acidophiles enhances the rate of the reaction and the detection of these bacteria is important for development of remediation strategies, biotechnological (biomining) and geochemical purposes.

Objective: To detect the presence of iron oxidising bacteria in sediment sample and to determine the effects of the AMD pollution on the indigenous microbial communities, using a pure strain as a standard for optimization.

Methods: Pure bacterial strains of *Acidithiobacillus ferrooxidans* and *Leptospirillum ferrooxidans* were cultured in K9 medium, NCIMB medium and ISP solid agar. Wet mount slides were prepared for light microscopy at x 1000 magnification. DNA was extracted from the pure strains and sediment samples after which PCR was carried out. Agarose Gel Electrophoresis was used to detect PCR success and Denaturing Gradient Gel Electrophoresis (DGGE) was used to visualise the 16S universal primer amplicons from sediment samples.

Result: A characteristic rusty orange-brown colour was observed in the media containing the pure bacterial strains after 5 days of incubation, indicating the presence of iron oxidising bacteria. The media containing the sediment samples also showed the same characteristic orange brown colour after 15 days of incubation. The agarose gel for the 16S specific primer, showed bands only for *Acidithiobacillus ferrooxidans* while the 16S universal primer, it showed bands at about 360bp for all the samples.

Conclusion: This study was able to detect the presence of iron oxidising bacteria in the sediment samples of the polluted and mixed stream using culture. Further analysis of the culture and DGGE will be required to identify the iron oxidising bacteria present in the samples.

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Clinical Sciences

WE2OP01
Early sero-reversion in HIV exposed children in Lagos, Nigeria

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Background: Though HIV DNA PCR has been used for the definitive diagnosis in children <18 months, studies have suggested that maternal HAART and extended infant Nevirapine for PMTCT may alter the period of persistence of maternal antibodies in the infant's circulation.

Objectives: To assess the proportion of HIV exposed infants with negative HIV antibody tests at 6 weeks of age and factors associated with this early clearance of maternal HIV antibodies in the infants.

Methods: Cross sectional study of mother-infant pairs from the PMTCT clinic of NIMR. Sociodemographic and clinical data were collected from the data base. Infants had an HIV rapid test (with Determine[(R)] kit) and HIV DNA PCR at age 6 weeks. Data were analyzed using STATA software.

Result: 102 mother-infant pairs were enrolled. 12 (11.8%) of the infants were negative to the HIV rapid test at 6 weeks! Mild disease (stage 1) at presentation, older mothers, longer duration on care before pregnancy (p=0.01), higher maternal CD4 count (p< 0.001) and exclusive formula feeding (p <0.001) were significantly associated with undetected maternal antibodies at 6 weeks in the infant. All the infants who were antibody negative at 6 weeks also had a negative HIV DNA PCR.

Conclusion: A significant proportion of

children are HIV antibody negative at an earlier age than previously thought. This has implications for the infant HIV testing algorithm in Nigeria.

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WE2OP02

Comparative anatomy, task analysis and execution time in operative laparoscopy involving human females and female pigs

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Background: Operative laparoscopy, though an established practice in most parts of the developed world, is still at an infantile stage in the West Africa sub-region. Evidence tends to suggest that practicing with animal models such as the pig can reduce the learning curve and improve task analysis and performance time during operative laparoscopy in humans.

Objectives: To demonstrate the similarities and differences and how they influence task analysis and execution time in the study groups

Method: The study utilized 12 pigs and 15 females respectively. Both groups t had laparoscopic dissection and various gynecological procedures performed on them either in the animal laboratory of laparoscopic hospital New Delhi and Saint Nicholas Hospital Lagos operative theatre. Operative findings were documented and compared between the two groups. Further

analysis was conducted determine how the findings influenced task analysis and execution time.

Results: There was no marked difference in the relative anatomy of the pelvic viscera of the human female and the pigs, however there was a statistically significant difference in the average volume of gas used between the groups (p=0.00). Trocar insertion was successful at first attempt in all the humans [100%] but failed in 3 [25%] of the hogs at first attempt. The average time interval from skin to peritoneum in humans was 3.58minutes with a range of 2-7 minutes, while that of the hogs was 6.08 , with a range of 3-10 minutes (p =0.001). The average time interval from peritoneal entry to commencement of task was 4.42minutes in humans compared to 8.75 minutes in pigs (p= 0.00). However there was no statistically significant difference between the two groups for the average time required to complete the task (p=0.17).

Conclusion: Duration of task performance is not significantly different in human females and female pigs, although task analysis appears to be significantly prolonged in hogs compared to human females. Differences in surface and gross anatomy of the pelvis of the hog could explain this prolong duration of task analysis.

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WE2OP03

Molecular characterization and efficacy of antibiotic combinations on multiple antibiotic-resistant *Staphylococcus aureus i*solated from nostrils of healthy human volunteers

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Background: The increased use of antibiotics in recent times has resulted in the development of resistance to antibiotics. The significant clinical implication of resistance has led to heightened interest in the study of bacterial resistance.

Methods: Swabs were collected from nostrils of one hundred healthy human subjects, streaked in mannitol-salt agar, and incubated. The isolates were characterized to species level and fifty three (53) of these isolates were identified as *S. aureus*. Antibiotic sensitivity of the isolates was determined using agar diffusion method. The combined in-vitro antimicrobial activities of gentamicin and other antibiotics against the resistant strains (isolates 03, 13, 31, 40, and 70) of *S. aureus* were investigated using the checkerboard technique. The preliminary characterization of the plasmid DNA was also carried to determine if resistance was plasmid –mediated. The resistant isolates were cured and their antibiotic susceptibility pattern evaluated by agar diffusion method.

Results: The drug interaction results showed that the combination of gentamicin and the β-lactam antibiotics were synergistic. The preliminary characterization of eight resistant bacteria isolates showed plasmid whose sizes ranged from 10-13kb. The plasmid curing studies revealed that the observed multi-antibiotic resistance was both plasmid and chromosomally–mediated.

Conclusion: The observed multiple-antibiotic resistance was both plasmid and chromosomally-mediated and can be reversed using antibiotic–combinations of different mechanisms of action.

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WE2OP04

Investigation into the antimicrobial activity of different solvent fractions of *Boswellia Dalzielli* (Stem Bark) on strains of *Escherichia Coli* and *Pseudomonas aeruginosa* expressing ESBL (Extended Spectrum Beta Lactamase)

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Background: Following claims that some plants have antimicrobial activities against resistance strains microbes, the antimicrobial activities of the aqueous extract and the subsequent solvent fractions of the methanol extracts of *Boswellia dalzielli* stem bark were investigated against three microorganisms expressing ESBLs.

Methods: The solvent partitioning involving petroleum ether, chloroform, ethyl acetate and methanol, was used to extract various fractions of the methanol extract of dried pulverized *Boswellia dalzielli* stem bark. The agar well diffusion method was used to investigate the antimicrobial properties of the aqueous plants extracts and fractions of the methanol extract. The agar diffusion method aided in finding the MICs.

Results: The outstanding activity against the three test organisms *E.coli* 2, *E.coli* 3, and *Pseudomonas aeruginosa* at all the concentrations used (100mg/ml, 50mg/ml, 25mg/ml, 12.5mg/ml) was exhibited by the methanol fraction with zones of inhibition ranging from 6.0 to 15.7mm while the outstanding MIC was observed against *Escherichia coli* 3 by the aqueous extract (3.5mg/ml). The petroleum ether fraction had no activity against any of the test microorgainsms.

Conclusion: The ability of aqueous extract and fractions of the methanol extract of

Boswellia dalzielli stem bark to inhibit the growth of ESBL – expressing microorganisms is an indication of its antimicrobial potential.

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WE2OP05

Sero-prevalence of dengue type-3 Virus among patients with febrile illnesses attending a tertiary hospital in Maiduguri, Nigeria

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Background: Biomedical researches available to date indicate that Dengue viruses (DENV) could be among the aetiologies of acute fevers in Nigeria. Dengue viruses are mosquito-borne and exist in four serotypes (DENV1 to DENV4) which immunologically do not cross protect but cross react. Persons can acquire a secondary dengue infection from a different serotype (heterotypic strain), this may lead to more complicated and fatal form of dengue haemorrhagic and / shock syndrome. Dengue fever is clinically difficult to diagnose especially in the developing countries with no established diagnostic facility and could easily be mistaken for malaria and /or typhoid etc. This study was designed to determine possible circulation of DENV-3 in Nigeria and its significance in febrile illnesses.

Methodology: 256 serum samples from suspected cases of malaria and / or typhoid were collected from patients seeking for medical assistance at the University of Maiduguri Teaching Hospital, Nigeria. Cell culture-based Microneutrilization assay was used to test all the sera for DENV-3 neutralizing antibodies.

Results: Out of 256 samples 26 (10.1%) had neutralizing antibodies to DENV-3 virus. Among the seropositive patients, prevalence of DENV-3 antibodies was significantly higher in female patients (18.5%) compared to males (6.3%). The highest antibody titre recorded in this study was 1:320 while the lowest was 1:10. Majority of the seropositive patients were   20 years (14.5%).

Conclusion: Co-circulation of dengue virus with malaria and / typhoid in North-eastern Nigeria has been suspected. The findings of this study suggest the need to conduct further research on dengue virus in order to confirm its involvement or exclude it from being responsible for febrile illnesses.

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WE2OP06

Prevalence and distribution of high risk human papillomavirus in Lagos, Nigeria

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Background: Human papillomavirus (HPV) is the causative organism for cervical cancer, growing public health concern among women world over with estimated prevalence of 11.7% globally, and 24% in Sub-Saharan Africa. Five common types exist: HPV16 (3.2%), HPV18 (1.4%), HPV52 (0.9%), HPV31 (0.8%), and HPV58 (0.7%).

Objective: To estimate genotype-specific prevalence of high risk HPV in Nigeria.

Methods: One hundred and fifty-four women from various sites in Lagos were screened by obtaining high cervical tissue with Crevex® brushes. These were stirred into COBAS® PCR cell media vigorously, to solubilise samples, and assayed for HPV genotype(s) using COBAS® 4800 System. Test identifies HPV16, HPV18 and other high risk (OHR) genotypes (31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68) at clinically relevant infection levels.

Results: Age of the women ranged from 18-65 years (mean 38.6±6.4), majority (56.4%) between 20 and 39 years. Sixty-seven percent (67%) were married and 76.3% had at least secondary education. Age at first sexual intercourse ranged from 9-38 years (mean 20.4±3.9). Over   rd of women reported total life-time sexual partners between 2 and 10 (mean 2.9±2.5). Prevalence rate of high-risk HPV was 48.7% and frequencies of genotypes obtained were as follows; HPV16, 3.2%; HPV18, 3.9%; OHR-HPV, 33.8%; HPV16 and OHR-HPV, 1.9%; HPV18 and OHR-HPV, 5.2%; HPV16, 18 and OHR-HPV, 0.6%. Negatives and invalids were 49.4% and 1.9% respectively.

Conclusion: We recommend need for further studies to identify specific genotype(s) prevalent in Nigeria, necessary for policy formulation and decision making regarding routine vaccination against HPV.

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Environmental and Public Health

WE3OP01

A study on clinical and environmental strains of *Vibrio* Species isolated during 2013 Cholera epidemic in Ogun State, Nigeria

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Objective: To determine c**linical and environmental strains of *Vibrio* spp. associated with cholera epidemic, evaluate their genetic variation and cause of transmission.**

Methods: Clinical samples were collected from two hospitals in Abeokuta designated as Cholera Case Management Centers, while environmental samples were from four communities served by the two hospitals. Samples were analyzed at Cholera Research Laboratory, NIMR. *Vibrio spp.* were identified using oxidase and string tests. They were sero-grouped and serotyped using antisera and their identity was confirmed with *wbe01* and *wbe0139* specific primers using PCR. Cholera toxin production was detected using *ctx*A and *tcp* gene specific primers. The genetic profile of the strains was analyzed by RAPD-PCR. Antimicrobial susceptibility

testing was performed by disk diffusion technique.

Results: Of 13 clinical and 12 environmental samples, *Vibrio cholerae* was isolated from 10/13 (77%) clinical samples and 7/12 (58.3%) environmental samples (well water, sewage, drainage and soil). Both isolates were identified as toxin producing *V. cholerae* 01 Ogawa species and none as *V. cholera*e 0139. All clinical isolates were sensitive to doxycycline (100%), 90%) to tetracycline while the seven environmental isolates were sensitive to gentamicin (100%), and tetracycline (29%). The isolates were genotyped into three distinct groups that showed correlation between the clinical and environmental strains.

Conclusion: Based on these findings, we conclude that toxin-producing *V. cholerae* serotype Ogawa 01 is responsible for cholera outbreak in Ogun state. Same serotype of clinical isolates with variable genetic pattern was also found in the environmental samples.

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WE3OP02
The impact of climate change on health: identifying the research gaps

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Objectives: To identify the research gaps on the impact of climate change on health through a scoping reviewof original research on climate change and health. Scoping reviews address topics that are too broad for a systematic review and aim to identify research gaps in existing literature. Also assessed recent publication trends for climate change and health reserach.

Methods: Published quantitative reserach from 2008 onwards were searched. Reviewed disease burden studies that were specific to climate change and health. Also included intervention studies that focused on climate change and measured health outcomes. Used MEDLINE, Embase, and Web of Science databases, and extracted data on reserach priority areas, geographic regions, health fields, and equity (systematic differencesbetween advantaged and disadvantaged social groups).

Results: Five priority arears on climate change and health found include: health vulnerability; health protection; health impacts of mitigation and adaptation policies; decision-support and other tools; and cost of health protection from climate change. Identified 40 eligible studies. Recent original research addressed four of the five priority research gaps, but found no eligible studies of health adaptation interventions.

Conclusions: Climate change and health is a rapidly growing area of research, but quantitative studies remain rare. Among recently published studies, there are gaps in adaptation research and a deficit of studies in most developing nations. Funders and researchers should monitor and respond to research gaps to help ensure that the needs of policy makers are met.

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WE3OP03
Effect of interaction between plant and indigenous micro-organisms on the degradation of N-Alkanes in crude oil contaminated agricultural soil

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Objective: Effect of interaction between plant and indigenous organism on degradation of n-alkanes was assayed to evaluate its effectiveness in environmental clean -up.

Method: Four annual crops including *Vigna unguiculata var unguiculata*, *Mucuna pruriens*, *Zea mays* and *Telfaira occidentalis* were used. The variation in degradation of n-alkanes was ascertained using Gas chromatographic analysis. Soil samples from mapped out areas for the study were aseptically collected with sterile plastic sample containers and microbiologically analyzed to isolate naturally existing microbial flora. After pollution though, soil samples were also collected to know the persisting isolates in, the polluted soil. These were carried out using spread plate method on nutrient agar (Oxoid), MacConkey agar (Oxoid), Mineral salt agar (Lab-M) and Saboraud dextrose agar (Oxoid. The microorganisms isolated were characterized morphologically and biochemically using standard microbiological methods; whereas identification of bacterial isolates was as described in Berger's Manual of Determinative Bacteriology.

Result: The pre microbial analysis of polluted agricultural soil under study revealed the presence of *Penicillum* sp *Aspergillus fumigatus, Aspergillus niger*, *Candida sp, Pseudomonas fluorescence, Acinetobacter baumanni, Bacillus mycoides, Klebsiella* sp., *Staphylococcus aureus* and *Escherichia coli*. The post microbial analyses on the other hand depict the presence of all the indigenous isolates except *S. aureus* and *E. coli.* The results on comparison to the control sample depict that plants kept in the green house were able to degrade alkanes within the range of C_7 to C_{12} and C_{32} to $C_{40,}$ *Z mays* were able to degrade C_7 to C_9 only whereas *M pruriens* degraded C_{13} alkanes. Samples in the field were also able to degrade alkanes within the range C_7 to C_{15} and C_{36} to C_{40}.

Conclusion: This study could be a promising tool in conversion of crude oil in contaminated soil to less toxic substances for enhanced remediation.

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WE3OP04
A Preliminary Study on the Awareness and Compliance to Biosafety and Emergency Controls in Health Institutions

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Background: Biosafety and emergency controls are important issues worldwide, particularly in health research and other health related institutions.

Aim: To study the awareness and compliance to biosafety and emergency control practices at health institutions in Nigeria.

Method: A pilot study was conducted by obtaining Information from the staff of Nigeria Institute of Medical Research (NIMR) using a self administered semi structured questionnaire. Data obtained was analysed at Biostatistics Unit, Nigerian Institute of Medical Research using SPSS version 20.

Results: Of the 60 questionnaires distributed

45(75%) were returned, 40 % were aged 30-40 years and 86.7% had tertiary education. Among the study population 48.9% are aware of fire emergency protocols and assembling point, however only 31.1% knew a fire assembling point in NIMR. Biosafety awareness was high at 84.4% but only 22.2% understood its standards and procedures.

Conclusion: Most of the staff of Nigeria Institute of Medical Research are exposed to biohazard while performing their duty. This preliminary result shows there is a need for continuous training on biosafety standards and procedures and compliance evaluation in all related fields. This will help in maintaining appropriate safety for staffs and adequate preparedness for work emergencies.

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WE3OP05

Impact of PermaNet 3.0 on malaria vector in an area of pyrethroid resistant *Anopheles gambiae s.s.* in south western Nigeria

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Background: PermaNet® 3.0 a combination long-lasting insecticidal net (LLIN) is designed to have increased efficacy against pyrethroid-resistant malaria vectors. This study reports t**he impact of this** LLIN **on entomological indices** in an area with pyrethroid resistant malaria vectors in south western Nigeria.

Methods: We compared the efficacy of PermaNet® 3.0 with PermaNet® 2.0 and untreated polyester net as control (UTC) in Ilara, Irolu and Ijesa in Remo North LGA of Ogun State. 137 PN 3.0, 147 PN 2.0 and 150 untreated nets were distributed. The nets cover all sleeping spaces and were evaluated for insecticidal activity. Mosquitoes were collected monthly for 12 months and analysed. The arithmetic means of mosquito catches per house, entomological inoculation rates (EIR), mean mosquito blood feeding rate, mean mortality and mean parity rates amongst PN3.0, PN 2.0 and the UTC villages before and during the intervention were compared.

Results: *Anopheles gambiae s.l.* accounted for >98% of the *Anopheles* population in the three villages. Deltamethrin, permethrin, lambdacyhalothrin and DDT resistance were confirmed in the 3 villages. *Kdr* mutation was the sole resistance found at Ilara and *kdr* plus p450-based metabolic mechanisms at Irolu and Ijesa. Esterase and GST mechanisms were absent. Bioassays repeated on domestically used PN 2.0 and PN 3.0 had (100%) bio-efficacy. Efficacy remained (100%) for both net types after the 3rd, 6th, 9th and 12th month following nets distribution. The use of PN 3.0 showed significant reduction in mosquito densities with a 'mass killing' effect. It also induced changes in endophilic and anthropophilic tendencies, reduced blood feeding, lowered mosquito parity rates and sporozoite rates compared to PN 2.0 and UTC villages. EIR was significantly reduced in PN 2.0 village (75%) and PN 3.0 village (97%) post LLIN-distribution but remained same for UTC village.

Conclusion: The study confirms the effectiveness of PN 3.0 in reducing malaria transmission **compared to pyrethroid-only LLINs** in the presence of malaria vectors with *kdr* plus metabolic-based resistance mechanisms.

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WE3OP06

HIV counselling and testing (HCT) outreach programme – NIMR experience

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Background: HIV/AIDS is a major source of concern all over the world as it constitutes a major source of death and a threat to national development. Evidence showed the level of awareness of HIV/AIDS in Nigeria is still low and thus the attitude of most Nigerians towards voluntary HCT is still negative. In 2004, the NIMR HCT unit extended HCT services to motor parks, churches, mosques, brothels, bus stops, markets, abattoirs and riverine communities, as it was discovered that very few "healthy clients" come to the centre for fear of stigmatization and busy schedules. This poor uptake of HIV services at the designated centres hence informed the need for outreach services.

Methodology: Permission was obtained from the leaders and executives of the area to carry out a sensitization programme days before the outreach. Then HCT was carried out on the clients and those found positive were referred to the HIV treatment center nearest to them.

Results: From January 2006 to June 2013, a total of **72** Outreaches were carried out. Six thousand, two hundred and sixty six (**6266**) clients were tested, 3941(62.9%) males and 2325(37.1%) females. 83(1.3%) were positive while 6183(98.7%) were negative, out of which 55(66%) males and 28(34) females. A total of **35** pregnant women were screened with **7**(20%) being positive.

Conclusions: It was observed that more people turn out for outreaches. We suggest that government should put a huge effort in HCT outreach campaign since it will scale up integrated prevention strategy.

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Social Sciences and Health Economics

WE4OP01

Attitude of female secondary school teachers in Sagamu towards cervical cancer screening

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Introduction: Cervical cancer is a cause of significant morbidity and mortality among Nigerian women. Early detection by screening has proved to be an effective preventive measure, all over the world. Uptake of screening by women has however been sub-optimal, with attitudinal problems have been identified as a militating factor against adequate uptake of screening services.

Objectives: To determine the attitude of female secondary school teachers in Sagamu, Ogun state to cervical cancer screening.

Methods: A cross-sectional descriptive study was carried out among 256 teachers using a multistage sampling technique. Data collection was done using semi-structured self-administered questionnaires and analyzed using SPSS version 21.

Results: Respondents' mean age was 38.9 ± 6.9 years. 86.3% were married. 169 (66%) of the 256 respondents were willing to have the screening tests done while 34% were not. Of these, 3.9%% thought it should be done only when there are symptoms, 2.7% were afraid of the outcome, 18% believe they can never have such a disease. 81.6% felt it is very important to be screened. 83.6% were willing to learn more about cervical cancer and its screening and 74.6% were willing to tell others about cervical cancer and its screening. 84.4% of the respondents had a good attitude toward cervical cancer screening, with a mean score of 3.93. There was no statistically significant relationship between respondents' attitudes and age, educational status as well as other socio-demographic characteristics (p>0.05).

Conclusion: Majority of the female secondary school teachers studied had good attitudes towards cervical cancer screening.

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WE4OP02
Effectiveness of tracking Lost to follow up among adult Nigerians enrolled at the Nigerian Institute of Medical Research HIV treatment program

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Background: Tracking Lost To Follow Up (LTFU) patients is one of the strategies used in patient retention and to determine the status of patients registered in a HIV program. However as treatment programs expand, high rates of patient attrition become apparent and matching funds are needed to track the patients. The effectiveness of which can be determined from tracking outcomes.

Objectives: To evaluate the effectiveness of tracking Adult patient lost to follow up in large HIV treatment centre in Lagos

Methods: Patients lost to follow-up were identified from the electronic database .The Home Based Care unit, attempts contacting these patients via phone and document the outcome. When this fails tracking forms are filled and used by trained trackers drawn from the NIMR support group to locate the patients' addresses.

Results: A total of 19,334 patients were registered between 2004 and 2012 of which 3447 were listed as LTFU by 2012. The trackers were able to determine the final status of 967 (28.05%) of which 408 (11.8%) had died, 408(11.5%), had transferred to other centres While 161 (4.7%) returned to the program. Though the status of 367(10.65%) patients was established; it's not final because they are called again if they fail to return to the program. These include Promise to return, travelled and faith healing. 2113 (61.3%) accounted for patients who had given false addresses or had relocated.

  N1080000 was budgeted for the unit of which N128, 000 (11.85 %) was expended on sick visits and N952000 (88.15%) on tracking LTFU. We were able to determine the status of 1334 (38.7) patients, thereby expending   N713.64 per patient.

Conclusions The study demonstrates that tracking is an effective way to determine the patient's status. However, the cost per patient returned to the programme is high and unsustainable. LTFU prevention strategies should be adopted to ensure retention

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WE4OP03
Knowledge of genital herpes infection among attendees of an HIV counselling and testing centre in Lagos, Nigeria

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Background: Herpes simplex virus-2 (HSV-2) is a major cause of genital ulcer disease; it is associated with increased risk of acquisition and transmission of the Human immunodeficiency virus (HIV). Behavioural surveys on the knowledge of genital herpes in this region are lacking, despite its requirement for proper planning and implementation. Thus, the evaluation of the knowledge of genital herpes is essential for the design of strategies in reducing the infection and its contribution to HIV transmission.

Objective: To determine the knowledge of HSV-2 and genital ulcers among attendees of an HIV Counselling and Testing (HCT) centre.

Methods: A cross sectional study among individuals presenting to the Nigerian Institute of Medical Research for voluntary HCT. 258 consecutive and consenting attendees who were eligible for the study completed a structured self administered questionnaire. SPSS for window Version 20 was used for descriptive data analysis; statistical comparisons were made using the Chi square test with Yates correction or Fischer's exact test as appropriate. P-value of < 0.05 was considered significant.

Results: The respondents were 258 in total with *242 (93.8%) lacking knowledge* of the association of HSV-2 and genital ulcer. Among those that had a current genital ulcer 25 (9.7%), only 2 (8%) had knowledge of genital herpes infection. Married persons that tested positive to HIV also lacked knowledge of genital herpes (p<0.05**).**

Conclusion: Majority of the respondents lacked knowledge of genital herpes infection. Discussion of genital herpes should be encouraged at HCT, particularly among sero-discordant couples.

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WE4OP04
Examining the Interface between HIV Access to Care and Perception of Stigmatization

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Background: The introduction of HIV/AIDS treatment, care and support has notably improved the outcome of HIV infection globally. However, stigma and discrimination are a major challenge to the achievement of universal access especially in low-income countries. Consequent on stigma and discrimination is the reluctance to either screen for HIV, refusal to register for care or lost to follow up for those who manage to enrol into HIV care. Unfortunately there are little or no qualitative studies in our environment that have explored the reasons for the persistence in HIV related stigma and discrimination.

Objective: **This study** examined stigma as a factor that influences access to care among HIV positive patients in Lagos, Nigeria.

Methods: Mixed methods (quantitative and qualitative) were used to evaluate the degree

of stigma and association with utilisation of HIV care and the subsequent outcome.

Results: 74% respondents reported that initially they were reluctant to visit a treatment centre to avoid social embarrassment; 54% had not disclosed their HIV status while 32% wanted to protect themselves and their family. 28% reported being previously embarrassed by health workers.8% who had either homosexual or bi-sexual relationships were reluctant to disclose their status to avoid stigma associated with homosexuality. Factors that were associated with HIV-related stigma were low income, poor education, cultural beliefs, female sex and the younger age group.

Conclusion: Stigma contributes to poor access to HIV care services and non disclosure. Urgent efforts should be put in place to articulate efficient strategies and policies to reduce stigma and as such improve HIV service uptake and retention in care.

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WE4OP05
Knowledge and perceptions of research participants about clinical trials in Nigeria

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Background: Benchmarks of ethical research in developing countries stipulate collaborative partnership, which necessitates the involvement of research participants and taking cognizance of their opinions in decisions regarding research activities. Little data regarding participants' perceptions about research activities exist in the developing world. This study assessed the knowledge and perceptions of research participants in Nigeria about clinical trials.

Methods: A semi-structured questionnaire was used in a cross sectional survey. Data were analysed using SPSSV.17.

Results: Seventy-five participants (70.7% females, 29.3% males) with a mean age of 36.5 ± 10.3 years, enrolled in an efficacy and safety study of Artequin in Ikorodu LGA, Nigeria, participated in the survey. Most (64%) had secondary education while 6.7% were illiterate. Only 5 (6.7%) had previously participated in a clinical trial. The majority of respondents (70.7%) did not know how medicines are determined to be safe and none knew how new drugs are tested. While only 13.3% of respondents felt people were well treated during clinical trials, only 2.7% knew of somebody who had been harmed because of participation and only 1.3% could report on the type of harm experienced by the participant. The majority did not know if people were well treated or abused (86.7%) or whether people's rights were protected during clinical trials (84%).

Conclusion: Despite being enrolled in a clinical trial, participants have limited knowledge about such trials. This lack of information might impact on the quality of informed consent provided. If true collaboration is to be achieved in developing world settings, the community in general and trial participants in particular should be educated about the basic principles of research.

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TH5OP01
Analysis of Quality Performance for Liver and Kidney Markers: ALT and Creatinine

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Background: The significance of quality control (QC) in clinical laboratory is to determine whether the run is accepted or rejected. Furthermore, QC may also suggest that a problem is about to occur. This study aims to evaluate the variation in sequential analysis of control materials for alanine amino transferase (ALT) and Creatinine assays.

Methodology: This is a retrospective study using data generated in Human Virology Laboratory from 2 different control samples (precinorm and precipath) for the analysis of ALT and creatinine assays. These control samples were analysed using Roche/Hitachi 902 clinical chemistry autoanalyser. The controls were assayed four times per day after each set of about twenty (20) patient samples between January 2012 and August 2013. The data was analysed using SPSS version 20.

Results: For the different runs on the ALT analytes, the mean values for precinorm was 46.49 ($\pm$5.9), 46.96 ($\pm$6.8), 46.49 ($\pm$5.8) and 46.93 ($\pm$6.1) respectively; mean precipath was 119.01 ($\pm$13.1), 119.91 ($\pm$12.9), 120.85 ($\pm$13.4), 120.88 ($\pm$13.6) respectively. There were no significant difference in precinorm for ALT (p-value > 0.05) but the precipath

showed significant difference (p-value <0.05) after the second run, that is, after assaying 40 samples. For creatinine analytes, the mean values for precinorm were 134.34 ($\pm$6.6), 137.64 ($\pm$6.5), 138.22 ($\pm$6.8) and 139.85 ($\pm$7.6) respectively while mean precipath was 387.86 ($\pm$14.1), 388.88 ($\pm$14.8) 390.58 ($\pm$16.2) and 395.07 ($\pm$15.9) respectively. The precinorm for creatinine showed significant difference for all runs (p-value <0.05) while the precipath results also showed significant difference after the second run (p-value <0.05).

Conclusion: These findings depicts that it's a good practice to run controls after twenty samples especially for analytes using kinetic assays like creatinine.

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TH5OP02
Evaluation of haematolgy quality controls results using BC3200 Mindray machine

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Background: Haematological parameters are essential for monitoring toxicity of antiretroviral therapy in HIV patients. The running of quality control materials is essential to ensure that the test system is performing as designed, the results are precise and reproducible and to monitor the performance of the test over time to detect shifts and trends or other indicators that might indicate changes within the laboratory that affect the test. The aim of this study is to

evaluate the significance of running quality control after every twenty (20) sample.

Methodology: This was a retrospective data analysis of haematology low, normal and high controls results for haemaglobin, white blood cells, platelets, percentage lymphocyte and red blood cells generated after every 20th sample on Mindray BC 3200 from January-December 2012. An average of 3-5 controls was run daily. Microsoft excel was used for data entry while paired T-test was used for data analysis comparing the first value per day with subsequent values.

Results: The comparison of first control values (low, normal and high) and values from subsequent run for platelets and percentage lymphocyte shows no significant difference (p-value >0.05). The comparison of the normal and high controls for haemoglobin were significantly different (p-value <0.05) after the fourth run. The low and normal control values for white blood cell were significantly different (p-value <0.05) after the third run while the low control values for red blood cell was significantly different (P-value <0.05) after the third run.

Conclusion: These findings show that it is therefore a safe and good practice to analyse the controls for haematology after every 20 samples.

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TH5OP03
Evaluation of Partec count check beads green results of four Cyflow Counter machines

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Background: A precise enumeration of CD4+ T-cells is necessary for good clinical management of HIV/AIDS patients. To ensure the Cyflow machine (Partec) is in good condition and yielding quality results, good laboratory practice recommends frequent running of control materials to reduce the risk of reporting erroneous results for patient management. Some scientists tend to run the controls less frequently due to cost constraint. As a reference laboratory, we run controls frequently, depending on the number of samples.

Objective: To evaluate the importance of frequent running of count check beads green as control material for CD4 cell count analysis.

Methodology: All count check bead values obtained from four different Cyflow Counters (Partec, Germany) from January-December 2012 were analyzed. The values were collated for each machine, (pooling together all values per day) with a frequency of 3-6 runs per day. One-way analysis of variance (ANOVA) was performed on this pooled data; paired T- test was also done using the first value per day to compare with subsequent values.

Results: The one-way analysis of variance for the values obtained for the four analyzers showed that the differences were not significant (p>0.05). Comparisons of the first (baseline) value per day to the subsequent values were all not significantly different (p>0.05).

Conclusion: This study shows that there is no significant difference between the first values obtained and subsequent values. This indicates a good alignment of the machine within the study duration however; the count check beads green is not an appropriate control material.

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TH5OP04
Loss to follow-up and associated factors in HIV infected children on anti-retroviral therapy in Lagos, Nigeria

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Background: Lost to follow up (LTFU) has emerged as a reality in HIV treatment programmes. Unless the factors associated with this are identified and tackled, successful outcomes for a large number of HIV infected persons may remain elusive.

Objective: To determine the rate of LTFU and associated factors among HIV infected children on anti-retroviral therapy (ART) in Lagos.

Methods: Data base review of children commencing ART between Sept.2004 and Oct.2012. Those who had missed appointment for ≥ 6months were declared LTFU. Active tracking was then instituted for these children and those found were encouraged to return to care. Data on sociodemographic and clinical parameters on these children from the database were analysed using SPSS version 20.

Results: 658 (68.9%) of 955 children were initiated on ART. 132 (20.1%) of them were LTFU. 83.3% were <5years of age and 50% of the patients were LTFU within 12 months of registration. High Viral load, low CD4 count and advanced clinical disease stage at presentation were associated with LTFU. Other factors include orphaning (35%), low socio-economic status (28.8%) and PTB as a co-morbidity (33.3%). Death (12.9%) and self transfer (29.6%) were the major reasons for LFTU.

Conclusion: Self transfer and death due to advanced HIV disease were the major reasons for LTFU. Counselling and early tracking
should be intensified to ensure retention of children in care.

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TH5OP05
First line antiretroviral treatment failure and associated factors among Nigerian children living with HIV infection.

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Background The occurrence of failure to 1st line ARVs leads to the need for more expensive and less tolerable 2nd line regimen. Limited data are available to explain this trend in Paediatrics HIV management. The aim of this study was to identify the predisposing factors to failure of 1st line ARVs in children.

Methodology Database review of paediatric patients on ARVs, (January 2005 – December 2011), establishing socio-demographics of patient and their caregivers, clinical and laboratory parameters, co-morbidities and adherence patterns to use of 1st line regimens.

Results 438 children were on ARVs with 78 of them on 2nd line regimen, giving a failure rate of 17.8%. Significant proportion of children failing 1st line regimens had Hb levels <10g/dL after 6 months of therapy. Stage 3 of the disease was more associated with failure as well as Adherence pattern between 50 -79%. Mean duration of therapy before failure was 19.6 months. 64% of the children had both parents alive and 74.6% of the mothers were seropositive. Among children on 1st line ARVs, 76.8% had both parents alive and 81.1% of the mothers were seropositive. Most children presented at stage 2(38.9%).

Conclusion The commencement of therapy

at early stages of infection could help militate against failure. Management of anaemia and ensuring adherence patterns above 80% would impact positively on retention of children on 1st line regimens.

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TH5OP06

Antimalarial drug prescription pattern and use in Lagos: implication for policy and treatment outcome

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Background: In 2005, the Nigerian National malaria control programme recommended artemisinin-based combination therapy (ACT) as the first-line therapy for malaria in Nigeria. In the context of quality assurance to sustain the clinical efficacy and improved coverage of ACT in the country, continuous monitoring of ACT used in malaria endemic setting has been recommended by WHO. However, there are limited information on the level of compliance with this recommendation, which may impact heavily on antimalarial drug resistance and treatment outcome in Nigeria. This study was conducted to determine the level of compliance in a cosmopolitan and multiethnic city of Lagos.
Methods: One hundred and seventy nine health workers and 488 individuals in 9 randomly selected local government areas were interviewed using interviewer-administered questionnaire over a period of one year. Information on socio-demographic characterisitics, antimalaria drug use and knowledge were obtained. Data management was with EPI-INFO 2002 statistical software.
Results: The knowledge of ACT was low among study group, as 40% of health workers and 88.9% of non-health workers have no knowledge of ACT**.** One hundred and forty one (28.9%) of 488 non-health workers interviewed reported receiving treatment for malaria in the last one week. The majority of them received non-ACT regimen (89.0%) as against 11.0% that received ACT regimen. Sulphadoxine- Pyrimethamine (61.0%) and Chloroquine (28%) were the non ACTs regimens received by the respondents. Among the 179 health workers interviewed, majority commonly prescribes either Chloroquine (57.5%) or Sulphadoxine-Pyrimethamine (22.3%) for treatment of malaria.
Conclusion: The use of non recommended drugs (CQ and SP) is still common among the study population several years after the policy shift. This has severe implication on the morbidity and morality associated with malaria. This is possible due to the poor knowledge about ACT among the studied population. Public enlightnment of the populace and training of health workers is therefore recommended.

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TH2OP01

Incidence and outcomes of haematological abnormalities in the era of HAART in an urban cohort of HIV-infected persons

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Background: The advent of HAART had immensely contributed to better outcome and survival of individuals living with HIV/AIDS. However, there are conflicting reports on the impact of HAART on hematological parameters. This study assessed the impact of HAART on hematological abnormalities and evaluates the risk factors for cytopenia in HIV infection.
Method: Data from medical records of 482 HIV patients visiting NIMR HIV clinic from January 2006 to June 2012 were retrospectively reviewed after excluding HBV and HCV co-infections. Demographical data, Hematological parameters, CD4, Viral titres and ART used were analysed. Multiple logistic regression analyses were performed to identify possible risk factors for cytopenia using SPSS v20.
Result: Median age was 44 years and 63.7% were females. Baseline median CD4 count was 121 cells/μl. The trend of cytopenia before and after initiation of HAART in the study population over 6 years is shown in this table.

Types of Cytopenia	Baseline			6months			3year			6years		
	*1	*2	*3	*1	*2	*3	*1	*2	*3	*1	*2	*3
Anemia	210	150	48	258	62	8	188	38	6	232	45	8
Thrombocytopenia	13	2	-	5	-	1	-	-	-	3	-	1
Neutropenia	133	24	24	151	36	39	155	39	4	122	19	5
Lymphopenia	113	215	87	160	237	40	281	179	8	257	196	17

*1= Mild, 2= Moderate, 3=Severe
Conclusion: AIDS status at baseline was identified as major risk factor for cytopenia especially ananemia and lymphopenia. HAART seems to improve and not worsen cytopenia.

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TH2OP02

Prevalence of Hepatitis B Virus surface antigen (HBsAg) among apparently healthy individuals in Lagos, Nigeria

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Background: Hepatitis B Virus (HBV) is a sexually transmitted infection and of a serious public health concern causing about 2 billion infections worldwide and infected individuals can remain asymptomatic for decades. However, more than 80% of them become chronic carriers which result in an increased risk for cirrhosis and liver cancer. This can be prevented by early detection and therapy.

Objective: To determine the prevalence of Hepatitis B surface Antigen (HBsAg) among apparently healthy individuals in Lagos, Nigeria.

Method: At a hepatitis awareness creation campaign in Lagos, apparently healthy individuals who consented were screened for HBsAg using rapid immunochromatographic (EIA) test kits.

Results: Out of the 327 volunteers screened, 175 (52%) were females while 157 (48%) were males. Their ages ranged from 17-70 years, with a median of 37 years. Majority (63%) were married, 36.1% were single, while 0.3% were either separated, single parents or widowed. Twenty seven (8.3%) tested positive to HBsAg and **the gender related prevalence of HBsAg was 37% in females and 63% in males (P>0.005). There was no statistically significant difference of HBsAg positivity between those who were married and single. The** age group between 20 – 29 years had the highest positivity (55.6%), followed by those of between 30 – 39 years and 40 – 49 years accounting for 25.9% and 14.8% respectively.

Conclusion: With this high prevalence in apparently healthy individuals, there is therefore an urgent need for more public enlightenment campaigns to screen for hepatitis status, for effective control and prevention.

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TH2OP03
Toxoplasma gondii infection in HIV/AIDS: prevalence and risk factors

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Background: Toxoplasmosis is an infection caused by the protozoan parasite *Toxoplasma gondii.* It is common in severely immune-compromised persons.

Objective: To determine the seroprevalence of *T. gondii* infection and the risk factors associated with the infection and investigate the association between *T. gondii* infection and CD4 cell count.

Methods: Sera collected from 242 HIV positive HAART- naïve patients were tested for *T. gondii* specific immunoglobulin G antibodies. Information was obtained using a structured questionnaire. Baseline CD4 cell counts were obtained from patients' case files. Data was managed using SPSS version 20 software and Microsoft Excel worksheet.

Results: One hundred and sixty eight (69.4%) were females while 74(30.6%) were males. One hundred (41.3%) of study participants were *Toxoplasma* IgG antibody positive. Thirty two (32) HIV positive pregnant women were among this group studied with 12(37.5%) being Toxo IgG antibody positive. *Toxoplasma* seropositivity was higher in females (71%) than in males (29%, P= 0.603). CD4 cell count level of < 200 was associated with *Toxoplasma* seropositivity than CD4 count 200 by logistic regression with a negative relationship (OR= 0.558; 95% CI 0.303-1.029; P= 0.062). Living in proximity with cat was positively associated with *T. gondii* infection (P= 0.013).

Conclusion: The study showed *T. gondii* infection in a good proportion of the pregnant women indicating greater probability of congenital transmission of *T. gondii*. This could form a basis for recommending intensifying health education and prophylactic treatment for all HIV positive pregnant women. Measures should be taken to prevent stray cats from entering homes.

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TH2OP04
Assessment of High Vaginal Swab (HVS) for *T. vaginalis* among pregnant women in four Local Government Areas in Lagos State.

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Objectives:
* To determine the a baseline data on the prevalence of *T. vaginalis* in HVS from pregnant women in four Local Government Areas in Lagos state using fresh wet mount microscopy.
* To determine at what trimester are pregnant women more prone to the *T. vaginalis* infection
* To determine the prevalence of *T. vaginalis* in relation to age group.

Methods: HVS were collected from five Primary Health Centres(Awoyaya, Ikosi, Ikate, Ogudu and Omolewa) selected from four Local Government Areas in Lagos state. They were examined microscopically using wet preparations. Their ages were collected.

Results: Out of the 136 pregnant women sampled, 15% (20) were positive with *Trichomonas vaginalis*. Ibeju Lekki had 6.7 % while 16.7%, 35.7% and 13.7% were recorded in Eti Osa, Kosofe and Ikosi Isheri respectively. 75% of the positive samples were recorded among the pregnant women in their third trimester while 25% was in their second trimester. The highest prevalence of 40% (8) was recorded among the age bracket of 31-35 while other age brackets 15-20, 21-25 and 26-30 had 25%, 15% and 20% respectively.

Conclusion: The prevalence of *Trichomonas vaginalis* is high in the areas studied. This poses public health implications especially considering the negative pregnancy outcomes that are associated with *T. vaginalis* and its recent role in facilitating the transmission of HIV. It is therefore recommended that HVS screening should be considered a routine in every antenatal visit so as to curb the spread of the disease. This study is however an ongoing work.

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TH2OP05
Late presentation and initiation of treatment are the leading causes of early deaths in PLHIVs

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Objectives: Sub-Saharan Africa bears the highest burden of HIV in the world. Early mortality is reported to be high notwithstanding improved access to antiretroviral treatment. This study is aimed at determining the clinical status at enrollment and causes of mortality among adult HIV patients after enrollment and the time to death following first clinic visit for treatment.

Methods: A retrospective review was done on the case record files of a cohort of HIV infected adult patients who died after enrollment for treatment at the HIV Clinic,

NIMR, Yaba, Lagos between 2008 and 2010. Their socio-demographic characteristics, baseline CD_4, WHO clinical staging at presentation, ARV status at death, cause of death, and time from enrollment to death were extracted and analysis was done with SPSS version 20.

Results: A total of 139 cases of mortality were reviewed and had a female preponderance (56.1%). The mean age was 37.2years and the age group of 31- 40 was most affected (46.8%). Most (67.6%) were married and 82% were employed. The mean CD_4 at presentation was $129.6cell/mm^3$ and majority (80.6%) of the cases were in the WHO clinical stages 3 and 4. The mean duration to death from presentation was 6.4months (Range: 0.07-53).Of the 139 deaths, 30.9% of the patients were commenced on ART before death. The leading cause of death was TB (58.2%).

Conclusions: Late presentation and initiation of treatment were the leading causes of death among the 139 deaths studied. Early identification of cases is recommended and delays in assessment and treatment initiation should be reduced in patients with advanced immunodeficiency.

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WE1PP01
IN-VITRO REVERSAL OF SICKLED ERYTHROCYTES BY HIGH K+ -ISOTONIC SOLUTIONS

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Background: Red cell sickling and adhesion are favoured by cellular dehydration, which increases the rate of hemoglobin polymerization and cell sickling. Potassium chloride co-transport and calcium-activated potassium channel (Gardos channel) mediate erythrocyte dehydration in sickle cell disease and β-thalassemia, but their role in vaso-modulation is less defined. We investigated the in-vitro effect of various concentration of K+ ion in physiological solutions (PSS) as well as in cocos nucifera water which is a natural drink known for its natural high potassium content and health benefits.

Methods: Erythrocytes from ten (10) sickle cell disease patients (SCD) patients. One part was treated with sodium metabisulphite (Na2S5O7) solution to induce maximum sickling as controls while the other parts were subjected to different high concentrations of K+ in PSS as well as cocos nucifera water (40mM, 80mM and cocos nucifera water -240m/M) respectively. A thin blood smear was made to ascertain the percentage sickled erythrocytes count before and after the treatment.

Results: Maximum percentage counts of sickled cells after the addition of Na2S5O7 (45%) were observed which decreased significantly ($P<0.05$ respectively) to about 2% with Cocos nucifera and 10% with80mM

K+ PSS. The count in 40mM K+PSS was not statistically significant.

Conclusion: We conclude that high potassium ion solutions can activate the rehydration of sickled erythrocytes by probably activating the Gardos channel to increase the mean corpuscular haemoglobin concentration(MCHC) and thereby restoring the normal red cell shape. We suggest a probable pharmacological value of the cocos nucifera water in SCD management as a natural drink.

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WE1PP02
Co-formulated Artemether and Lumefantrine exhibited clastogenic effects in a dose-dependent pattern in *Allium* root tip cells

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Background: Artemether/lumefantrine (ARL) is an Artemisinin-based combination therapy used for the treatment of malaria. Artemether has been reported to induce apoptosis and necrosis in human lymphocytes. Lumefantrine increases oxidative stress, induces cell apoptosis in response to DNA damage and arrests cell cycle in human T lymphocytes.

Objective: The clastogenic and mutagenic potential of co-formulated ARL was evaluated using the *Allium* model.

Methods: ARL syrup was constituted using deionised water. Bulbs were grown in different doses of ARL to determine the EC_{50}. Bulbs were then grown in ARL doses (EC_{50}, 50% $EC_{50}$and 25% EC_{50}) for 3hr (acute

phase), 6hr (Micronucleus [MCN] phase) and 48hr (chronic phase). Bulbs for the acute and MCN phases were transferred to tap water post-exposure to recover. Root tip samples were obtained serially for the acute (12, 24, 48hr), MCN (24, 44hr) and Chronic (48hr only) phases. Slides per dose (replicates=5) were prepared and 500-850 cells examined per slide.

Results: The EC_{50} for ARL was 16µg/ml. Mitotic index (2.0-5.2%) decreased with increasing dose at the acute (p=0.036), MCN (p=0.023) and chronic (p=0.716) phases. However, mitotic index increased by the 44-48hr sampling for the MCN (p=0.532) and acute (p=0.102) phases. Chromosomal aberrations increased in a dose-dependent pattern at the acute (p=0.052), MCN (p=0.0004) and Chronic (p=0.004) phases. Chromosomal aberrations decreased for most doses by the 44-48hr sampling in the acute (p=0.072) and MCN (p=0.564) phases. Chromosomal fragments (61.1%), bridges (21.8%), binucleate (12.8%) and micronucleated (2.1%) cells were observed.

Conclusion: ARL decreased mitosis dose-dependently but the effect appeared to resolve over time. ARL was shown to be highly clastogenic in onion root cells.

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WE1PP03
Artemisinin combination therapy containing dihydroartemisinin and piperaquine depressed mitosis and exhibited clastogenic effects in onion root tip cells

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Background: Artemisinin-based combination therapy is used for treatment of uncomplicated malaria in Nigeria. Dihydroartemisinin (DHA) was reported to arrest growth in the G_1 phase of hepatoma cell lines and disrupted the cell cycle at G_2/M in pancreatic cancer cell lines. No cytogenotoxicity effect has been reported for Piperaquine and it has been shown to be non-teratogenic in pregnant rats

Objective: The cytogenotoxicity of dihydroartemisinin and piperaquine phosphate (DHAP) was evaluated using *Allium* model to elucidate possible mechanism(s) of action.

Methods: DHAP syrup was constituted using deionised water. Bulbs were grown in varying doses of DHAP to determine the EC_{50}. Bulbs were then grown in DHAP doses (EC_{50}, 50% EC_{50}, 25% EC_{50}) for 3hr (acute phase), 6hr (micronucleus [MCN] phase) and 48hr (chronic phase). Bulbs for the acute and MCN phases were transferred to tap water post-exposure to recover. Root tip samples were obtained for the acute (12, 24, 48hr), MCN (24, 44hr) and Chronic (48hr) phases. Slides per dose (replicates=5) were prepared and 500-850 cells examined per slide.

Results: The EC_{50} for DHAP was 1µg/ml. Acute phase mitotic index (2.2-6.5%) differed significantly (p=0.024) only by the sampling times while at MCN phase it differed significantly (p=0.011) only by dose. Chromosomal aberrations (%) at acute phase fluctuated from 12-48hrs (p=0.060), increased significantly at MCN phase with increasing concentration (p=0.004) and increased at chronic phase (p=0.592). Chromosomal fragments (48.1%), bridges (31.8%), binucleate (13.2%) and micronucleated (6.2%) cells were observed.

Conclusion: Acute exposure to DHAP had transient effect on mitosis and the chromosomal aberrations while longer exposure depressed mitosis and increased aberrations in onion root cells. Clastogenic effects were observed.

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WE1PP04
Evidence of cytogenotoxicity of nevirapine observed in daughter cells of *Allium* root tips

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Background: Nevirapine (NVP) is a DNA-reactive antiretroviral drug. Thus concerns about DNA integrity persist because of its use by HIV-positive pregnant women and their newborn infants to prevent mother to child transmission of HIV. NVP has been reported to induce premature senescence and accumulate HeLa cells in G_1 phase.

Objective: We sought to elucidate the mechanism(s) of cytogenotoxicity of Nevirapine in *Allium* root tip cells exposed for varying periods and sampled serially.

Methods: NVP syrup (10mg/ml) was used. Onion bulbs were grown in NVP (2.7, 15, 30, 300µg/ml) to determine the EC_{50}. Bulbs were then grown in NVP doses (EC_{50}, 50% EC_{50} and 25% EC_{50}) for 3hr (acute phase), 6hr (Micronucleus [MCN] phase) and 48hr (chronic phase). Bulbs for the acute and MCN phases were transferred to tap water post-exposure to recover. Root tip samples were obtained serially for the acute (12, 24, 48hr), MCN (24, 44hr) and Chronic (48hr only) phases. Five slides per dose (replicates=5) were prepared and 500-850 cells examined per slide.

Results: The EC_{50} for NVP was 135µg/ml and mitotic index ranged from 2.7-5.3%. Changes in mitotic index at the acute and chronic phases were dose-independent and not significantly different. However, mitotic index (MI) at the MCN phase reduced significantly (p=0.028) with increasing dose. Changes in chromosomal aberrations (%) were dose-independent at the acute (p=0.060) and chronic (p=0.636) phases and differed significantly (p=0.005) at MCN phase. Consistent effect for NVP was only seen in samples taken 44-48hrs post-exposure, with MI decreasing and aberrations increasing. Chromosomal fragments (39%), bridges (31.7%), binucleate (24.4%) and micronucleate (2.4%) cells were observed.

Conclusion: A clear pattern of effects for NVP is seen only from the daughter cells indicating it impacts mostly cells in interphase.

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WE2PP01
HCV infection has no significant effect on liver and haematological disease progression among persons on HAART

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Background: Human immunodeficiency virus (HIV) and hepatitis C virus (HCV) co-infection a growing public health concern; estimated 30% co-infected out of global HIV

prevalence.

Objective: Determine effect of HCV on HIV co-infected patients on HAART to improve clinical management.

Methods: One-hundred HIV-1/HCV co-infected made up of 58 males, 42 females and 200 HIV-1; 85-males, 115-females on HAART were enrolled. Regimen was nevirapine-200mg/zidovudine/lamivudine-600mg, and tenofovir-300mg/emtricitabine-200mg/efavirenz-600mg for HIV-1 and HIV-1/HCV co-infected groups respectively. Baseline for alanine-transaminase (ALT), creatinine, haematology, CD4 and HIV-1 viral load (HIVL) were done; followed-up at 3 monthly intervals for 24 months. HCV viral load (HCVL) was done at baseline and 24 months, while HCV genotyping was determined.

Results: Insignificant difference (P>0.05) in ALT (21.3; 21.1 IU/L), creatinine (105.9; 110.1µmol/L), haemoglobin (11.3; 11.1g/dl), platelets (239 X103; 255 X103/µL), neutrophils (1.9 X103; 2.1 X103/µL) and lymphocytes (48.1; 47.7%) for the mono and co-infected groups. They were within normal range throughout the 24-month follow-up. HIVL dropped by 2.3 and 2.1 mean log RNA copies/ml for the HIV and HIV/HCV groups respectively. There was a mean CD4-cell count improvement of 263 and 305 cells/µl for the mono and co-infected respectively. HCVL dropped from 4.9 to 4.3 mean log IU/L from baseline to 24 month indicating partial HCV clearance. Genotypes were 1 (68.4%) and 4 (31.5%). No difference in treatment response was observed between these two genotypes.

Conclusion: No significant effect of HCV co-infection on liver and haematological disease progression including the immunological and virological treatment response among HIV patients on HAART.

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WE1PP02
Cervical squamous intraepithelial lesion and risk factors among HIV-infected Nigerian women

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Background: Though the effect of HIV infection, immunosuppression, ARV drug use and cervical cancers have been well established globally, only limited information exists on the subject in Nigeria with second largest global HIV burden.

Objective: To determine the effect of HIV infection and treatment on cervical squamous intraepithelial lesion in a large HIV treatment centre in Lagos.

Methods: Women enrolled in a large HIV treatment programme in Lagos were screened for cervical precancerous lesions using with pap smear after informed consent. Information of socio-demographic and reproductive characteristics were obtained during screening. Bivariate and multivariate logistic regression models were used to determine the effect of variables of CD4 count, viral load and ARV treatment on prevalence of cervical premalignant lesions.

Results: There was a 14.3% prevalence of cervical squamous intraepithelial lesion (SIL) and 0.4% prevalence of invasive cancer in the study population. Of the 76 women with SIL, 53(69.7%) had low grade squamous intraepithelial lesion (LSIL) and 23(30.3%) had high grade squamous intraepithelial lesion (HSIL). HIV positive women with CD4 cell count/mm3 < 200 were found to be 13 times at a greater risk of having HSIL than those with CD4 cell count above 200 cells/mm³ (OR: 13.9; 95% CI: 8.7-19.6). The use of antiretroviral drugs (OR: 0.6; 95% CI: 0.3-0.6) and having a HIV viral load < 1000 copies (OR: 2.5; 95% CI: 1.9- 6.9) was found to be protective against HSIL**.** The significant associations between HSIL, immunosuppression, use of ARV and viral load <1000 copies were retained after controlling for confounders in three different logistic regression models.

Conclusion: Precancerous lesion is common in HIV positive women and especially in those with severe immunosuppression and not on treatment. Increased access to HIV treatment has the potential to contribute to prevention and control of cervical cancer.

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WE2PP03
Selenium as adjunct to highly active antiretroviral therapy (HAART) in the management of Hepatitis B virus / HIV Co-infection: a randomized open label study.

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Background: With effective HIV treatment, people with HIV/HBV co-infection are living longer. Liver diseases caused by hepatitis B, such as liver cancer and liver failure are major concerns. HBV and HCV epidemiologic surveys showed an inverse association between selenium (Se) level and cancer incidence. Management of HBV/HIV disease is quite challenging and complex; hence, the best strategy for management of HBV/HIV co-infection is not yet defined.

Objective: This study assessed the effect of selenium as adjunct to HAART in management of HIV/HBV co-infection.

Methods: The study was a randomized open label clinical trial with participants randomly allocated into three treatment groups: HAART only, Se only and HAART + Se. HIV, HBV viral loads, CD4 cell count, and alanine aminotransaminase (ALT), were analyzed at baseline and 18th month of study. Data was analyzed using SPSS-5 v 11 software and level of significance taken as p 0.05.

Results: One hundred and forty-nine (149) consented HBV/HIV patients enrolled for study were followed up for 18 months. The rate of HBV clearance was higher for HAART + Se at 18th month than for HAART-only (p=0.046). The CD4 increment among HAART + Se group compared with HAART-only group was higher (p=0.133). On comparison of the baseline ALT and 18th month, there was a significant decline for HAART + Se (p=0.002) compared with HAART-only treatment group.

Conclusions: Selenium seems to have a protective effect on the liver cells and may be beneficial as adjunct to HAART in management of HIV/HBV co-infection.

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WE2PP04

First isolation of Helicobacter pylori from stool samples in Nigeria – A pilot study

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Introduction: The current trend in diagnosis of *H.pylori* infection is moving from invasive to non-invasive method. Lately, diagnosis of *H.pylori* from stool using stool antigen test (HpSA) was introduced. However, HpSA detects the antigen but no isolates. This pilot study attempts to culture *H.pylori* from stool of asymptomatic children.

Method: A total of 103 stool samples from asymptomatic children were analyzed. The Body Mass Index of these children was also determined. Briefly, the stool were screened with HpSA while the PBS homogenate were filtered using a membrane filter size- $0.45\mu m$. These (the membrane and filtrate) were cultured separately on Dent's medium microaerophilically for 3-14days using CampyGen gaspak. The isolates were then identified.

Results: From the 103 samples analyzed, 34(33.0%) were HpSA positive while 4(3.9%) yielded growth of *H.pylori*. Two of these culture positive samples were positive with HpSA. Two of the children with positive culture were underweight (BMI percentile of 2 and 0.4). The prevalence of *H.pylori* among asymptomatic children is 3.9% and 33.0% using culture and HpSA respectively.

Discussion: This pilot study has **doc**umented the first isolation of *H.pylori* from stool in this part of the world and revealed the prevalence of *H.pylori* infection in asymptomatic children as 3.9% using the Gold standard (culture). Arising from this study, it could be postulated that there could be correlation between *H.pylori infection* and low BMI (undergrowth) according to Oderda et al., 2000, more so that it has been documented that patients cured of *H. Pylori* infection gained weight.

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WE2PP05

HCV diagnosis by antibody detection and HCV-RNA in HIV-1 patients on HAART

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Background: Hepatitis C virus (HCV) diagnosis is fraught with false positives being reported and is best determined by presence of viral RNA. HCV has a long window period and may impact HIV management outcome, particularly by increasing risk of hepatotoxicity.

Objective: Compare 2 HCV diagnostic methods, the HCV antibody test (HCVAb); and the HCV-RNA quantitative and qualitative assays. This is aimed at determining importance of HCV-RNA confirmation before initiating HAART in HIV/HCV coinfected patients.

Methodology: Eighty-eight (88) HCVAb-positive HIV/HCV patients assayed by EIA technique (*DIAPRO,* Italy) were further analyzed by the HCV-RNA quantitative test (*COBAS Ampliprep/TaqMan*, Germany). Those that had viral titre, HCV qualitative test was carried out on them using the *COBAS Amplicor* analyzer and reagents. Differences in alanine aminotransferace (ALT) were monitored for a period of 12 months. A control group of 88 HIV-1 only (HCVAb negative) samples matched by age and sex were included to control for ALT.

Results: The 88 HIV/HCV patients (aged between 24-43 years, male 42; female 46) were assayed with the HCV-RNA viral load test. On that assay, only 19 (21.6%) had viral titre with a median viral load of 61,684 IU/mL. The remaining 69 (78.4%) had 'un-detected' results. All 19 had positive qualitative HCV-RNA. Mean ALT for the co-infected with detected RNA was 33.5 IU/L; un-detected RNA was 24.2 IU/L; and the control group was 28.1 IU/L. There was significant difference between the RNA-detected and un-detected co-infected groups (P=0.0000943).

Conclusions: These results show importance of HCV-RNA detection in monitoring HIV/HCV coinfected patients.

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WE2PP06

Effects of HIV drug treatment on the patterns of Cardiovascular Disease (CVD) in Lagos.

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Background: There have been increases in morbidity and mortality due to CVD. Thus the study was conducted to investigate the pattern of CVD on a cohort of HIV patients.

Method: A database review of a cohort of HIV infected adult patients that received medical care at a HIV treatment Centre, between 2004 and 2012, was reviewed. Only patients who developed Hypertension after the second visit to the clinic were recruited into the study. Analysis was done using SPSS version 20.

Results: 16% of patients were hypertensive after the third clinic visit. 87.4% of those diagnosed with hypertension were on ARVs , while 12.4% were not. 38.9% of the patients were on 3TC combination ARVs, 16.1% were on NVP. 42.8% of the patients were Females, while 35.9% were Males. Other co-morbidities included Elevated creatinine (10%) and elevated glucose (16%) amongst patients on ARVs, while elevated glucose (18%), Elevated creatinine (7%) amongst those not on ARVs.

Conclusion: There will be need to integrate treatment of Hypertension into HIV treatment centres for closer monitoring of patients. Further work needs to be done to establish whether there is a relationship between the drugs taken by the patients or the presence of HIV would lead to the development of Hypertension.

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TH3PP01
The health impact of flood disasters: a review

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Objective: This review focused on health impact of flood during and after the disaster.
Method: We undertook a comprehensive review of published literature to assess experiences and health impact of flood disaster on affected communities in different countries. Medline, PubMed, EMBASE, Global Health, Cochrane databases and reference lists of relevant publications were searched in September 2013.
Results: Consequences of flooding include destruction of roads, bridges, house, hospitals, famine, break in communications, displacement of victims and deaths. Interruption in basic infrastructures leads to poor waste disposal, insufficient supply or portable water and inadequate hygiene practices. There are recorded cases of measles, chicken pox, respiratory and soft tissue infections, dermatitis, diarrhea, malaria, dengue, conjunctivitis, norovirus infections and leptospirosis associated with flooding. These diseases are caused by pathogens endemic to the geographic region and in some cases are unprecedented. Non-infectious consequences of flooding include malnutrition, body pains, burn, injuries, mental and psychological problems and hypertension. Assembling internally displaced persons in unorganized camps promotes promiscuity and transmission of HIV/AIDS and sexually transmitted diseases. There is an increase in morbidity among venerable population. Impacts of flood disaster are reduced when adequate disaster management and post flood disease surveillance systems are in place.
Recommendation/Conclusions: Maintaining good surveillance system would help in monitoring the source and type of infection and identify non-infectious conditions during and after flood disasters. There should be adequate preparedness and responses including training and retraining of emergency response team. We recommend constant public orientation on disaster related diseases and disaster management plans aimed at identifying associated health impacts.
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TH4PP01
Knowledge and attitude of mothers towards their children eye health care at the General Hospital Shomolu, Lagos, Nigeria.

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This project was carried out to assess the knowledge and attitude of mothers attending Shomolu General Hospital Child Welfare Clinic towards their children Eye health care.
A cross sectional survey where 120 women with different socio-cultural background were interviewed using a self administered questionnaire.
30% of the participants were within ages 29-33 years. 64.9% had attained tertiary education. 98.3% recognise eye as an important body organ. 96.6% were aware of the importance of vitamin A Supplementation. 85% rated good vision as very important for their children. However, 39.2% and 35.8% do not know childhood blindness can occur early in child life and at birth respectively. 41.7% and 33.3% do not know putting breast milk in the eye of a child and applying 'tiro' a native eye pencil, to the eye lids affects eye health negatively, these regrettably however are traditional practices highly endemic in our society!. 77.5% erroneously belief a stretched out hand is the best place to beat a child while 45.8% correctly agree only below the waist is safe. 52.5% perceive children eye problems are due to medical reasons, 86.7% will treat at the Hospital, 8.3% in the chemist.
Both Knowledge and attitude of mothers towards their children eye health care were "good", this is quite encouraging as there is no substitute to good vision, especially for children. However, there is still need for National awareness programmes on children eye health care in order to educate Nigerians and prevent childhood blindness.
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TH4PP02
Assessment of knowledge and perception of probiotics among medical science students and practitioners in Lagos State

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Background: Probiotics are live organisms that confer health beneficial effects to the host when consumed in controlled and adequate amount. Their role as therapeutic agents for the prevention and management of gastrointestinal infections, allergic diseases and their anticancer potentials is globally recognized. There is a need to assess the level of knowledge among health professionals and students on the use of probiotics.
Aim: This study was conducted to assess the knowledge and perception of probiotic among medical science students and health practitioners in Lagos state.
Methods: This is a questionnaire based survey using a predesigned pilot tested tool. The questionnaires were randomly administered to 270 medical science students and professionals from various health institutes in Lagos state. It was distributed from March to August, 2013 and analyzed using Epi info version 3.5.3.
Results: Of the 270 questionnaires distributed, 265(98.1%) were returned by 164 medical science students and 101 practitioners. 94(57.3%) students disclosed that they have never heard of probiotics before and 139(84.8%) indicated interest in knowing more. 70(69.3%) practitioners were familiar with the term probiotics but 42(41.6%) had poor knowledge. 74(73.3%) were not aware of any proven probiotic product in Nigeria and none has prescribed probiotic products for any medical condition. All indicated interest in knowing more about probiotics.
Conclusion: There is limited knowledge and

poor perception on benefits of probiotic use among medical science students and professionals in Lagos state. The result of this study indicates a need for education on the availability, sources and benefits of probiotics.

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TH4PP03

The role of male circumcision in the spread of HIV infection in Southwest Nigeria

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Introduction: Male circumcision is recognized as an important intervention that can possibly reduce the risk of heterosexually acquired HIV infection in men by 60%.This study accessed the role of male circumcision in the spread of HIV infection in Southwest, Nigeria.

Methods: 992 respondents aged 12 - 60 who consented were randomly selected from NIMR HCT, Universities, Secondary Schools, participants at NIMR organized workshops. Each respondent completed a questionnaire to provide information on demography, knowledge of HIV status. Information on whether they were circumcised, at what age and the purpose were assessed and collated. Sexual behaviours and practice were ascertained which included number and types of sexual partners, knowledge and use of condom. These were collated and analyzed using EPI INFO 2002 software.

Results: Of the 992 respondents, 98.5% were single while 82% were Christians. Their age ranged between 10 - 60 years. About education, 37% and 44% had both secondary and tertiary education respectively. A total of 893 (90.02%) respondents were circumcised, (76.3% < 8 days old, 13.9% < 1year and 8.4%, 1-12 years). Out of 90.02% respondents who were circumcised at < 8 days, 52.6% were HIV positive; those circumcised at < 1 year, 7.5% of them were HIV positive and for those 1-12 years, 9.61%, were HIV positive. On condom use, 68.8% of the respondents use condom during sexual activities while 73% had one sexual partner.

Conclusion: From this study, male neonatal circumcision is common and may not be related with the spread of HIV in Southwest Nigeria.

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TH5PP01

Misconceptions of cause of cholera outbreaks in affected communities of four States in Nigeria

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Objective: Cholera remains a global threat to public health despite control efforts. It is a water- and food-borne disease with contaminated water being more common as the usual transmission route. This study described the knowledge and perception of the cause of cholera among populations in communities where cholera outbreaks occurred in Abia, Bauchi, Gombe and Oyo States, Nigeria between 2010 and 2013.

Methods: Semi-structured questionnaires were administered to consented 141 participants in the affected communities. Data were analysed using Statistical Package for Social Sciences (SPSS) package version 15.

Results: Over half (58.2%) of 141 respondents interviewed were females with an average age of 33.1 years and literacy level of 59.0%. Only 25.5% of respondents had access to safe and clean drinking water through the public water system compared to well (37.6%), river (24.8%) and packaged sachet water. Respondents' means of sewage disposal were: pit/latrine (56.7%); open field/bush (31.2%); and water closet (9.9%). Only 29.8% correctly mentioned contaminated water and food, and poor sanitation as transmission routes for cholera. Some (13.5%) had fatalistic beliefs about the cause of cholera and other misconceptions that included overcrowding, fever, and hot weather. Many (41.1%) however mentioned not knowing the cause of cholera. There was no significant gender and geographical difference in the misconceptions about the cause of cholera (p>0.05).

Conclusions: Results showed mixed reactions about the cause of cholera. The study provided insights for planning educational programmes through information, education and communication/behavioural change communication efforts to demystify cholera and boost knowledge on its actual cause in the communities.

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TH5PP02

Human resources and infrastructure in health research in Nigeria

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Objectives: Research is fundamental to informed decision making in all forms of human developments including tackling challenges of climate change on human health. This requires trained minds to collect, analyse, interpret and communicate data to inform choice of strategies, approaches and interventions. It is in light of this that this study was conducted to assess availability of manpower, conducive research environment and research output at the three levels of governance, from LGA to the Federal level.

Methods: A cross-sectional study of Federal Ministry of Health, States Ministries of Health, some tertiary health Institutions and Local Government Departments of Health was conducted in 6 randomly selected States of the country using semi-structured questionnaires and secondary data. Data were analysed using SPSS version 17.

Results: Results showed lack of adequate personnel and needed infrastructure and skills for research at some levels of governance with routine care and support services deterring senior health workers from engaging in research. Of the 40 institutions visited, only 25.0% had research unit while 2.5% actually conducted research. Good oversight of health research conduct was lacking.

Conclusions: The study provides evidence suitable as advocacy tool for support at different tiers of governance for conducive research environment with conscious effort at recruiting skilled personnel to generate timely data of research output for informed health

care delivery.

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TH5PP03

Outcome and challenges of implementing HIV prevention among most at risk population in Lagos

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Background: Men that have sex with men and commercial sex workers are among the leading drivers of HIV transmission in the country. Effort at controlling the epidemic needs to specifically target this high risk group**.** To this end several programs were initiated which included HIV prevention as a significant strategy for HIV reduction
Objective: To promote HIV knowledge and condom use among Most At Risk Person
Method: A team of 16 trained HIV prevention communicators worked in 2 groups in the community twice a week over a period of 3 months. Brothel sites were selected using purposive sampling method, while the MSM participants were selected using the snowballing method. Advocacy meetings were held with 6 brothel managers and key opinion leaders of MSM group. Baseline questionnaire were administered among participants to assess knowledge level on HIV. This assisted in selecting suitable prevention strategies within the Minimum Prevention Package Intervention [MPPI]. Participants were reached in small groups on three consecutive occasions with correct knowledge of HIV, vulnerability issues, and Risk reduction practices. Post test questionnaires were administered on the participants after implementation.

Result: 106 MSM and 166 FSW were reached .Their mean ages were 24.1 and 23.3years respectively. 92(86.8 %) of the MSM were bisexual while 14 (13.2%) were strictly homosexual. Analysis of the responses showed that while 70 (66.04%) had little or no knowledge of HIV prevention and risk reduction practices before the intervention, 103 (97.17%) had an improved knowledge at post intervention (P<0.005). Pre intervention, while only 56.6 % (60) had used condoms in the last sexual intercourse, 30 (28.3%) used lubricant these increased to 88(83.01%) and 42(39.6) respectively post intervention.75 (70.8%) MSM had HCT of which 8(7.5%) tested positive preintevention, 26 presented at the clinic for HCT; of which all tested positive. Among the FSW, 90(54.2%) had little or no knowledge of HIV prevention and risk reduction practices in the pre-intervention compared to 162(97.6%) post intervention (P<0.05). Condom use was higher in the FSW 85.5% (142) compared to MSM at baseline. 25(15.06%) FSW had HCT of which 3(1.8%) were HIV positive. Female condom was not acceptable by FSW as it is distracting and takes time to apply. The major challenge of implementing the programme is security of communicators and accesses to the MARPS.
Conclusion: The proportion of HIV positives among MSM can fuel HIV incidence as majority practise heterosexual sex as well. There is need to educate FSW on harmful practices.

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TH5PP04

Community practices against mosquito bites among care-givers of under-five children in Somolu local government, Lagos state

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Background: Malaria attacks are more frequent in children under five years who lack the protective immunity, and are therefore more likely to suffer from severe malaria and to die from the disease, there should be an effective measure to protect them against mosquito bites. Here, knowledge, attitude and practices of the mothers of these under five children were evaluated as regards malaria and mosquito bite prevention.
Objective: To assess the knowledge of mothers of under five children on the causes, signs and symptoms of malaria and to explore the acceptability of LLINs, factors governing LLINs ownership and use.
Method: Data from Somolu Local Government were gathered using a household survey and a two-stage cluster sample design. The Local Government was stratified based on planning and drainage observed across it. Individual interviews given to each household included questions on socio-economic status, education, housing type, water source, rubbish disposal, mosquito-prevention practices and knowledge of mosquitoes.
Result: Of the 439 mothers interviewed, only 1.8% listed the cause of malaria as the malaria parasite; however, 9.3% mentioned drinking dirty water as the cause, about 58% reported that mosquito bites transmit malaria, about 57% said that the sign of malaria is raised body temperature. Of the 326 that have LLINs, 72.1% had their child sleep under the net the night before the survey as compared with the Post LLINs mass campaign survey conducted in 2012 which showed 17% net utilization rate.
Conclusion: Malaria was perceived as the main health problem among children. The massive increase in LLIN usage has a direct impact/effect on the morbidity rate in the study environment as most of the mothers had none or one clinical malaria case per year.

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TH5PP05

Survey and Mapping of leading causes of childhood mortality in Northern Nigeria from 2005-2009

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Background: *Although analyses of recent trends show that Nigeria is making progress in cutting down infant and under-five mortality rates, the pace still remains too slow to achieve the United Nations (UN) Millennium Development Goals of reducing child mortality by a third by 2015 and according to UNICEF*, Nigeria loses about 2,300 under-five year olds daily. *Childhood mortality is important indicator of the development level of a society hence the need to ascertain the leading causes of mortality and provide necessary intervention.*
Objective: To estimate the leading causes and factors associated with childhood mortality in Northern Nigeria.

Method: Stratified and random sampling techniques were used to carry out retrospective cross sectional survey in Sokoto, Borno and Plateau states, Nigeria. Questionnaires were administered to provide estimates of child mortality and their problems during the neonatal period. **Data analysis was** *done using SPSS.*

Results: 532 questionnaires were surveyed from the 3 states. The death distribution showed that communicable diseases were the leading cause of death. There was gender disparity as the boys' death had higher frequency. There were less death in the neonates compared with those that are 28 days and above in age; with neonatal sepsis and birth asphyxia featuring as the main problems of neonatal period.

Conclusion: From this study, communicable diseases particularly diarrhoea and respiratory infections were leading causes of mortality. Adequate access to treatment continues to be the major approach to prevent childhood mortality; effective maternal and neonatal care will prevent the main causes of neonatal deaths.

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TH5PP06

Confounders of Immune response to Measles Immunization in Developing Countries: A Systemic Review.

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Background: The effectiveness of vaccination against measles that is a major cause of vaccine preventable disease in developing countries can be compromised by many confounding factors. These factors had caused measles vaccine failure which has become a major concern in the tropics. The failure has led to high transmission of measles despite high immunization coverage with one dose measles vaccine. This review was aimed at evaluating the magnitude of the confounding factors and possibly proffer solution on how they can be reduced or eliminated in our setting.

Method: We reviewed literature in the medline database and selected articles for our analysis that quantitatively described the confounding factors.

Findings: The literature review showed the prevalence of the confounding factors contributing to vaccine failure in developing countries such as Nigeria to include the following: low vaccine potency, cold chain failure, inadequate viral dose, persistence of maternal antibody beyond 12 months, malnutrition, IgG avidity, HIV-1, malaria, vaccine of different strains, poor handling of vaccine by health workers, concurrent or subsequent infections to measles vaccination.

Conclusion: To achieve the goal of Immunization in our environment, interventions are needed which include: 1. Use of quality vaccine that is highly stable as used elsewhere. 2. Continuous upgrading of cold-chain facilities in the vaccination centres. 3. Retraining of personnel involved in vaccination 4.Booster doses of vaccine for children with low sero-conversion especially with HIV-1 infection.

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