NIGERIAN INSTITUTE OF MEDICAL RESEARCH

3RD International Scientific Conference

BOOK OF ABSTRACTS

5th - 8th November 2012.
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Track 6: Immunology, Epidemiology and Basic sciences
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Wednesday 7th November 2012

WE1OP01

Reduction in Tuberculosis Treatment Default Rate Using PDSA Strategy in a DOTS Centre in Lagos, Nigeria.

Oke B.O., Oladele D.A., Onwujekwe D.I., David A.N., Gab-Okafor C.V., Ezeobi P. M., Adu R.A., Ekama S.O., Herbertson E.C., Nwosu R.O., Ajayi A.O., Oba A. A., Austin-Akaigwe P.C., Okoli L.C, Ezechi O.C.
Clinical Science Division, Nigerian Institute of Medical Research

Background: Tuberculosis (TB) has continued to be a major public health problem globally. It remains a foremost public health problem in Nigeria, with this burden further compounded by the emergence of multi-drug resistant tuberculosis (MDR-TB). TB treatment default is the leading cause of MDR-TB; hence the World Health Organization stipulates that the TB treatment default rate should not exceed 8%. Therefore the default rate of 13.8% observed at the **Nigerian Institute of Medical Research/AIDS Prevention Initiative** (NIMR/ APIN) **DOTS centre** is unacceptable and warrants urgent intervention.

Objective: To reduce the TB treatment default rate at the NIMR/APIN DOTs clinic from 13.8% to < 8% within 6 months.

Methods: An operational research by quality improvement intervention, undertaken to identify the root cause of TB treatment default using the tree diagram. Improvement matrix was done and potential solutions were monitored by process indicators to arrive at the goal of reducing TB treatment default rate.

Results: The root causes of TB treatment default at the centre were identified as lack of standard counselling and clerking templates, as well as inadequate training of DOTs officers.
A total of 150 patients have been registered for TB treatment from June 2012 at the beginning of the intervention till date. 130 (86%) and 20 (13.3%) patients were commenced on category 1 and 2 TB treatment respectively. Process indicator score was 90% for patients that were counselled and signed the treatment counselling slip developed for the intervention. After 5 months of quality improvement intervention, 3 (2%) patients on the category 1 treatment schedule have defaulted TB treatment.

Conclusion: The root cause of TB treatment default having been identified with some intervention put in place, has led to a reduction in TB treatment default rate from 13.8% to 2% at the moment in the centre.

WE1OP02

First line antiretroviral treatment failure and associated risk factors among adult Nigerian living with HIV/AIDS.

Musa AZ, Ezechi OC, Bamgboye EA, Audu RA, David AN, Nwogbe AO, Kalejaiye OO, Gbajabiamila TA, Ezeobi PM, Ohwodo H, Oladele D, Adu RA, Oke B, Gab-Okafor CV, Odubela O, Somefun EO Herbertson EC, Ekama SO , Salu OB, Onwujekwe DI, Odunkwe NN, Idigbe EO, Ujah IA
Clinical Science Division, Nigerian Institute of Medical Research

Background: Second line antiretroviral treatment is not only expensive but associated with high pill burden and side effect profile. Effective prevention strategy requires knowledge of the burden of first line failure and associated factors.

Objective: To determine the incidence and predictors of first line antiretroviral treatment failures (FTF) among Adult patients in a large HIV treatment centre in Lagos, Nigeria.

Methods: The incidence and risk factors of FTF were investigated in a cohort of HIV positive adult Nigerians enrolled in a HIV treatment programme between 2006-2010 and follow up for 60 months. Incidence and risk factors were determined using univariate analysis and Cox models.

Results: Of the 12971 total patients enrolled into the programme, 4792(37%) met the inclusion criteria and were included in the analysis. 602 (12.6%) of the 4792 patients were confirmed FTF using viral load. The predictors of FTF include: age group 21-30(Adjusted Hazard Ratio (AHR) 0.001: 95% CI 0.214-0.661), blood transfusion (AHR 1.4; 95% CI, 1.0–2.0), CD4 Count <200 (AHR, 0.02:95%CI 0.50-0.943), Tb co-infection at enrolment (AHR 0.699: 95% CI, 0.56-0.873) and initiation of therapy in 2009 (AHR 0.0001, 95% C.I 0.431-0.752)

Conclusion: FTF was found to be high at 12.6% among the cohort studied and found to be independently associated with Tb co-infection at enrolment , age 21-30 years, CD4<200 cells/µl, and receipt of blood transfusion. While there is an urgent need to make provision for 2nd line treatment, more effort should be directed at early case identification and prompt treatment of Tb co-infection.

WE1OP03

Comparative Characterization of Mycobacteria Isolates Using Conventional and Molecular Methods

*[2]Nwadike P.O., [2]Onubogu C. C., [1]Coker A.O., [2]Nwokoye N. N, [2]Onyejepu N., [2]Nshiogu M. E., [3]Anyadoh-Nwadike S.O., [2]Idigbe E. O.
[1]Department of Medical Microbiology, University of Lagos, Nigeria, [2]Tuberculosis Reference Laboratory, Nigeria Institute for Medical Research Yaba, Lagos State, Nigeria; [3]Department of Biotechnology, Federal University of Technology, Owerri, Imo . State, Nigeria.
Email: petrousbone@yahoo.com. **+**2348036306948

Background: *Globally the burden of Tuberculosis (TB) has been on the increase, especially in developing countries and Nigeria inclusive. Successful treatment of TB disease depends largely on identifying the bacilli and treating with the correct drugs as Non-Tuberculous Mycobacterium does not respond to Mycobacterium tuberculosis regimen.*

Objective: To evaluate the effectiveness of Geno Type *Mycobacterium* CM in identifying *Mycobacterium species*

Methods: Sputum samples from 1867 TB suspects attending the TB DOTS clinic of the Nigerian Institute of Medical Research (NIMR), Lagos between Febuary and August, 2011 were processed by Ziehl Nelson (ZN) smear microscopy at the National TB Reference Laboratory, NIMR. Smear positive samples were cultured on Lowenstein-Jensen (LJ) medium. *Mycobacterial* isolates obtained were characterized and identified by molecular (Geno Type *Mycobacterium* CM) method, using the conventional biochemical method as gold standard.

Results: Out of 95 smear positive sample cultured, 57 (60%) were *Mycobacterial species* isolates with contamination rate of 3.2%. Specie identification with Geno Type *Mycobacterium* CM was possible for 45 (78.9%) isolates while conventional methods were able to identify 41 (71.9%) to specie level, with 10 (17.5%) inconclusive identification. Among the identified *Mycobacterial Species* were *M. tuberculosis complex*, *M.fortuitum*, *M.abscessus*, *M.immunogenum*, *M.intracellulare*, *M.gardinae* and *M.scrofulaccum*. Turn around time for molecular and biochemical methods were 8 hours and 10 days respectively.

Conclusion: The data above suggest that Geno Type *Mycobacterium* CM is a veritable tool with high specificity for identifying *Mycobacterium* isolates to specie level over the conventional methods.

WE1OP04

Strategies for effective management of challenges faced by Volunteer Home Based Care givers- The NIMR experience.

Amusan-Ikpa SK ,Idigbe IE, Musa Z, Ajani AM
1 Clinical Sciences Division, Nigerian Institute of Medical Research, Yaba, Lagos, Nigeria.

Background: Home Based Care services serve as a bridge between the facility and the home in HIV programs. The care givers provide care and support from diagnosis to end of life care to people living with HIV/ AIDS. However providing care by HIV positive volunteer HB Caregivers is both stressful and distressing. The care givers have the duty of providing basic nursing care, counselling to sick clients in their homes, as well as performing other duties which usually increase their vulnerability to infection with other viruses like hepatitis as well as exposure to Tuberculosis .Here we look at the challenges faced by these caregivers and their coping strategies.
Objectives: To evaluate the challenges faced by HIV positive Volunteer Home Based caregivers and present strategies successfully employed by them in performing their duties.

Methods: The study utilized direct interactions and observation of thirty five consenting HIV positive Volunteer Home Based caregivers recruited from NIMR Support group , over a two year period . This method was guided by the See-Try- Observe-Continue (STOC) model used by AIDS Relief and adopted from the Institute for Health Improvement's Plan-Study-Act Cycle.

Results: From the study, stress/ fatigue are the major challenges (62.9%) faced by caregivers. This was as a result of so much work to be done by too few volunteers.(34.3%)experienced depression while taking care of sick clients particularly in events of the death of the clients. Some of the young female volunteers (28.6%) reported harassment from the patients and relatives. Using the stock model we implemented these strategies: Increasing number of volunteers to reduce work load, pairing female volunteers for visits, Socializing with other PLWA and counselling were major coping strategies.

Conclusion: Post evaluation conducted one year after Strategies were introduced, saw a relative drop in challenges experienced by volunteers. Continuous effective counselling was recommended for caregivers and HBC Support groups to meet the needs volunteer Caregivers.

Wednesday 7th November 2012

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WE1OP05

Choice of Initial Combination Anti-retroviral Regimen in Treatment-Naive HIV Infected Individuals

Gab-Okafor C[1], Oke D[1], Oladele D[1], Ohwodo H[1], Kalejaiye O[1], Gabjabiamila T[1], Ezeobi P[1], Adu R[1], Wapmuk A[1], Aghahowa E[1], Odubela O[1], Herbertson E[1], Ekama S[1], Musa Z[1], Onwujekwe D[1], Odunukwe N[1], David A[1], Iwuora J[1], Ezechi O[1], Idigbe O[2], Ujah I[1]
1: Clinical Sciences Division, Nigerian Institute of Medical Research
2: Microbiology Division, Nigerian Institute of Medical Research

Background: Optimization of initial highly active antiretroviral therapy(HAART) for complete viral suppression and better tolerability is paramount for the prognosis of HIV infected patients.

Objective: The aim is to determine the outcome and factors influencing the choice of initial combination antiretroviral drugs in the treatment naïve HIV patients.

Methods: The outcome and factors influencing the choice of initial antiretroviral drugs were investigated in HIV infected treatment naïve individuals in a large HIV treatment centre using a cross-sectional.

Results: 432 patients were analyzed(mean age 38 years±9.010), 67.6% females, 50.1% prior AIDS. Mean CD4 cells and HIV RNA were 146cells/mm^3 and 194312 copies/ml respectively. Zidovudine-lamivudine-Nevirapine regimen(ZDV-3TC-NVP) was prescribed in 34.3%, followed by Tenofovir-Emtricitabine-EFavirenz(TDF-FTC-EFV)26.9%, TDF-FTC-NVP(17.6%), TDF-3TC-NVP(8%), ZDV-3TC-EFV(4.6%), Abacavir(ABC)-3TC-EFV(3.7%), ABC-3TC-NVP(2.8%). Compared with TDF-3TC-NVP, starting TDF-FTC-EFV was mainly associated in multivariate analysis with reduced pill burden(P<0.001), and HIV RNA copies >200,000copies/ml(P=0.0015). TDF-3TC-NVP and TDF-3TC-ZDV-Atazanavir(ATV)-Ritonavir(RTV) were more likely in patients with drug substitution and switch programs respectively(P<0.001),(P<0.001).ABC-3TC-EFV was more likely in patients with deranged creatinine levels(P=0.002). At 6months and 12 months, 364(84.3%) and 392(90.7%) achieved virologic suppression respectively(HIVRNA copies<200 copies/ml). Cd4 cells increased by 138cells/mm^3 and 198cells/mm^3 at 6 months and 12 months respectively. Virologic suppression was more likely with TDF-FTC-EFV(93.7%) while CD4 cells increase was higher with ZDV-3TC-NVP. The 2 most common often prescribed regimens TDF-FTC-EFV and ZDV-3TC-NVP had virologic response rates of 93.7% and 84.2%(P<0.001).

Conclusion: Durable suppression of HIV therefore depends on the use of potent, well tolerated antiretroviral regimens to which patients can easily adhere.

WE1OP06

A cohort analysis of pharmacy refill data as a measure of adherence to antiretroviral drugs and virologic outcome.

Ekama SO, Herbertson EC, Addeh EJ, Musa AZ, Nwogbe AO ,Kalejaiye O, Oladele D, Ezeobi PM, Gbajabiamila T, Adu RA, Gab-Okafor CV, Oke B, Ohwodo H,Odubela O , Wapmuk A, Aghahowa E,Oba A, Onwujekwe, Audu RA, Onwuamah C, Salu OB, David AN, Odunukwe NN, Ezechi OC.
Clinical Science Division, Nigerian Institute of Medical Research

Background: Achieving adherence of ⩾95% is necessary for sustained virological suppression while on therapy. Antiretroviral (ARV) therapy is successful if a patient is able to achieve virologic suppression below limit of detection after a given period.

Objective: To determine the relationship between adherence and viral suppression using pharmacy refill records.

Methods: A cohort of 181 ARV naive patients that were commenced on HAART, between February to March 2009 were selected and baseline viral load were determined. Adherence was monitored for 48weeks and the viral load also determined at the end of this period. Viral suppression was defined as having HIV-1 RNA <200 copies after 48weeks . Bivariate analysis and logistic regression model were used to determine the percentage that achieved and predictors of viral suppression respectively.

Results: 146(80.6%) patients had ⩾95% adherence, 25(13.8%) had 80-94% adherence, while 10(5.5%) had < 80% adherence. 155(85.6%) patients achieved viral suppression at 48 weeks. Only adherence ⩾95% was a predictor of viral suppression with odds ratio of (0.033, 95% CI 0.006-0.180) and a significant p<0.0001.

Conclusion: A significant number of patients (80.7%) that had ⩾95% adherence to pharmacy refills achieved viral suppression at 48 weeks. Adherence to pharmacy refills is a reliable measure of adherence.

WE2OP07

Impact of Nutritional Status on Host Immune Response and Malaria Outcomes among *Plasmodium falciparum* Infected Patients Living in a Holoendemic Semi-Urban Area of Nigeria.

[1]**Ajibaye O,** [3]Osuntoki AA, [1]Orok B, [1]Iwalokun BA, [1]Egbuna KN, [1]Olukosi YA, [1]Aina OO, [1] Okoh HI, [1]Agomo CO, [1] Enya VNV, [1]Akindele S, [2]Faneye OA, [1]Akinyele M, and [1]Akinnibosun OA
1. Biochemistry & Nutrition Division, Nigerian Institute of Medical Research, Yaba, Lagos, Nigeria.

Background: In malaria endemic regions, malnutrition has also been reported to be a public health problem. Given the fact that the pattern of host innate immunity mediated by pro-inflammatory cytokines is critical in determining malaria outcomes, understanding the impact of malnutrition on innate immune response in *Plasmodium falciparum* (Pf) infected patients is very important for malaria control.
Objective: To determine nutritional status and evaluate the influence of malnutrition on innate immune response among Pf infected patients in Lagos, Nigeria.

Methods: Volunteers (307) with a history of fever were screened microscopically for *P.f* in a cross-sectional study at IJEDE GH. Body mass index (BMI) of patients was determined as a measure of nutritional status and BMI < 18.5 kg/m2 was taken as an index of malnutrition. TNF-á, Interlukin-1â & Interlukin-12 were determined by ELISA and Total Protein spectrophotometrically. Statistical analysis was done using SPSS Version 17. Study protocol was approved by NIMR IRB.

Results: A total of 64 patients comprising of 47% males and 53% females with a median age of 10 years were recruited. Mean BMI was 18.19±6.10. Malaria rate was 20.85% and malnutrition rate 62.5%. TNF-á was associated with age and higher in < 5 yrs (P= 0.001). Mean levels of TNF-á, Interlukin-1â & Interlukin-12 were significantly lower in underweight patients P<0.05. There was no significant relationship between fever and MPD (P> 0.05) in both age groups and Total Protein values resulted in lower MPD in both age groups (P=0.009).

Conclusion: This preliminary investigation suggests that nutritional status modulates malaria outcomes and pattern of progression in all ages.

WE2OP08

Site Characterization for Impact Assessment of Malaria Control Interventions: The Ibeshe Experience.

Oluwagbemiga O. Aina‡, Chimere O. Agomo, Yetunde A. Olukosi, Hilary I. Okoh, Kathleen N. Egbuna, Bamidele A. Iwalokun, Akwaowo B. Orok, Olusola Ajibaye, Veronica N. V. Enya, Samuel K. Akindele, Margaret O. Akinyele, A. G Mafe, Philip U. Agomo.
Nigerian Institute of Medical Research, Yaba.; ‡Presenting Author: **Oluwagbemiga O. Aina**

Background: Site characterization is a key perquisite for impact assessment of malaria control, it is also useful to determine the suitability for drug and vaccine trials. Key elements of site characterization include malariometric indices which is identification of baseline vector and parasite species, obtaining baseline information on community characteristics and the knowledge, attitude and practice (KAP) of the people in community in relation to malaria infection and control in the area.

Objectives: To determine the malaria prevalence, transmission indices and people perception on malaria control.

Method: A total of 1489 participants were screened for malaria and anaemia in 10 villages in Ibeshe community, Ikorodu L.G.A, Lagos State. Semi-Structured questionnaires were used to capture information on participant's demographics and KAP towards malaria.

Result: Ibeshe community is mesoendemic for malaria with a community prevalence rate of 14.7%. *Plasmodium falciparum* was the predominant parasite accounting for >93% of all the malaria cases. The mean ± SEM parasite density was 2211.6 ± 1272.2 per µl of blood. The mean± SD body temperature of participants with fever was 40 ± 2.7°C. The proportion with anaemia (18.1%) was low in the community. Almost all the participant (95.8%) identified mosquito bite as a cause of malaria, although multiple agents were attributed to cause of the disease. The common symptoms associated with malaria were by hot body (89.9%), headache (84.9%), refusal to eat (77.3%) and body ache (77.0%). The use of long lasting insecticide net was low (29.6%), with most participants (77.0%) preferred to use only window nets.

Conclusion: Malaria in Ibeshe community is mesoendemic during the dry season and the participants had good knowledge of the symptoms associated with malaria.

WE2OP09
Lack of Evidence for the Re-emergence of Chloroquine-Sensitive Falciparum Malaria in Lagos, South-Western Nigeria

Oyebola MK[1,2], Ajibaye O[1], Iwalokun BA[1], Aina OO[1], Okoh HI[1], Agomo CO[1], Orok AB[1], Akindele S[1], Akinyele M[1]; Agomo, PU and Olukosi YA[1].
[1]Malaria Research Unit, Biochemistry and Nutrition Division, Nigeria Institute of Medical Research, Yaba, Lagos, Nigeria
[2]Parasitology and Bioinformatics Unit, Department of Zoology, University of Lagos, Nigeria

Background: A reported recovery in chloroquine efficacy following a period of discontinuity in use has raised the possibility of re-introducing chloroquine for malaria treatment. There remains a shortage of information on the existing prevalence of the resistance markers of chloroquine following the removal of drug pressure in Nigeria. This study determined the distribution and frequencies of chloroquine resistance alleles of *P. falciparum* chloroquine resistance transporter (*pfcrt*) and multi-drug resistance type 1 (*pfmdr*-1) genes among parasite isolates from Lagos.

Methods: The study was conducted at Lekki and Ijede communities in Lagos, Nigeria from December 2008 to April, 2010. Finger prick blood samples were collected from which thick as well as thin blood films were prepared **and parasite DNA extracted**. The detection of mutations of *pfcrt* and *pfmdr1* genes was performed using mutation-specific nested PCR and restriction fragment length polymorphism (PCR-RFLP).

Results: Of the 1818 individuals screened at the two selected healthcare centres, 414 and ***397 samples*** were typed for the ***molecular detection of pfcrt and pfmdr1 mutations respectively.*** The *pfcrt K*76T and the *pfmdr1* N86Y mutant alleles were present in ≈75% and ≈ 34% respectively. There were higher frequencies of the *pfcrt* and *pfmdr1* mutant alleles in Ijede than in Lekki (84% and 34%; 60% and 26% respectively). The frequencies of *pfcrt* mutant alleles in the two parasite populations fit expected frequencies in Hardy-Weinberg equilibrium. Significant associations were found between the *pfcrt* and *pfmdr1* alleles and coefficients of inbreeding relative to the subpopulations were 0.78 and 0.76 for parasites carrying *pfcrt* and *pfmdr1* respectively.

Conclusion: The high frequencies of *pfcrt K*76T and *pfmdr1* mutations in the study locations are consistent with continuing inefficacy of chloroquine as an antimalarial drug.

WE2OP010

Repellent Activities of Essential Oils from Ten Nigerian Plants Against *Anopheles gambiae and Aedes aegypti.*

Hilary, I. Okoh
Nigerian Institute of medical Research; University of Lagos

Background: Repellency plays an important role in preventing vector-borne diseases by reducing human -vector contact. DEET, (N, N – diethyl – 3 – methylbenzamide) is the active ingredient in most common mosquito-repellent formulations. The efficacy of DEET in providing long-lasting repellency against a wide variety of mosquito species has been documented in several studies, but there are concerns associated with its use. In order to address these challenges, there has been an increasing search for more environmentally safer but effective repellents. In this search, natural products of plant origin are increasingly being considered.

Objectives: (i). To evaluate the repellent activities of essential oils from local plants against *Anopheles gambiae* and *Aedes aegypti* adults; (ii). To identify the active repellent compounds in the test oils by Gas Chromatography – Mass Spectrophotometer (GC-MS).

Method: An ethno - botanical survey was conducted in four geo – political zones in Nigeria between March and October, 2007 using structured questionnaires and focus group discussions. A total of 46 plants were mentioned as having repellent activity. The ten most mentioned plants were selected for the study. **Essential oils were extracted from 500g of pulverized air-dried parts from each of the selected test plant materials by hydro-distillation in a Clavenger apparatus using standard method. The repellent effect of the oils was evaluated using** *Anopheles gambiae* and *Aedes aegypti* adults **and following established criterion for testing repellency. The commercially available repellent, Odomos, was used as control.** Gas - Chromatography - Mass Spectrophotometry analysis were conducted on the **three most effective essential oils** to identify the active repellent compounds.

Results: The repellency of the three most effective test oils (*Hyptis suaveolens*, *Lantana camara*, and *Ageratum conyzoides*) was comparable to that of Odomos. The average protection time for *Hyptis suaveolens* oil was 2 hours, 27 minutes against *Anopheles gambiae* and 1 hour, 32 minutes against *Aedes aegypti*. *Lantana camara* oil had a protection time of 1 hour, 36 minutes against *Anopheles gambiae* and 57 minutes against *Aedes aegypti* while *Ageratum conyzoides* oil had 26 minutes protection time against *Anopheles gambiae* and 14 minutes against *Aedes aegypti*. Odomos gave an average protection time of 2 hours, 41 minutes against *Anopheles gambiae* and 5 hours, 49 minutes against *Aedes aegypti*. Gas Chromatography – Mass Spectrophotometry (GC-MS) analysis of the three oils showed a range of compounds including Apiol, Oleic acid, Limonene and Carophyllene.

Conclusion: Oleic acid and Carophyllene were the predominant compounds in the three essential oils. There is need for further investigations on these two compounds as they may constitute potential repellent candidates against a range of mosquito species.

WE2OP011

The Effect of Long Lasting Insecticide Nets (LLINs) on Malaria Parasitaemia among Pregnant Women: The Role of Occupation and Educatonal Status

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Objectives: A study to determine the role of occupation and educational status on the effectiveness of Long Lasting Insecticide Nets (LLINs) in reducing malaria parasitemia among pregnant women attending antenatal clinics was conducted in Obio –Akpor Local Government Area, Rivers State, Nigeria.

Methods: Thick and thin blood films were made and stained using parasitological standard procedures to identify malaria parasites. Questionnaires were distributed to collect personal data from the pregnant women and a total of 400 pregnant women were examined in this study.

Results: According to occupation, malaria parasitemia rates for housewives, farmers, students, businesswomen and civil servants were 66.7%, 57.1%, 11.8%, 15.2% and 14.3% respectively. Housewives, farmers, students, businesswomen and civil servants who used LLINs had prevalence rates of 30.8%, 33.3%, 4.9%, 5.8% and 7.5% respectively while those that did not use LLINs had prevalence rates of 96%, 100%, 60%, 81.8% and 76.9% respectively ($P<0.05$). According to educational status, malaria parasitemia rates for pregnant women who had primary, secondary and tertiary education were 61.1%, 26.1% and 10% respectively. Pregnant women with primary, secondary and tertiary education who used LLINs had prevalence rates of 50%, 4.5% and 2.5% respectively while those who did not use LLINs had prevalence rates of 96.5%, 86.4% and 25% respectively ($P<0.05$).

Conclusion: This study observed a significant impact of educational level and occupation on malaria parasitemia among the pregnant women examined.

WE2OP12

Data Management Protocols for Indoor Residual Spraying in Central Nigeria.

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Background: In Nigeria, the national malaria control program stated IRS as one of its strategic focus in vector control as a way to protect the most at-risk or vulnerable population such as infants, children under the age of 5 as well as pregnant women from the malaria scourge.

WEPP01

HAEMATOLOGICAL PROFILE OF HUMAN IMMUNO-DEFICIENCY VIRUS INFECTED ADULT NIGERIANS ON HAART.

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Background: HIV infected individuals in early/middle stage infection are known to maintain relatively stable haematological status. With the advent of lifesaving HAART, the tolerability of organotoxicity is still a subject of controversy. This study sets out to determine the effects of HAART on the haematological profile of HIV infected adults.

Objective: This study investigated the haematological profile of HIV infected adult Nigerians on HAART.

Methods: A prospective study where blood samples (EDTA anti-coagulated) were drawn from 200 confirmed HIV positive adults placed on HAART for 3 months and above and 50 apparently healthy HIV negative individuals as controls at HVL, NIMR.
The haematological profile were assayed using BC-2800 Mindray auto haematology analyser. Data were analyzed, using Epi-Info software 6.04 version, and a p-value < 0.05 was regarded as significant.

Results: The HIV positive adult subjects had mean haemoglobin, haematocrit, white blood cell and platelet counts as 12.10×10^9g/dL, 0.373L/L, 4.74×10^9 Cells/L and 232×10^9 cell/L respectively. While the HIV negative subjects had 13.10×10^9g/dL; 0.394 L/L, 5.99×10^9 cells/L and 251.7×10^9 cells/L respectively, for same parameters. The p-value of the paired samples t-test were 0.031, 0.002, 0.000, 0.000 respectively.

Conclusion: There was significant difference, ($p < 0.05$) in all blood cells investigated; however these were not severe enough to give a pancytopenic picture. This may be attributable to the population under investigation, being on HAART and which may have had good immune re-constitution. Heamatological abnormalities may therefore be primarily controlled by HAART.

WEPP02

Knowledge and Attitude of Women Towards Cervical Cancer and Pap Smear Screning at the Obstetric and Gynaecology Clinic LUTH.

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Objective: To assess the knowledge and attitude of women attending Obstetrics and Gynecology Clinic, LUTH towards Cervical Cancer and Pap smear screening.

Methods: A cross sectional survey was carried out at the obstetric and gynecology clinic, LUTH. A total of 120 women with different socio-cultural backgrounds were interviewed. They were selected through convenient sampling method. A self-administered questionnaire was randomly administered to each participant after informed consent was given.

Results: 37.4% of the participants were within the ages 30-34 years, (modal range). 78.3% had attained tertiary education level. As much as 71.4% of the respondents had "poor" knowledge of cervical cancer and Pap smear screening. 80.7% of the respondents believe it is valuable to have Pap smear test done, as 79.1% of the respondent have had Pap smear test done before but majority (62.3%), of these women had it done once.
52.0% of the respondents indicated they do not mind the sex of the personnel conducting the Pap smear test.

Conclusion: Although the knowledge of cervical cancer and Pap smear test is very limited, the willingness to have it done is quite encouraging". There is an urgent need to set up an aggressive national awareness campaign to improve the knowledge level of our women towards cervical cancer and screening.

WEPP03

Reconstitution and Measurement of the Dose of Ampicillin-Cloxacillin Dry Syrup by Mothers of Babies Attending Paediatric Clinic at Lagos University Teaching Hospital

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Background: This cross-sectional study investigated the knowledge and practice of reconstitution, storage, measurement of the dose and use of ampicillin-cloxacillin dry syrup by mothers for their babies.

Methods: One hundred and seven [107] mothers admitted into the study based on defined inclusion and exclusion criteria were provided ampicillin-cloxacillin dry syrup, and all other requirements for reconstitution including a suitable work area, at no cost. Their knowledge and skills were simultaneously assessed and corrected while they each reconstituted syrup and measured one dose the way they would normally do at home.

Results: Only about 50 % [54] of mothers gradually added sufficient water initially, to uniformly disperse powder in the bottle before further additions to reach the marked levels; and only 22[20.5%] knew the crucial importance of viewing the lower meniscus of water at eye level to obtaining correct volumes of liquids in glass bottles or vessels. When asked to administer reconstituted syrup to their babies, 24 [22.4%] did not shake the bottle immediately before measuring the dose volumes, which implied that their doses would be wrong.

Conclusion: Only a relatively small proportion of mothers in this study demonstrated a real capacity to properly reconstitute and correctly measure the dose volumes of ampicillin-cloxacillin dry syrup without assistance. Extensive education and assistance by paediatric pharmacists will be most useful in this regard. For the uneducated or inexperienced mothers, reconstitution in the hospital by pharmacists is recommended, while alternative formulations should be considered.

WEPP04

How Health Research Capacity can be strengthened in Africa through Partnership for Disease Control.

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Background: Infectious diseases are a leading cause of morbidity and mortality not just in Africa but worldwide. In spite of the fact that many African governments, communities, businesses, international agencies and nongovernmental organizations (NGOs) have invested so much to strengthen and improve Health Research, it is obvious that not much has been achieved in the control of infectious diseases.
Objective: To find out to what extent infectious and non-communicable diseases can be controlled through systematic and coordinated partnership.

Methods: Home visiting programs for delivery services to individuals and families. The strategy recognizes social, economic, and other barriers to seeking services and reduces mortality among the elderly; conduct an in-depth informal interview and group discussions.

Results: The health of a nation's citizen has long depended on the willingness of professionals in disparate fields to share information. Bringing together professionals whose particular focus has given them different ways of thinking, methods and strategies, builds smarter and more knowledgeable health care, as factors that influences people's health can seldom be addressed adequately by only one organization or program. A multidisciplinary approach to strengthening Health Research in Africa has grown in importance.

Conclusion: Successful partnership depends on mutual understanding, well-defined goals, clearly articulated roles and expected outcomes. Partnering yields many benefits including advances in disease prevention, stronger Public Health infrastructure, allows for the setting of uniform standards for data collection.

WEPP05

Antioxidants Evaluation of Artemisinin Based Combination Therapy in Mice with *Plasmodium berghei* Malaria.

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Background: Malaria remains a leading cause of morbidity and mortality world wide, but with greater socio-economic and clinical burden in sub-Saharan Africa. Available evidence from in-vitro and clinical studies indicate that antioxidant enzymes play an important role in the protection from oxidative injury evoked by plasmodiosis. Artemisinin-based combination therapies (ACTs) are currently the therapeutic mainstay in many malaria control programmes with proven efficacy against chloroquine resistant *Plasmodium falciparum* and gametocytaemia. However, there is paucity of data regarding whether or not ACTs enhance reversion of oxidative stress in treated malaria patients coupled with their mechanism of action.

Objective: To evaluate the effect of antioxidants, on oxidative stress caused by induced *Plasmodium berghei* (NK 65) malaria in mice.

Method: A total of forty mice were divided into four groups (A-D) and acclimatized for 7 days prior to experimentation. A standard parasite inoculum of 10^7 parasites/µl of blood was administered intraperitoneally (IP) into the animals except those in group A. At a patency of 4 – 7% parasitaemia determined by thin film microscopy, the infected animals were randomized into two treatment groups of artesunate + mefloquine (AS+MF) and artesunate + Amodiaquine (AS + AQ) (groups B and C) with single-dose treatments administered orally for 3 days. On day 4, the tail venous blood of survivors were collected and assayed for catalase (CAT),superoxide dismutase (SOD), reduced glutathione (GSH), glutathione-s-transferase (GST) and glutathione peroxidase (GPO) as antioxidant markers using spectrophotometric technique.

Results: Compared to the uninfected control, significant ($P<0.05$) decreases in all the biomarkers were elicited by infected control mice. Treatment with ACTs resulted in improved enzyme activity of all the biomarkers, but with only catalase reaching significant level ($P<0.05$) in both treatment groups.

Conclusion: Our results suggest that the exogenous antioxidant intake may be beneficial in optimizing the clinical benefits of ACTs as anti-malarial agents.

TH3OP16

Long Term Treatment Outcome in HIV Infected Children in Lagos, Nigeria

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Background: HIV/AIDS remains a significant contributor to childhood morbidity and mortality in Nigeria. While paediatric infections account for only 10% of prevalence, more than14% of mortality and new infections are in children aged less than 15 years. Mother to child transmission accounts for 91% of paediatric HIV infection. In the absence of PMTCT interventions 15-45% of exposed infants will become HIV infected. The low access to PMTCT services means a huge pool of potentially infected children who may not come to the notice of HIV services until they are terminally ill. Some recent studies show a similar response to HAART in children and adults. However the long term response of Nigerian children to HAART needs to be evaluated to inform treatment guidelines and policy.

Objective: To determine the long term treatment outcome in HIV infected Nigerian children

Methods: Children presenting for treatment between Jan, 2005- Dec, 2007 at the NIMR HIV Care and Treatment clinic, Lagos were included in the study and prospectively followed up for 48 months. Data was collected prospectively using CRF and analysed using Microsoft Excel as well as SPSS 17.

Results: Of the 246 children analysed, 24 were transferred out and 23 died. At presentation, majority of the children (62%) were less than 5 years, at WHO stages 2 and 3 (71%). MTCT accounted for 86% of cases. Median VL decreased to undetected levels by 24 months. Most deaths occurred in infants (43%) and within 6 months after presentation (58%). Mean VL was significantly higher among those that died (p 0.000).

Conclusion: MTCT is the main mode of paediatric HIV infection. The response to HAART is faster in adults compared to children. Most deaths occurred within 6 months of diagnosis and mainly attributable to preventable causes, therefore, active case finding is advocated in all child clinics.

TH30P017

Awareness about STIs among Nigerian adolescents living with HIV infection

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Background: Worldwide, the highest reported rates of STIs are found among young people aged 15-19 and 20-24. About 2 million adolescents aged 10-19 were living with HIV in 2009 out of which 65% were females. Approximately one out of every three young people newly infected with HIV was from either South Africa or Nigeria. West and central Africa have an estimated 520,000 within which Nigeria has over 200,000 adolescents living with HIV. Compared to adults, sexually active adolescents are at higher risk for acquiring STIs.

Objectives: The main objective of the study was to ascertain the understanding of STIs among the HIV positive adolescents.

Methods: A questionnaire-based cross-sectional study was conducted over 4 months (October to December) in 2011 at the NIMR HIV Treatment Centre. The study participants were HIV positive children enrolled for treatment at the Centre. A total of 50 semi-structured questionnaires were administered by the physicians to randomly selected and consenting adolescents at routine clinic appointment visits. Data was analyzed using SPSS version 17.0.

Results: About 21% of the respondents were orphans. Majority (73.5%) were secondary school students. About 90% had been informed of their HIV status by the age of 13. Minority of them (32.4%) have disclosed their HIV status to other people. Most (58.8%) had other family members living with HIV. 52.9% of the respondents know that HIV is without a cure while 20.6% are aware of the ways of contracting HIV. About 61.8% of the participants understand STIs as diseases that have relationship with sex, 44.1% correctly identified sex as the route of transmission and 44.1% do not know if STIs (other than HIV) have curative treatments. Majority of them (82.4%) have not had sex.

Conclusion: The respondents had a varied knowledge about STIs, including HIV. It is recommendable for parents/guardians to give correct information about sex to children from about age 11-12yrs. Adolescents living with HIV would be earlier informed and equipped to live healthier lives.

TH3OP018

Antiretroviral drug adherence and challenges in adolescent living with HIV infection.

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Background: In 2009 approximately one out of every three young people newly infected with HIV was from either South Africa or Nigeria. 2 million adolescents aged 10-19 were living with the virus in 2009, 65% of them were females. West and central Africa account for an estimated 520,000.Nigeria has over 200,000 infected adolescents. Majority of these adolescents lived in sub- Saharan Africa. It has been observed that about 1.5million of this adolescence could have been vertically infected. In spite of the increasing numbers of adolescents with HIV there has been little focus on providing this group with specialized HIV care (WHO, 2006). In developed countries, adolescent medicine is a distinct clinical speciality. On the other hand, in resource-poor settings, dedicated health-care services for adolescents are few.

Objectives: To determine factors that would affect drug adherence in adolescence.

Methods: A Cross-sectional questionnaire-based administered between Oct and December 2011 by counsellors and physicians to randomly selected Consented Adolescents who came for clinic visits. A total of 50 Questionnaires were distributed. The total number adolescents during this period were 64. Questionnaires that were given were semi-structured. Data was analysed using SPSS version 17.0.

Results: Only 38.2% of adolescence had both parents. 70.6% of the adolescence correctly knew what type of drugs they were on. 88.2 % of the adolescence wanted an arrangement made to either increase the number of drugs picked or for the drugs to be made available near their homes. 64.7% of the patients liked their drugs. 50% of the adolescence said they sometimes do not take their medication. 41.2% forgot to take their medication. Other Factors said to affect drug pick were time spent in the clinic 44.1%, distance travelled to get to the clinic 17.6% and been busy in school 17.6%.

Conclusion: For there to be good adherence treatment of antiretroviral drugs there is need decentralization of the treatment of HIV. Partnership with other health institution can be done so as to allow patients easy access to antiretroviral drugs and treatment when needed. The orphan status of the children of many children needs to be addressed by the government.

TH3OP019

Seroprevalence and Factors Associated with Hepatitis B and C Infection in Pregnant Women Living with HIV in Lagos, Nigeria.

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Background: Hepatits B and C are the leading causes of chronic hepatitis and liver related deaths worldwide, with both infection sharing similar routes of transmission as HIV.
Perinatal and horizontal transmission are the most significant routes of transmission in areas of high endemicity, with most infections acquired in the first 5 years of life. It is therefore important to identify HIV positive pregnant women with Hepatitis B and C infection as well as associated factors for these co-infections. This is vital, as there is a paucity of data on the prevalence of HIV/Hepatitis B or HIV/Hepatitis C co-infection and associated factors in pregnant women in Nigeria.

Objective: The objective of this study was to determine the prevalence and factors associated with Hepatitis B and C infections in HIV infected pregnant women.

Method: A crossectional survey of pregnant HIV positive women enrolled in the prevention of mother to child transmission (PMTCT) clinic of the Nigerian Institute of Medical Research over a period of 5 years. Results were analyzed using SPSS version 19 and p values < 0.05 were statistically significant.

Results: 2391 HIV infected pregnant women were seen during the study period of which 101(42%) and 37(1.5%) seropositive for Hepatitis B surface antigen and Hepatitis C antibody respectively while 2 patients (0.08%) had all 3 co-infections. Factors associated with HIV/HBV co-infection were history of blood transfusion, ($p=0.02$), history of induced abortion ($p=0.002$), and ALT $\geqslant$ 45U/L ($p=0.02$), while the only factor associated with for HIV/ HCV co-infection was a history of induced abortions $p=0.01$)

Conclusion: In HIV positive pregnant women with a history of induced abortions, blood transfusions and elevated ALT levels $\geqslant$ 3x upper limit of normal, there should be a high index of suspicion for Hepatitis B or C infection. Screening of all pregnant women for HBV and HCV and prompt referral to appropriate treatment facilities to reduce perinatal transmission is thus advocated.

TH3OP020

Prevalence of Hepatitis B and C in Nigerian HIV Positive Children

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Background: With a national HIV prevalence of 4.6% and a population of 160 million Nigerians, the country has a large burden of people living with HIV. Nigeria has the highest burden of mother to child transmission of HIV in sub-Saharan Africa, an estimated value of less than 30% coverage amongst pregnant mothers requiring PMTCT services.
Hepatitis B and C infection has been reported in the general population as well as those infected with HIV. Shared routes of transmission of hepatitis and HIV do occur, often in resource poor settings. There is however paucity of data regarding impact of such infections amongst the peadiatrics cohorts.

Objective: This study was conducted to evaluate the prevalence of hepatitis coinfection amongst the paediatrics community at a HIV treatment centre in Lagos, Nigeria.

Methods: Design - Retrospective, Database study of 434 children attending the Nigerian Institute of Medical Research, APIN-Plus Paediatrics Clinic, Yaba, Lagos. Patients - HIV infected children analyzed for viral load, CD4 counts, Heamoglobin, Alanine transferase (ALT) and hepatitis screening from November 2006 and April 2011. Evaluation conducted 2 years following presentation. Statistical analyses – SPSS version 20.

Results: Prevalence of HBsAg and HCVAb were 4.1% and 0.7% respectively with no recorded dual infection.
A large proportion of co-infected children (56.1%) are dead or lost to follow-up as opposed to 20% in the other group. All surviving co-infected children (44.9%) had achieved virological suppression after 2 years of HAART. No significant difference in ALT, CD_4Counts, and Heamoglobin values among both groups.

Conclusion: The high mortality rate amongst co-infected children, calls for further evaluation to assess other underlying risk factors.

TH3OP021

The Effect of Douching Agents on the Microflora of the Female Genital Tract.

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Background: Modernization and increase awareness on female hygiene has brought about frequent use of various douching agents (Vaginal wash), for aesthetic or functional purposes. Therefore, cases of Vaginitis are on the increase in Nigeria. A cross sectional study was carried out to examine the effect of douching with Herbal and Packaged products on the Microflora of the female genital tract.

Objective: To determine the effect of douching agents on Microflora of the female genital tract.

Method: A total of 200 females 50 each from four Cadres, students, commercial sex workers (CSW), pregnant and non-pregnant women (NPW) were investigated for Vaginitis using structured questionnaire. High vaginal swabs (HVS) were collected and plated on De Man Rogosa and Sharpe (MRS) Agar, Blood Agar and MacConkey Agar. The douching agents used included both solid and liquid products; feminine wash(Fem1 and Fem2), disinfectant, soap and alum. They were tested against the vaginal Microflora using inhibitory assays of Agar well diffusion technique, Minimum Inhibitory Concentration(MIC) and Minimum Bactericidal Concentration(MBC).

Result : *Lactobacillus* species isolated included *L.acidophilus, L. Vaginalis, L.casei, L. Brevis, L. agilis, L. jensenii, L. debrueckii and L. fermentum.* Of these, *L. Vaginalis* 40 (80%) was most common in students, 20(40%) in CSW, 30(60%) in PW and 32(64%) in NPW. The least isolated was *L. debruekii* 7(14%). Pathogens isolated also included *E. coli, S. aureus and C. albicans.* P- value <0.5 while F- value (0.9353), indicating that the more the douching was done, the greater the risk for *Vaginitis* caused by *E. coli, S. aureus and C albicans.* Fem1 had MIC and MBC (8:16) at 250 µg/ml against *L. Vaginalis* and *L. acidophilus* , this was also confirmed by the expressed inhibitory zone s indicating that Fem1 effectively cleared the protective *Lactobacillus* spp. Soap and Alum also cleared the *Lactobacillus* spp. With MIC and MBC (31:63) for *L. acidophilus* and *L. jensenii* respectively .Generally *Lactobacillus* spp expressed resistance to the antibiotics tested, but were sensitive to Cloxacillin and Gentamicin.

Conclusion : It is suggested that care should be taken in the use of douching agents and that bi-annual test on Vaginitis should be done by every adult female that is sexually active.

TH3OP022

Medical Diagnostic Laboratory Regulation, Standards and Data Quality – What Can Nigeria Learn From the US Approach?

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Background: Modern healthcare delivery in America would be impossible without credible laboratory data. But in Nigeria, absence of standards and poor data quality hinder modern clinical diagnosis and therapy. For example, the Nigerian Institute of Medical Research (NIMR) has reported that only 1 out of 5349 laboratories surveyed were accredited by an external agency. NIMR has embarked on a project, with funding from the International Association of National Public Health Laboratories (IANPHI) and the support of Nigeria's CDC, to raise the country's diagnostic laboratory quality standards. The Medical Laboratory Science Council of Nigeria (MLSCN) is reportedly involved in related efforts. Without credible laboratory data, modern healthcare delivery will continue to elude Nigerians.

Objectives: The objectives of this presentation are (a) to briefly overview how diagnostic laboratories are regulated in the USA and in Nigeria; and (b) to suggest lessons that Nigeria could learn from the US system to improve Nigeria's clinical laboratory standards and data quality.

Methods: Key regulations and practices in both countries will be overviewed, and their perceived impact on quality highlighted.

Results: A dynamic, open and collaborative regulatory environment in the US tends to lead to better data quality when compared to the Nigerian environment.

Conclusion: Adopting ISO 15189 quality standards is a commendable and necessary first step. But it is not a sufficient measure to assure Nigerians of quality medical laboratory data. A comprehensive overhaul of related laws and regulations, backed by education and strict enforcement, informed by the US approach, will help assure quality and save lives.

TH3OP023

Early Infant Diagnosis of HIV-1: is repeat testing necessary for all positive samples when using automation?

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Background: PCR assays for early infant diagnosis (EID) are error prone, as such for quality assurance purpose, positive samples are retested. However, with the advent of the fully automated assays, there is less manipulation of the samples which reduces the chances of contamination.

Objective: To progressively compare all positive test samples on the Amplicor manual method with the automated testing platform.

Methods: Samples collected on Dried Blood Spots from 1967 patients accesing care and management at the Human Virology Laboratory of the Nigerian Institute of Medical Research between October 2011-July 2012 were analysed for HIV-1 DNA using the manual Amplicor HIV-1 DNA test v1.5 kit. All positive samples were repeated to ensure validity of result before release according to the national algorithm. The positive samples were also subjected to the automated Cobas Ampliprep/Cobas Taqman HIV-1 Qual test.

Results: Of the 1967 samples tested by the manual method, 44 were initially positive but upon repeat testing 41 (93%) were eventually confirmed. However, 3/44 (7%) of the earlier positive results, turned out to be negative after repeat testing. Whereas, all 41 positive samples turned positive using the automated system.

Conclusion: With less manipulation of samples in the automated method, repeat testing for positive samples using automation is not necessary. This is because the positive results are as reliable as the repeat testing by the manual technique. This is a good development as the national EID program is being scaled up.

TH3OP024

Transforming Outpatient Pharmacy Services and Training in Tertiary Hospitals of Nigeria

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Background: The study assessed the status of present out patient pharmacy services in tertiary hospitals in the country with a view to recommending improvements.

Methods: A self-administered questionnaire was distributed to pharmacists currently working in over 20 tertiary hospitals across Nigeria mostly by Courier postage; and Fellowship Candidates of West African Postgraduate College of Pharmacists [WAPCP].EPI6 software was used for data analysis.

Results: A response rate of 80.4 % was achieved, having analyzed 201 questionnaires. The major job of pharmacists in outpatient pharmacy included dispensing, 97.51%; compounding, 42.79%; costing of medication, 89.05%; drug information and advice to patients, 74.63%; drug information and advice to physicians, 58.21%. Pharmacists in the study expressed dissatisfaction with the state of monitoring for drug effectiveness, 80.6%; investigation of treatment failures, 95.7%; and with investigation and reporting of adverse drug reactions, 76.7%. Over 80% of respondents felt underutilized; 70.9% denied job satisfaction, while 81.2% denied visibility and motivation in the job of hospital pharmacists. More than 95% of respondents agreed that there was need for major alterations in their present job to enhance patient care and training.

Conclusion: In conclusion, a tested conception, based on the matrix model of organizational design, and the current National Drug Policy for Nigeria [First Revision 2005] has been proposed as Standard Operating Guidelines for Specialist Pharmacy Clinics in all tertiary hospitals in the country. The critical feature in this conception includes appointment of experienced pharmacy experts of associated universities as consultants, to lead teamwork in patient service that will pay detailed attention to drug use, clinical training in pharmaceutical care and research, exactly in line with the objectives of tertiary hospitals in Nigeria.

TH3OP025

Knowledge Altitude and Practice of Household Food Security among Women In Shomolu LGA of Lagos State

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Background: Low household food security can lead to low productivity, increased risk of infection and diseases, stunting, wasting and growth related effects in children. Studies have shown that the steady rise of food insecurity from18% in 1986 to 41% in 2004 is due to an increase in urbanization. Lack of adequate nutrients and balanced diet is an indication of food insecurity in households and this contributes to an increase in the morbidity and mortality pattern observed among the household members.

Objectives: To determine the level of food security in households of residents in Shomolu Local Government Area of Lagos State; To assess the level of knowledge, attitude and practice of women towards household food security in the Local Government Area

Methods: 275 women (representing each household) were interviewed using the United States Department of Agriculture (USDA) 6- Item Household Food Security Scale to assess the level of household food security. Using a structured interviewer administered questionnaire, knowledge of household food security as it relates to food availability, accessibility, sustainability, utilization and preservation was captured.

Results: Food insecurity level was found to be 66.2%. Knowledge of the women on household food security was 38% while proportion of the women with positive attitude was recorded as 58%. Overall, 67% of household recorded poor household food security practices due to inefficient food preservation methods.

Conclusion Majority of the households were food insecure owing to unemployment, household monthly income among other factors. Level of education, household income, occupation and household size had a statistically significant relationship with respondents' practices. Household members are advised to embark on cost effective and sustainable agricultural projects which will not only stem the tide of food insecurity at household level but also serve as an alternative income source.
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TH4OP026

Taenia cysticercosis pigs slaughter for human consumption in selected abattoirs in Lagos State

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Background: Cysticercosis is an infection caused by the encystment of the larval stage of the pork tapeworm, *Taenia solium*. When man ingests infected pork, the larvae lodges in the nervous system (neurocysticercosis) leading to epileptic seizures, blindness or death. Results of studies on the impact of neurocysticercosis on epilepsy in Africa are inconsistent.

Objectives: Determine the prevalence of *Taenia* cysticercosis by serology in pigs slaughtered for human consumption in selected abattoirs in Lagos. Assessed the environmental conditions under which pigs and cattle are slaughtered at the abattoirs. Describe the hygiene practices of butchers operating in the abattoirs.

Method: Blood was collected from 146 pigs slaughtered in three swine abattoirs in Lagos state between April and June 2012. Blood analysis was done using Enzyme Linked Immuno absorbent assay for the detection of circulating antigens. The environmental condition of six abattoirs in Lagos State was observed using an observation checklist, to assess adherence to National Policy. **A total of 101 butchers were also observed in six abattoirs in Lagos for** hygiene practices.

Results: The prevalence of *Taenia* cysticercosis was found to be 53.4%. Environmental conditions of the abattoirs were poor and none of the abattoirs met the minimum requirements of the National Policy on abattoir sanitation. Poor hygiene practices were observed amidst the butchers.
Conclusion: Veterinary services and proper monitoring should be provided in all pig farms as well as routine de-worming exercise for all animals. Abattoirs should be inspected routinely to ensure cleanliness of facilities and abattoir workers should be educated and monitored regularly.

TH4OP027

Antibacterial Susceptibility Pattern and Detection of Beta-Lactamase Resistance Genes in Anaerobes Isolated from Oral and Wound Infections

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Background*: Anaerobes of the genus Bacteroides, Fusobacterium Prevotella, Porphyromonas,* are among the pathogenic species predominantly isolated from oral and wound infections. Some of these species are resistant to common antibiotics used in therapy and possesses variety of resistant genes which they transfer among themselves and to species of other genus co-habiting similar environments.

Objective: This paper evaluated antibiotic resistance pattern and detected the presence of resistance genes from anaerobic isolates recovered from Nigerian patients with oral and wound infections.

Methodology: The isolates used were *Bacteroides* sp. (14), *Fusobacterium* sp. (25) *Prevotella sp. (19), Porphyromona* (7) obtained by culture on Fastidious anaerobe agar incubated under anaerobiosis. The minimum inhibitory concentration of the antibiotics on the isolates was determined by an agar dilution method on Brucella blood agar plate while the presence of *Cfx, Cep, and* bla_{FUS}, gene genes were detected by Polymerase chain reaction (PCR) using gene specific oligonucleotide primers.

Results: All the isolates were susceptible to amoxicillin/clavulanate, 78% to amoxicillin, while 92% were susceptible to metronidazole. *Cfx* gene was detected among *Bacteroides sp. (4%), Prevotella sp. (6%) and porphyromonas sp (0%),* bla_{FUS}, gene was detected in 12% of *Fusobacterim* sp, while the oligonucleotide primer specific for *Cep* gene showed no amplification with the DNA from all isolates tested.

Conclusion: This study shows that resistance to amoxicillin/clavulanate is not yet a problem however, the presence of anaerobes resistant to amoxicillin and detected of corresponding resistance genes in our environment suggests application of caution when therapy is targeted towards pathogenic anaerobic species.

TH4OP028

DNA quantity and DNA nicks in spermatozoa correlate better with reproductive outcomes than DNA fragmentation

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Background: DNA damage in spermatozoa is detrimental to fertility (natural or via assisted reproductive technologies). The need to assess spermatozoa DNA integrity is generally acknowledged, however there is no agreement on the marker(s). DNA fragmentation and nick indicate the percentage fragmentation and nicks in sperm DNA and quantifying them measure irreparable and reparable DNA damage respectively.

Objective: To evaluate DNA quantification, fragmentation and nick as markers of DNA damage in relation to their ability to predict reproductive outcomes.

Method: Albino mice (n=16/group) were exposed to varying concentrations of antiretroviral drugs for one full spermatogenic cycle. Six mice were sampled at mid- and at full-term for each treatment and control (negative and positive) group. Picogreen-labelled fluorometry of neat, digested and unwind DNA were used to determine the DNA quantity [µg/ml], fragmentation and nicks. Four mice per group each mated five females and reproductive outcomes were recorded.

Results: Only DNA content and DNA nicks were included amongst significant variables in the best regression model predicting fertility. Though they did not have significant correlation with reproductive outcomes in univariate analysis, DNA quantity had significant correlations with testicular size (γ=0.44) and sperm count (γ=0.31) while DNA nicks had significant correlations with testicular size (γ= -0.45) and sperm count (γ= -0.35). All treatment groups had higher DNA quantity while most had lower DNA nicks than the fertile unexposed controls (78.4±35.4µg/ml and 32±12%).

Conclusion: DNA quantity and DNA nicks in spermatozoa correlated with testicular/spermatic parameters and reproductive outcomes. DNA nicks might prove a useful marker after behavioural or therapeutic interventions

TH5OP029

Authenticaton of the Antimicrobial Activity of Some Indigenous Herbal Remedies Used in the Treatment of Typhoid and Urinary Tract Infections in Anambra State, Nigeria

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Background: This study was carried out to examine the antimicrobial activity of some indigenous aqueous herbal preparations used in the treatment of typhoid fever and urinary tract infections against some common microorganisms and to compare their antimicrobial activities with standard antibiotics.

Methods: Six liquid herbal remedies indicated for the treatment of urinary tract infections (coded P1 – P3) and typhoid fever (coded P4 – P6) were purchased from various outlets of the herbal producers in Anambra state, Nigeria and screened for their activities against clinical isolates of *Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa* and *Salmonella typhi* using the agar well diffusion and agar dilution methods. The conventional antibiotics, ciprofloxacin and gentamicin were used as comparative standards.

Results: P1 was active against all tested organisms with MIC of 2.5 %$^{v}/_{v}$ for *Escherichia coli, Pseudomonas aeruginosa* and *Salmonella* and 1.25 %$^{v}/_{v}$ for *Staphylococcus aureus.* P2 and P3 showed activity against *Staphylococcus aureus,* only. P4 was effective against *Salmonella typhi, Staphylococcus aureus, Escherichia coli,* and *Pseudomonas aeruginosa* with MIC of 2.5 %$^{v}/_{v}$, for all organisms while P5 and P6 had no activity against the test organisms. Ciprofloxacin showed MIC of 0.008 µg/ml for *Salmonella,* 0.016 µg/ml for *Escherichia coli* and *Pseudomonas aeruginosa,* and 0.002 µg/ml for *Staphylococcus aureus* while gentamicin showed MIC of 0.016 µg/ml for *Salmonella* and *Escherichia coli,* and 0.004 µg/ml for *Pseudomonas aeruginosa* and *Staphylococcus aureus.* Two of the herbal remedies showed inhibitory activities against the test microorganisms giving a scientific basis for the use of these herbal remedies in the treatment of urinary tract infections and typhoid. Of greater concern however is the observation that most of the herbal remedies had no activity against microorganisms contrary to their label claims. The comparison of the activities of the herbal remedies with conventional antibiotics showed that conventional antibiotics are more active than herbal preparations.

Conclusion: It is strongly advocated that Drug Regulatory Agencies should pay high attention to the authentication of the pharmacological claims of these herbal medicines freely sold in Nigeria.

TH5OP030

Reconstitution and Measurement of the Dose of Ampicillin-Cloxacillin Dry Syrup by Mothers of Babies Attending Paediatric Clinic at Lagos University Teaching Hospital

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Background : This cross-sectional study investigated the knowledge and practice of reconstitution, storage, measurement of the dose and use of ampicillin-cloxacillin dry syrup by mothers for their babies.

Methods: One hundred and seven [107] mothers admitted into the study based on defined inclusion and exclusion criteria were provided ampicillin-cloxacillin dry syrup, and all other requirements for reconstitution including a suitable work area, at no cost. Their knowledge and skills were simultaneously assessed and corrected while they each reconstituted syrup and measured one dose the way they would normally do at home.

Results: Only about 50 % [54] of mothers gradually added sufficient water initially, to uniformly disperse powder in the bottle before further additions to reach the marked levels; and only 22[20.5%] knew the crucial importance of viewing the lower meniscus of water at eye level to obtaining correct volumes of liquids in glass bottles or vessels. When asked to administer reconstituted syrup to their babies, 24 [22.4%] did not shake the bottle immediately before measuring the dose volumes, which implied that their doses would be wrong.

Conclusion: Only a relatively small proportion of mothers in this study demonstrated a real capacity to properly reconstitute and correctly measure the dose volumes of ampicillin-cloxacillin dry syrup without assistance. Extensive education and assistance by paediatric pharmacists will be most useful in this regard. For the uneducated or inexperienced mothers, reconstitution in the hospital by pharmacists is recommended, while alternative formulations should be considered.

TH5OP031

Evaluation of Microalbuminuria in relation to Asymptomatic Bacteruria in Nigerian patients with Sickle Cell Anaemia.

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Background: Studies have identified microalbuminuria (MA) and asymptomatic bacteruria (ASB) as co-morbid factors in Sickle cell anaemia (SCA). However, relationship between these co-morbid factors remains unclear and data are lacking for Nigerian patients.

Objective: This study determined the prevalence of MA and ASB in a cohort of patients with SCA.

Methodology: This was a cross-sectional study of SCA patients in the steady state from four medical centres in

Lagos, Nigeria. Early morning mid stream urine sample was aseptic collected into sterile bottle from each patient for urinary determination of creatinine and albumin. Aerobic culture and culture count of organisms was done using conventional growth and count media. Serum creatinine and haematological indices including irreversibly sickled cells (ISC) were also assayed.

Results: A total of 103 patients comprising 48 males and 55 females with a mean age of 10.4 years were studied. Of the 103 urine samples screened, 23 (22.3%) had albuminuria (ALB) and consisted of 9 males and 14 females ($P > 0.05$) with 16.5% of cases due to MA ($P < 0.05$). Age of onset of MA was found to be 7 years and children accounted for 23.5 % of all ALB cases ($P > 0.05$). The Prevalence of confirmed ASB was 14.6% with females accounting for 14 of 19 probable ASB cases ($P < 0.05$) and patients with ALB are 11.5 times more likely to have ASB than those without ALB (95% CI, 3-42.4). Univariate regression analysis demonstrated significant ($P < 0.05$) association between MA age, Hb reticulocyte count, ISC and occurrence of ASB but with only ISC evolving as an independent predictor. Twenty-eight bacterial isolates predominated by *Escherichia coli* (39.3%; $P < 0.05$) of whom 89.3% were multidrug resistant were recovered from the ASB urine samples. Antibiogram discriminated these isolates into 11 resistance profiles but with sensitivity to ciprofloxacin and nitrofurantoin.

Conclusion: In conclusion, both MA and ASB are common in Nigerian SCA patients with the former occurring from the first decade of life.

TH5OP032

A Comparative Study of the Prevalence of Overweight and Obesity among Private and Public Primary School Children in Sagamu Local Government , Ogun State. Nigeria.

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Background: Overweight and obesity are becoming serious public health issue among children in developing countries. Co morbidities associated with these conditions are similar in children as in the adult population. Strategies to reduce the prevalence of overweight will require information on its distribution among children. However, there is paucity of data on prevalence of obesity in Nigerian children. This study was conducted to assess the prevalence of overweight and obesity among the primary school children and determine the factors associated with these conditions.

Methods: A multi-stage random sampling technique was used in selecting 400 respondents comprising of 300 private and 100 public primary school children in the LGA. A well-structured questionnaire which contained 5 sections was used to obtain information on respondents' socio – demographic characteristics, eating habits, physical activity, medical history and Anthropometric data. Stool samples for microbiological analysis.

Results: Result reveals 13(4.3%) respondents were obesed in the private school, while 1(33.0%) were obesed in the public school, 44(14.7%) were overweight in the private school., while 2(2.0%) were overweight in the public school. These differences were statistically significant at P< 0.05. The percentage of the respondents who had stunted growth in public school (22%) was significantly higher (p< 0.05) than that in the private school. (5.25%) 17% of the respondents in the public school were infested with *Ascaris lumbricoides*. The private school respondents were rated as having a poor eating habit. 52(17.3%) compared to 98% rated as having good eating habits in the public school. Involvement in physical activities was high in all. (100%) in the public and (99 .7%) in the private schools. Similarly, the sedentary activity pattern was similar 80% and 78% of respondents in private and public schools respectively spent between 3 to 4 hours daily watching Television. More parents in the private schools (43.3%) were earning more than (14%) recorded in the public schools.

Conclusion: The findings in this study showed that both over nutrition and under nutrition co - exist among the school children in Sagamu Local Government, and the occurrence of overweight in children is influenced by socio – economic status of their parents.

TH5OP033

Data is Everybody's Responsibility: A Monitoring and Evaluation Report of Prevention-of-Mother-To-Child Transmission of HIV (PMTCT) Data Quality in Nigerian Institute of Medical Research (NIMR)

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Background : NIMR have a full comprehensive HIV care with active adult, PMTCT and pediatric clinics. As a National research institute, it has served as a source of accurate and evidence based data not only for Aids prevention initiative of Nigeria (APIN) but for the Nigeria's M & E database under National Agency for the control of Aids (NACA) and Center for Disease control (CDC Nigeria). Since inception of PMTCT services in 2004, over 3000 mothers have benefited. However, over the years there has been a gradual increase in the number of unfilled delivery forms of PMTCT enrollees while their babies are already registered in the pediatric unit.

Objective: To improve Nigeria Institute of Medical research (NIMR) PMTCT data by clearing 50% of backlog of unfilled delivery forms by mid September 2012 and to positively impact on the culture of filling delivery forms of PMTCT enrollees by doctors.

Methods: Stakeholders were identified. A monitoring and evaluation team was formed with members from each unit of identified stakeholders. A Root cause analysis was done; a log frame matrix and a workplan were prepared. Baseline data (unfilled delivery forms) was obtained from data unit. Folders retrieved in batches and needed information from pediatric folders used in filling the delivery forms. Training for counselors and focus group discussion with doctors held. Checklist developed for pediatric unit doctors and front desk officer.

Results: 339 backlog of unfilled delivery forms were identified from the data base. 213 (63%) of backlog of unfilled delivery forms were retrieved and filled by team. 10 counselors were trained. There is Improved collaboration between pediatric and PMTCT units. Checklist provided for front desk officer on sequence of forms in PMTCT folders. Checklist provided for pediatric doctors on vital points to note during history taking of infants in their initial visit

Conclusion: The importance of accurate data collection cannot be overemphasizing. Regular training of all healthcare personnel will engender a culture of seeing data as everybody's responsibility.

TH5OP034

Prevalence of Hepatitis B Virus (PRE-CORE MUTANTS) in Lagos

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Background: Hepatitis B virus (HBV) is a common cause of chronic liver disease in Sub-Saharan Africa with 13% infection rate in Nigeria. Presence of the "e" antigen" marker of the virus (HBeAg) in the human blood, indicates viral replication, however, some strains of HBV called pre-core mutants do not produce HBeAg even though the virus is actively replicating. This mutant strain is associated with a severe pattern of HBV infection and seen in individuals with HBeAg negativity, HBsAg positivity and a high HBV DNA viral load.

Objective: To determine the prevalence of HBV mutant strains in Lagos in order to assess the role of using HBeAg alone without HBV DNA PCR for deciding treatment commencement in Lagos, Nigeria.

Methods: 118 samples were assayed for HBV DNA using the ROCHE Taqman PCR technique. The HBeAg status of these samples was determined using ELISA technique.

Results: All the 118 samples had viral load > 1000 000 IU/ML. Out of the 118 samples, 71(60.1%) of the subjects had positive HBeAg results which is the wild type virus and 47 (39.8%) for the mutant strain (negative HBeAg status).

Conclusion: The incidence of HBV mutant strain in this population is high; therefore, HBeAg alone cannot be used in deciding the treatment commencement for HBV infection.

TH6OP035

Preliminary Studies on the management of the Lung of Albino rats (*Rattus norvegicus*) exposed to environmental Pollutants.

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Background : The management of extract of *Richardia brasiliensis* and Aloe vera (*Aloe barbadensis*) leaves on the lung of Albino Rats (Rattus norvegicus) was investigated.

Method: The Rats were grouped into three groups. Each group consists of 10 males and 10 female rats. The first group is the basal control group. Group two rats were exposed daily to passive side stream of dust from asbestos. Group three rats were exposed daily to main stream smoke from two cigarette sticks in an inhalation chamber for 40 minutes. At 4th week of the experiment, two rats from each group exposed to the environmental hazards and the control were sacrificed. The animals were peritoneally injected with colchicines and slides were prepared from the lung cells and chromosomal abnormalities of the cells growth were observed through photomicrographs. Management of the extract commence on the 5th week. 150mg/kgb.w of *Richardia brasiliensis* and 150mg/kgb.w of Aloe vera extract were given twice daily for 8 weeks. At the 8th week, three Rats from each group were sacrificed, slides were prepared, and their photomicrographs were also observed.

Results and Conclusion: It was observed that the chromosomal aberrations of the treated Rats with *Ricardia Brasiliensis and Aloe Barbadensis* had similar patterns to that of the control. Also, analysis of the Haematological Parameters revealed that there was a significant increased ($P < 0.05$) in the Total WBC and RBC of Rats treated with Aloe vera juice extract for duration of 8 weeks (10.53 ± 1.60) and *Richardia brasiliensis* (9.45 ± 1.30) respectively when compared to untreated Rats. Also, there is a significant increased ($P < 0.05$) in the PCV value for both Aloe vera juice (27.49 ± 3.04) and *Richardia brasiliensis* (34.50 ± 1.61).

TH6OP036

Survey of Active Measles Infection in Vaccinated and Unvaccinated Children in Nigeria

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Background : Measles, an acute viral illness caused by a virus in the family Paramyxoviridae is a vaccine preventable disease. Measles outbreak is common in Nigeria despite the national immunization program with an annual incidence range 1-15 /100, 000/year from 2005 to 2006 (Mohamed *et al*., 2010).

Objectives: The study aims to provide information on measles infection in vaccinated and un- vaccinated children presenting with fever and maculopapular rash during measles outbreak in Lagos and Ogun State Nigeria

Methods: Children presenting with symptoms of measles infection in hospitals and matched controls in Lagos and Ogun State were recruited for this study. With informed consent from caregivers, vaccination history, clinical details and 5 millilitres of blood of the children were obtained. Their sera samples were screened for specific IgM antibodies to measles virus using ELISA test kits by IVD WKEA MED SUPPLIES according to the manufacturer's instruction. Data obtained was analysed using SPSS15 for windows

Results: Of the 144 children (122 test and 22 controls) screened, 74(51.4%) were females and 70 (48.6%) were males. Fifty six (39.9%) of the total number of children screened had previously been vaccinated against measles virus, 7 (12.5%) of which were controls while 88 (61.1%) were not vaccinated.
Seventy nine (54.8%) of the 144 children had measles IgM antibodies, and of these 36 (45.7%) had been vaccinated for measles, while 43 (54.4%) had not. Of the fifty six vaccinated children 40 (71.4%) are positive for measles IgM 4 (10%) of which are controls while 39 (48.1%) of the 88 unvaccinated children had measles IgM antibodies

Conclusion: We observed in this study that despite the vaccination program ongoing in Nigeria a high number of children are still being infected with measles despite their vaccination status. Therefore there is need to identify the cause of the low level of the vaccine protection.

TH6OP037

Antiretroviral drug is associated with spermatozoa abnormalities in albino mice.

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Background: With improvements in the quality of life of people living with HIV (PLWH), interest has moved from morbidity/mortality and many PLWH now desire to have children. The effects of HIV infection and/or antiretroviral therapy (ART) on fertility have been evaluated, but efforts to clearly attribute them to HIV infection or ART have not been generally acceptable.

Objective: To evaluate the effect of administering ARVs (zidovudine [ZDV] and nevirapine [NVP]) on the testicular size and spermatic functions in albino mice, to clearly attribute any effect observed to ART.

Methods: ZDV (10, 100 and 250mg/kg) and NVP (5, 50 and 150mg/kg) were administered to twelve mice per group through 56 days of spermatogenesis. Haematocrit and microscopy were used to determine sperm counts and head anomalies respectively. Picogreen-labelled fluorometry of neat, digested and unwind DNA were used to determine the DNA quantity [µg/ml], fragmentation and nicks. Parameters were assayed mid- and full-term for the treatment groups, negative and positive controls.

Results: Significant oligospermia was observed in all groups after administering ART. Increased sperm head anomalies were observed in most test groups, particularly the ZDV-treated groups. Higher DNA quantity in all treatment groups and reduced DNA nicks in most treatment groups were recorded. There were little or no changes in DNA fragmentation across the groups. Significantly reduced testicular size was observed in only the 5mg/kg NVP group.

Conclusion: Administration of zidovudine and nevirapine to mice resulted in significant oligospermia. Increased sperm head anomalies and DNA content was also recorded in the exposed spermatozoa.

TH6OP038

Active metabolites, haemagglutination activity and *in vitro* effects of submerged mycellum of *Schizophyllum commune* on Hep-2 cells.

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Background: The incidence of cancer has increasingly being reported to be on the increase in developing countries, including Nigeria. This is further compounded by anticancer treatment failure resulting in tumor remission, metastases and early mortality. To address this challenge, research is now focused on exploration and development of novel anticancer agents from natural products including edible mushrooms. *Schizophyllum commune* is a major edible mushroom consumed in Nigeria

Objective: This study determined the active metabolites and in vitro effects of *S. commune* on Hep-2 cells

Methods: A submerged culture method was used to grow *S. commune* mycellum biomass over 6 days. Active metabolites secreted into the spent culture supernatant (SCS) were determined spectrophotometrically and by chromatographic methods, while haemagglutination assays was done using formalinized human erythrocytes (group A+) and lectin fraction of mycellum homogenetae prepared by salting out technique. Monolayer culture of Hep-2 cells was obtained over 48h in DMEM medium supplemented with fetal calf serum and antibiotics. Cytotoxic effect of *S. commune* SCS was assessed by dye exclusion method. Data obtained were analyzed statistically.

Results: *S. commune* mycellum elicited significant haemagglutination activity (Titre : 256 – 1024) that was uninhibited by 200 – 800 mM of D. glucose, raffinose and maltose. Activity was either lost of reduced in the presence D. galactosamine, sialic acid and trehalose. Strigmatocystin was identified as the active metabolite in SCS with significant cytotoxic activity against hep-2 cells in vitro (IC_{50} < 500 ug/mL).

Conclusion: Our results suggest drug development potentials of *S. commune* as an anticancer agent

TH6OP039

The antagonistic activities of Lactic acid bacteria isolated from salad vegetables against methicillin resistant *Staphylococcus aureus* (MRSA).

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Background: Methicillin resistant *Staphylococcus aureus* (MRSA) has remained a clinical nightmare since its emergence some years ago. It is a bacterium that carries *mec*A gene in its chromosome and this mediates the resistance. Lactic acid bacteria from different niches have been reported to exhibit antimicrobial activities against pathogens including the drug resistant ones.

Objective: The objective of this study was to investigate the anti- MRSA activities of LAB isolated from salad vegetables

Methods : 0.5 Mc Farland standard (10^8 CFU/ml) of five confirmed MRSA, carrying *mec*A gene were challenged in the spot streak, agar well diffusion of the cell free supernatant (CFS) of LAB isolated from salad vegetables and soft agar (0.7%) overlay assays. Thirty- one (31) isolates of LAB from lettuce, cucumber and cabbage procured from eight (8) different market locations in Lagos Nigeria were employed in the anti- MRSA assays.

Result : The isolated LAB were as follows; *Pediococcus pentosaceus*, *Weissella confusa* (cucumber), *Lactobacillus cellobiosus* (cabbage) and *Lactobacillus plantarum*, *Lactobacillus salivarius* (lettuce).
The degrees of inhibition against MRSA varied in different assays; in the spot streak, *P. pentosaceus* and *L. cellobiosus* from Festac and Isolo markets respectively exhibited widest zones of inhibition. In the agar overlay, *P. pentosaceus* and *W. confusa* from Mile 12 and Festac showed the widest zones of 28mm and 24mm respectively while the MRSA exhibited resistance to most of the CFS.

Conclusion: Although the particular inhibitory metabolites have not been elucidated, the LAB from salad vegetables have been found by this study to possess anti- MRSA abilities *in- vitro*.

TH6OP040

Preliminary Evaluation of Three Diagnostic Methods for G6PD Deficiency Determination in Lagos State.

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Background: When there are sufficient grounds to suspect G6PD deficiency in a patient with related cases such as neonatal jaundice, drug induced hemoglobinuria that result in hemolysis, a reliable, fast and cost effective diagnostic method of high precision is key. In rural health care delivery settings with little or no power supply, choice of a suitable technique is necessary to enhance patient's care even in the face of operational challenges such as lack of a UV spectrophotometer.

Objective(s): To evaluate methods for G6PD assay for sensitivity and specificity.

Methods: The sensitivity and specificity of Three (3) G6PD assay methods were evaluated using the same blood samples. The Spectrophotometric (uvS) method by reading of absorbance at 340nm, the rapid fluorescent enzyme test (RFET) by detection in ultraviolet light, and the dye decolorization method by its ability to decolorize a dye, brilliant cresyl blue (d-BCB). G6PD controls, normal and deficient were run concurrently to monitor accuracy and precision. A total of 100 blood samples were tested. Inclusion criteria were blood samples with Hb > 13.0g/dl for Males and >12.0g/dl for females. Exclusion criteria were blood samples with Hb < 12.0g/dl for Males and < 11.0g/dl for females.

Results: Twelve (12) out of the 100 blood samples tested were found to be G6PD deficient by the three methods with specificity and sensitivity (at 95% confidence interval) in the following order: uvS [94.4 (88.3-98.6) and 97.2 (94.5-99.1)]; RFET [98.2(95.7-99.6) and 97.1 (94.2-99.2)]; d-BCB [98.0 (95.9-99.8) and 92.1 (97.5-98.7)].

Conclusion: The study shows that it is possible to assay for G6PD with an accurate, user-friendly and field adapted rapid test. This will guide clinicians on drug administration especially when vulnerable groups are involved.

THPP06

The Need to Reorganize and Focus Training and Practice of Clinical Pharmacy in Nigeria

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Background: The purpose of the study was to establish that there was need for major changes [reforms] in the way pharmaceutical care and training were being carried out in university hospitals in Nigeria.

Method: Four hundred [400] pre-validated self administered questionnaires were posted to the Northern, Central and Southern parts of the country, to be randomly distributed mainly among hospital pharmacists-for convenience, but also to any other pharmacists that were trained in Nigeria. EPI Info Version 6 software was used to analyze completed questionnaires.

Results : Response rate of 75% was achieved, with 300 questionnaires analyzed. Respondents accepted outpatient dispensing to often consist of a "hurried exchange" with "scanty communication" between pharmacist and patients to be "true", 189[63.0%] or "partly true" , 96[32.0%]. Pharmacist interaction with inpatients was described to occur "always", 17[5.7%] "sometimes", 116[38.7%] "rarely", 136[45.3%] "not at all", 27[9.0%] and non-response, 4[1.3%]. The dispensing process in university hospitals compared with secondary or primary care centers were "very similar" or "similar" to 163[54.5%], while "different" and "very different" made up only 124[41.5%]. Clinical pharmacy lecturers of associated universities should be appointed consultants to university hospitals, 238[79.4%], as they had the potential to provide the highest level of pharmaceutical care possible in the country, 256[85.4%].

Conclusion: The investigation confirmed that reforms were required in order to transform pharmaceutical care, training, research and primary care in all ramifications in Nigeria. A new organizational structure has been recommended to improve the effectiveness of the faculties of pharmacy in our universities.

THPP07

Hepatotoxicity of Aqueous Leaf Extract of *Bridelia ferruginea on the* Liver of Albino Rats.

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Background: The hepatic effect of aqueous extract of *Bridelia ferruginea* leaves on the liver of albino rats (*Rattus norvegicus*) was investigated.

Methods: The rats were fed with their feed (pellets) and clean water and were left for a period of four weeks to acclimatize to their new environment and thereafter the experiment commenced. The rats were grouped into four groups; the control group which did not receive the extract at all and three other groups according to dose of extracts administered orally.

Results: There was a steady increase in weight in both control and treated group with percentage weight change of 22.8 ± 5.7% in the control group, 19.3 ± 3.9%, 19.4 ± 3.7% and 13.7 ± 5.00% in the treated group (150,100 and 50mg/kg body weight) respectively. The transaminases (AST and ALT) are well known enzymes used as biomarkers to predict possible toxicity to the liver. Possible damage to liver cells resulted in elevation of both these transaminases in the serum.

Conclusion : Furthermore, measurement of enzymatic activities of AST and ALT is of clinical and toxicological importance as changes in their activities are indicative of liver damage by toxicants or in diseased condition.

THPP08

Impact of Highly Active Antiretroviral Therapy on Hematological Abnormalities in HIV Positive Individuals in Lagos, Nigeria

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Background : Different hematological disorders have been reported at stages of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and they increase the risk of morbidity and mortality. These hematological manifestations also reflect the underlying immune status if interpreted cautiously, especially if the patient is in regular follow-up. Hematological disorders like thrombocytopenia in HIV can sometimes be a very challenging illness to treat, hence, the need to evaluate the effect of HAART on cytopenia.

Objective: To evaluate the risk factors and investigate the impact of HAART on cytopenia in HIV infection.

Method: Medical records of 920 patients visiting the Human Virology Laboratory from January 2006 to May 2011 were retrospectively reviewed. To determine the impact of HIV alone, HIV patients with other conditions that could have resulted in hematological manifestations (Hbv and HCV) were excluded. Demographical data, Hematological parameters, CD4 and viral titres were analysed. Multiple logistic regression analyses was performed to identify risk factors for cytopenia. Data analysis was done using Statgraphics Centurion XVI. I and Epi Info 7.0.9.34.

Result: The median age was 32 with sex distribution of 578 females and 342 males. The frequency of cytopenia among the study participants was; anemia 318 (34.6%) neutropenia 240 (26.1)% and thrombocytopenia 22 (2.4%) lymphopenia 349 (38%) and bicytopenia 10 (1.1 %). No risk factor was identified by logistic regression analysis. After HAART, cytopenia was reversed in thrombocytopenia (95.5%) and anemia (82.3%) while neutropenia was poorly reversed (49.5%).

Conclusion: These findings suggest that impact of HAART on neutropenia needs further investigation.

THPP09

The Efficacy of Local Remedies Used for Treating Water for Bathing in Lagos.

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Background: Most of the mortality and morbidity especially in the developing countries are associated with water related diseases. They are a leading cause of death in under five's as everyday diarrhoeal diseases cause about 6,000 deaths in this age group. People can become infected by drinking, washing and bathing with contaminated water. Success in the control of waterborne diseases can be achieved through water treatment programmes that employ physical and chemical methods such as filtration, chemical precipitation and coagulation with various salts and plant materials. which have been practiced since ancient times.

Objective: This study evaluated the efficacy of some local remedies used for treating water for bathing in Lagos.

Methods: A total of 16 water samples collected from various sources (taps, wells, boreholes etc) in Surulere, Ikeja and Kosefe LGAs were processed using standard microbiological and chemical methods to determine their bacterial content, hardness and effect of the local remedies on the water quality.

Results: Results showed that 14 of the 16 water samples were contaminated with bacteria (mainly *Bacillus spp Enterobacter, Enterococcus faecalis, Staphylococcus spp*) and only one water sample each from 3 taps and boreholes were potable.
Most of the water samples tested were soft and the addition of the local remedies had little effect on their hardness.
While Ash, potash alum, alum and lime showed varying levels of reduction on the bacterial population, salt and seed of *Moringa oliefera* showed little or no effect.

Conclusion: From this study, local remedies for water treatment though affordable, are not effective for treating water for bathing.

THPP010

Bacteriological Quality of Water Used for Bathing in Lagos

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Background: Living beings need water for survival including humans and bacteria. Human beings use water for drinking, cooking, bathing, manufacturing and waste disposal. In a bid to get rid of wastes natural waters are polluted with substances which include organic wastes that promote the growth of pathogenic microorganisms (Adams and Kolo, 2006). Faecal water pollution through direct contamination of surface run-off or sewage may add a variety of pathogens resulting in health hazards.

Objective: In this study, the types, population and antibiotic susceptibility patterns of bacteria in water used for bathing in Lagos were identified. The effect of long storage in various types of containers was determined.

Methods: Water samples from various sources (well water, tap water, borehole water, rivers, streams and rain.) used for bathing were collected from one local government area (L.G.A) selected from each of the three senatorial districts (S.D) in Lagos state into different containers (plastic, clay , metal). Water collected were processed to identify and count the bacteria each day and determine their antibiotic susceptibility patterns using standard microbiological methods. Data was analysed using SPSS statistical package.

Results: Results showed that the water samples from 14 of the 16 were contaminated with bacteria (mainly *Bacillus spp Enterobacter, Enterococcus faecalis, Staphylococcus spp*) most being resistant to at least 3 antibiotics, while rain water sample was not contaminated except that collected on a windy day. Long storage increased the bacterial population.

Conclusion: This study highlights the poor bacteriological quality of water from streams and wells used for bathing and the effect of long storage and container type on the contamination level of the water.

THPP011

The Role of Protein Malnutrition on the Persistent High Goitre Rate in Ekiti East Local Government Area of Nigeria.

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Background and Objective: Following the introduction of the mandatory salt iodization policy, the Total goiter rate (TGR) in Ekiti East decreased from 38% in 1993 to 33.3% in 1998 while in other similar iodine endemic areas significant reduction in TGR were recorded, thus raising the question that other factors apart from iodine may contribute to goitrogenesis. Protein deficiency has been implicated in goiter endemic areas in many developing countries.

Methods : A cross sectional study was conducted in 2010 covering five different communities in Ekiti East local government area among women of child bearing age using a sample size of 249. Control samples were drawn from Ogijo community in Ogun state, a place known to be non -iodine endemic from previous studies. The subjects gave their consent by filling the consent forms. Total goiter rates were established using the neck palpation method based on the ICCIDD / WHO criteria. Blood samples were taken for laboratory analysis. Total protein and albumin were determined colorimetricaly while prealbumin, transferrin and retinol binding protein were estimated by Maccini methods. Quality controls were established with certified samples.

Results: The Total goiter rates in percentages were 12.8, 18, 18, 16.3, 13.7 and 3.09 for Ahon, Ilasa, Isinbode, Iworo, Iludofin and controls respectively. The total Goiter rate has reduced to 15.76%in 2010 as against 33.3 in 19998. The concentrations of serum albumin in the control of 45.08 ± 3.4g/l was significantly higher than 34.4 ± 1.8g/l, 35.22 ± 4.1g/l, 36.5 ± 2.6g/l, 36.5 ± 2.6g/l, 37.14 ± 6g/l in Ahon, Ilasa, Isinbode, Iworo, Iludofincommunities respectively.($P< 0.05$) Similarly the concentration of retinol binding protein and transferin (g/l) in control subjects was significantly higher than that of the five communities in Ekiti East. ($P<0.05$)

Conclusion : The total goiter rate has decreased from the value of 1998. However, this prevalence is still high and considered to be a health risk in view of the fact that a TGR of 5% and above is considered to be a signal for the presence of a public health problem. Protein deficiency is partly responsible for the persistent high goiter rate in Ekiti East local government. Fortification of table salts with essential amino acids and advocacy of balanced diet may further reduce the prevalence of Goiter in Ekiti East local government.

THPP012

Susceptibility Status of Malaria Vectors to Insecticides in Borno State, Northeastern Nigeria

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Background : Malaria Control Programmes in Africa mainly address case management of the disease and use of Insecticide Treated bed nets (ITNS).The effect of greater focus on just these two interventions is limited impact on malaria control on the region. The Federal Minisry of Health National Malaria strategic Plan advocates Indoor Residual Spraying (IRS) . The plan is to cover 20% of the targeted population in 2009 and reach 20% by 2013. This insecticide-based intervention is often threatened by the development of resistance. In Borno State, not much is known about the susceptibility status of the malaria vector: *An.gambiae s.l* to insecticides recommended for IRS. This study was carried out to provide baseline information to inform policy.

Objective : To assess the susceptibility status of *An.gambiae* to insecticide use in Indoor residual sprayingIn Northeastern Nigeria .

Methods : *Anopheles* larvae were collected from Muna in Jere Local Governement Borno State and reared in the laboratory . Insecticide susceptibility tests were carried out using the standard WHO protocol insecticide susceptibility test kits and impregnated papers. Two- to three-day old non blood-fed adult female *Anopheles* mosquitoes were tested. Batches of 20-25 mosquitoes were exposed to test papers impregnated with 0.1%, Bendiocarb 0.05% Deltamethrin, 5% Malathion and 4% DDT . Controls included batches of Anopheles exposed to untreated papers. The knockdown effect of each insecticide was recorded every 10 minutes over one-hour exposure period. Mosquitoes were then transferred to a recovery tube and provided with 10% glucose solution. Final mortality was recorded 24 hours post-exposure.

Results: Mortality recorded 24h post exposure indicated 100% susceptibility to three insecticides: Bendiocarb, Deltamethrin and Malathion. However resistance was recorded in the test population exposed to DDT with < 75% post exposure mortality.

Conclusion: This study underlines the need for resistance monitoring in Borno state and highlights the importance for routine resistance surveillance in Northeastern Nigeria where IRS intervention is ongoing.

Thursday 8th November 2012

Special Track

INAUGURAL MEETING OF THE SOCIETY FOR MOSQUITO CONTROL IN NIGERIA (SMCN)

The Society for Mosquito Control in Nigeria is a professional association formed in 2010 by a group of individuals involved in mosquito research and control programs in Nigeria. This not for profit association has membership from both the academia and public/private organizations committed to solving many complex problems encountered in the field of mosquito biology and control. Among these are the suppression of nuisance mosquitoes and disease vectors through integration of control measures, such as use of appropriate environmental friendly insecticides, Biological control, environmental management, health education and training. The association currently has 52 members within and outside Nigeria.

Key activities of the Inaugural meeting include:

- An address by the President of the Pan African Mosquito Control Association (PAMCA) Dr. Charles Mbogo from Kenya
- Meeting of the SMCN Board of Trustee
- Presentation and discussion on novel vector control tools

The meeting will also host guests from Senegal, Cameroon and Kenya. New members are welcome.

Luke, GI

Musa AZ

Niemogha MT
Nwadike PO
Nwaokorie FO

Odubela OO
Odunlade AK
Oke BO
Okoh HI
Olojede JB
Onwuamah CK
Orok AB
Osadare J
Oteju Sola O
Oyebola MK
Oyenuga MA

Salu OB
Samdi LM

Wapmuk AE
Wogu MN

Session Coding

- Example: WE1OP01 (We: Wednesday, 1: track number , OP: Oral Presentation, 01: Speaker order)