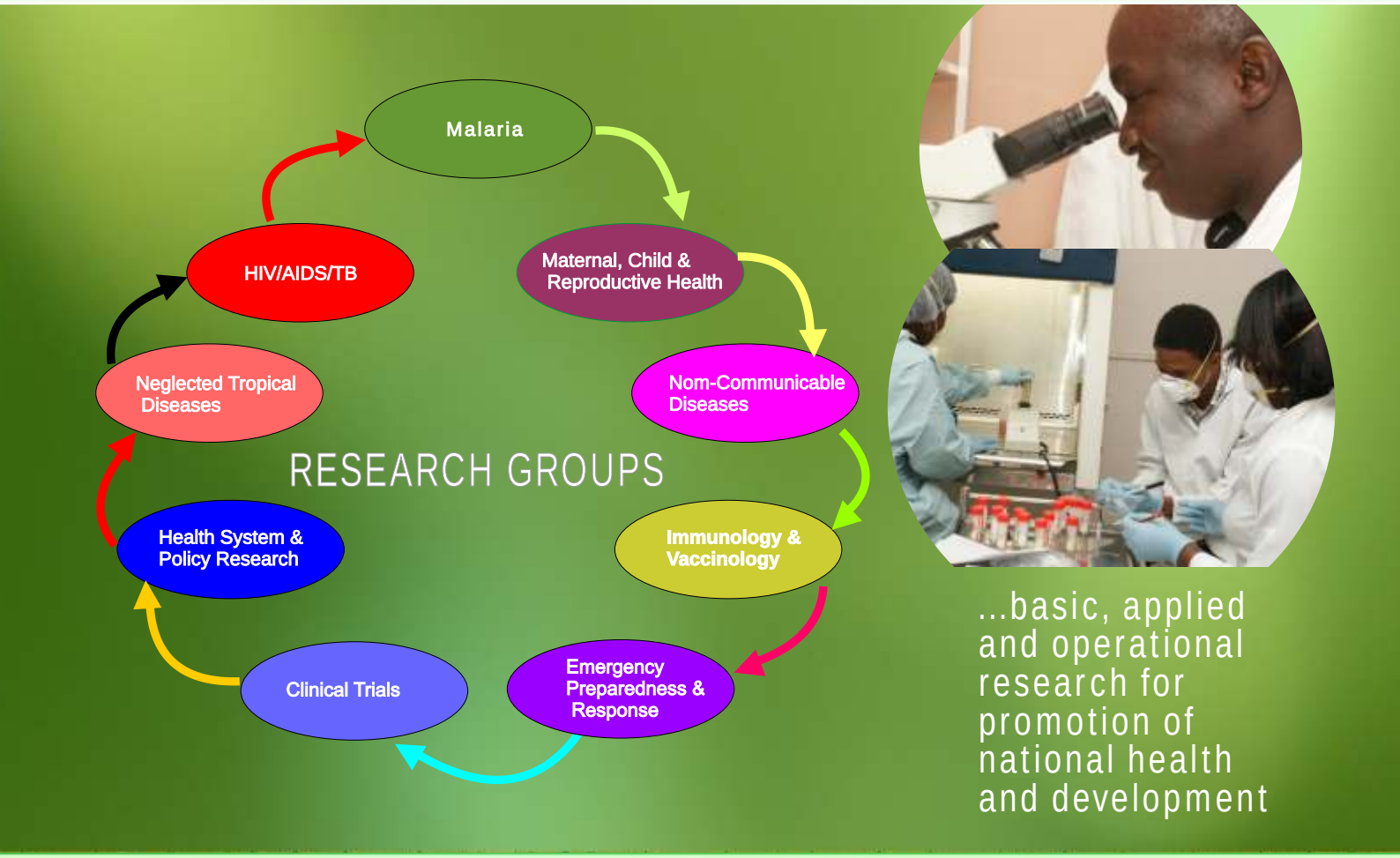
Nigerian Institute of Medical Research

NIMR



...basic, applied and operational research for promotion of national health and development

2012 Annual Report

2012

ANNUAL REPORT

Nigerian Institute of **Medical Research**

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Director - General

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Few of the pictures in this report were adapted from the internet

Goodluck Ebele Jonathan, GCFR
President, Federal Republic of Nigeria

Professor Onyebuchi C. Chukwu
Honourable Minister of Health,
Federal Republic of Nigeria

Muhammad Ali Pate
Honourable Minister of State for Health,
Federal Republic of Nigeria

Professor Innocent A.O. Ujah, mni
Director General,
Nigerian Institute of Medical Research

Contents

Director General's Foreword

The year 2012 was full of activities and ended on a very high note. The implementation of the 5-year strategic plan (an innovative approach to health–related research largely focusing on disease-based conditions) commenced with the formation and appointment of Heads of Research Groups. This was followed very closely with the establishment of Research Planning and Management Directorate and the appointment of its Coordinator. All these innovative approaches to health research were meant to appropriately respond to health research priorities of Nigeria as a contribution to the transformation agenda of the Federal Government for national development.

One outstanding achievement in the past year was the National Laboratory quality improvement training of Pathologists and Medical Laboratory Scientists from all parts of Nigeria on Strengthening Laboratory Management towards Accreditation (SLMTA) which was supported by International Association of National Public Health Institutes (IANPHI), Atlanta Georgia. The outcome of the quality training provided opportunity for IANPHI to consider designating NIMR as a Training Centre for quality Laboratory improvement for the West African Sub-region.

Another historical record was that the Institute, for the first time accessed and got Data Universal Numbering System (DUNS) number with National Institute of Health (NIH). Getting the number affords Researchers of the Institute to write for research grants in response to NIH calls for proposals, which hitherto, was impossible without DUNS number. By this singular achievement, our opportunity to access research funds from NIH has greatly improved and enhanced.

Our contribution to the Federal Government efforts at reducing mother-to-child transmission of HIV is palpable, as only 0.87% of babies born to HIV positive mothers on anti-retroviral therapy (ART) are positive for HIV as against 20-30% if they had not received the drugs and were not rigidly supervised in pregnancy.

The Institution's Review Board (Health Research Ethics Committee) was further strengthened through the reconstitution of the Board with the appointment of a world renowned Researcher, *Prof Friday Okonofua* as its new Chairman.

As part of awareness creation and public health education, the Institute commemorated World Cancer day, World TB day, World Malaria day, World Hepatitis day and World AIDS day. This also served as a strategy for increased health promotion and disease prevention. Dissemination of our research findings through print and electronic media was given top priority.

The 3rd NIMR International Scientific Conference was hugely successful, and had resource persons from WHO, Geneva and MRC, The Gambia. Participants came from the USA and all parts of Nigeria, and a communiqué that sought to raise the health research momentum which also a called for adequate funding for health research.

Collaboration and partnership between the Institute, national and International bodies and organizations have continued to grow and several memoranda of Understanding (MoU) were signed in the reporting year.

The Institute played host to scores of University Students from very many Nigerian Universities across the country. The students were educated on the mandate of the Institute and contribution of research to national development.

The welfare of our staff received prompt attention and all deserving staff where promoted. We have a robust pension scheme, and to the best of our knowledge, it is second to none in similar parastatals such as ours. The Institute has continued to enjoy high level of peace due to staff motivation, cordial and mutually beneficial relationship between management and staff. Also in the year, vehicles for field operations were procured to ease movements of researchers for field research. It is hoped that the currently existing friendly and peaceful work environment in the Institute will be further improved for maximum productivity.

During the year, many of our staff participated in several local and International conferences and trainings, which provided the much needed platform for shared experiences and acquisition of new knowledge for enhanced performance.

We believe that the coming year, 2013 will witness tremendous progress, as we continue our innovative and creative drive for quality health research through collaboration with the Federal Ministry of Health to produce Health Research Policy documents, for health research regulation and monitoring.

We are optimistic that 2013 holds great promise for greater achievements in terms of research outputs and infrastructural development.

Our major challenge was the renewed insurgents by Boko Haram which greatly affected our research activities at our Maiduguri Outstation, particularly the study of cross- border diseases among countries bordering Borno State which include Chad, Niger, and Cameroon. It is our hope that this uprising is quickly brought to an end to allow for normal activities to resume.

Finally, I appreciate the support and cooperation of management and staff for their commitment to health research and good neighborliness which ensured absolute peace and tranquility in the Institute throughout 2012

Professor Innocent AO Ujah, **MBBS, FMCOG, FICS, PGDM, FNSEM, mni**
Director General/CEO

About The Institute

BACKGROUND

Nigerian Institute of Medical Research is the oldest Health Research Institute in the country. Its history dates back to the arrival at Yaba of the British Yellow Fever Mission for West Coast of Africa in the first decade of the 20th century as an affiliate of the Medical Research Council of the UK. A Research Centre was then established for the monitoring and surveillance of yellow fever across the West Coast.

In 1954, the Research Centre was formally named the West African Council of Medical Research. On the attainment of Independence in 1960, the Centre was renamed the Medical Research Council of Nigeria (NRCN). Through the National Science and Technology Act of 1977, the Medical Research Council of Nigeria was renamed the National Institute of Medical Research. This name was further changed to the Nigerian Institute of Medical Research in 1993.

VISION STATEMENT

To be an Institution of excellence in basic, applied and operational research for the promotion of national health and development in Nigeria

MISSION STATEMENT

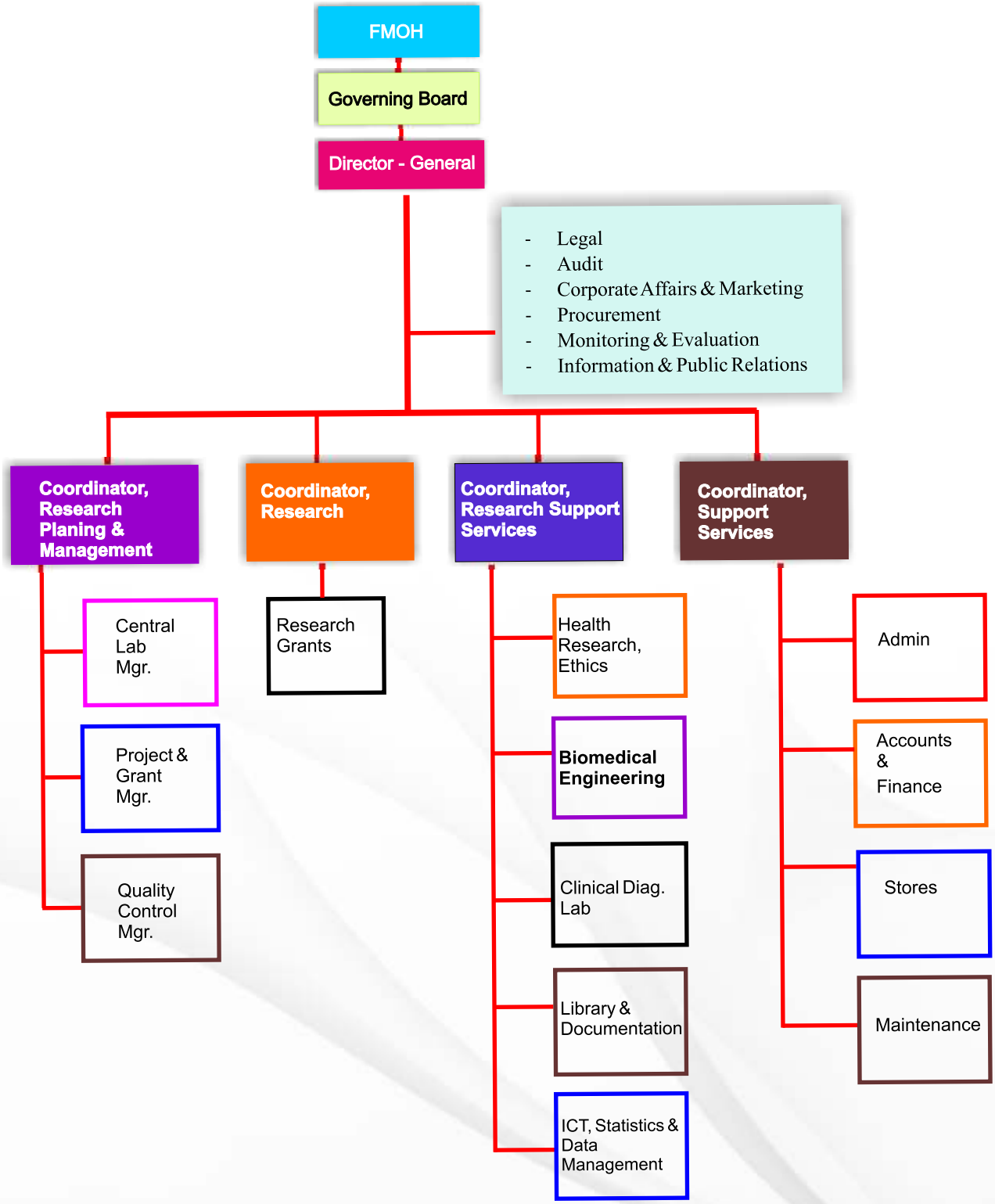
To conduct research into diseases of public health importance in Nigeria and develop structures for the dissemination of research findings while providing the enabling environment and facilities for health research and training in cooperation with the federal and state ministries of health and in collaboration with the Universities, allied institutions and organized private sector nationally and internationally.

MANDATE

The mandate of the Institute under the enabling Act of 1977, stipulates that it shall conduct research into health problems in the country essentially in the following areas:

- Communicable Diseases of Public Health importance in the country;
- Non-Communicable Diseases prevalent in the country;
- Basic, applied and operational research for the prevention and control of diseases endemic in the country in co-operation with the Federal and State Ministries of Health;
- Develop human and infrastructural capacities for clinical and biomedical research in collaboration with medical schools, universities and other health-related institutions, in and outside Nigeria.
- Disseminate the results of health research in the country through training courses, scientific publications, conferences, workshops and other communication channels to the Federal and States Ministries of Health, relevant stakeholders in both the public and private sectors as well as the general public.

Our Organogram

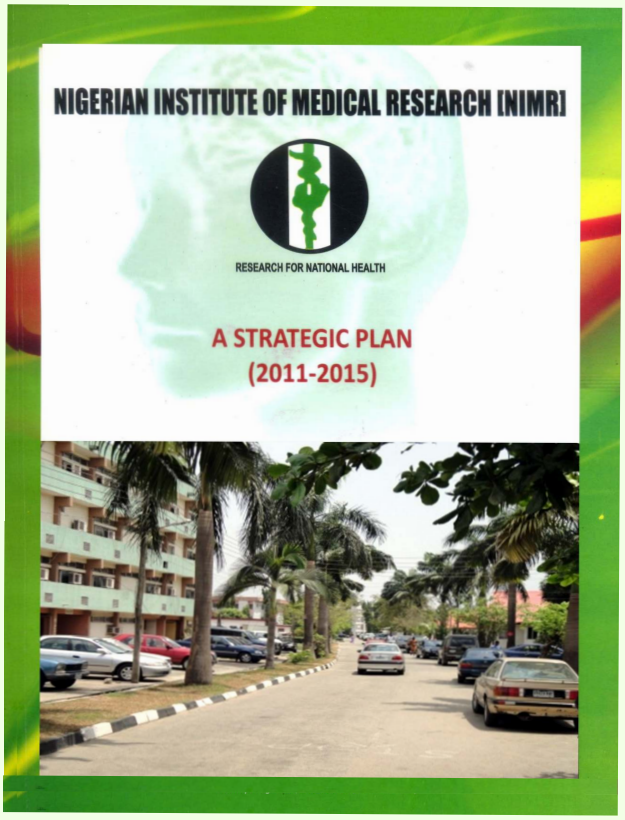


Highlights

FIVE - YEAR STRATEGIC PLAN

In 2012, the Director General of NIMR Professor I.O.A Ujah *mni*, commenced the implementation of five - year strategic plan aimed at promoting disease-based research Under the plan, researchers from various specialties and disciplines would brainstorm on a research study in order to produce strong evidence-based data/ information that will ultimately influence government policies. The nine research groups approved and in operation area:

- Malaria
- HIV/AIDS/TB
- Maternal, Child and Reproductive Health
- Non-Communicable Diseases(NCDs)
- Neglected Tropical Diseases (NTDs)
- Emergency Preparedness and Response (EPR)
- Health Systems and Policy Research
- Immunology & Vaccinology
- Clinical Trials



MID - TERM REVIEW

The Director General Prof. IAO Ujah *mni* marked second year in office by presenting **A MID-TERM REVIEW OF THE ACTIVITIES OF THE INSTITUTE from May 2010 - May 2012** to the Minister of Health, Professor Onyebuchi C. Chukwu, the research community and the press to increase advocacy and the level of awareness of NIMR contributions to development of human health research in the country

HONOURABLE MINISTER OF HEALTH VISITS TO NIMR

The Honourable Minister of Health, Professor Onyebuchi. C. Chukwu making a speech during an official visit to the Institute on 21st September, 2012.

Highlights

BIO - SAFETY LEVEL 3 MDR-TB LABORATORY

In 2012 NIMR collaborated with Partec to establish a “Centre of Excellence / Training Centre for HIV monitoring at our Human Virology Laboratory . This idea will support technicians who would be trained on the CyFlow System (including auto sampling and auto loading station). It could also be extended to the fields of malaria and tuberculosis diagnostics with the CyScope.

- The new Bio-Safety level 3(BSL3) MDR-TB Laboratoty supported by FHI_{360}

House Of Reps Committee On Health Visits NIMR

- The House of Reps Committee on Health led by Hon (Dr) J. Kigbu paid oversight visit to the Institute on 7th October 2012

2012

Scientific Seminars

The scientific seminar committee of the Institute is statutory mandated to organize bi-monthly research seminars to create the forum for sharing, discussing and disseminating research outcomes, findings and reports amongst researchers in and around NIMR; research collaborators, Stakeholders and Policy makers.

PRESENTER	TOPIC	DATE	DIVISION
DR. Y.A IWALOKUN	TOLL LIKE RECEPTOR 4 (TLR4) GENE POLYMORPHISMS AND CRISIS IN NIGERIAN SICKLE CELL ANAEMIA PATIENTS	FEBRUARY, 2012	BIOCHEMISTRY
DR. A..N DAVID	LONG TERM TREATMENT OUTCOME IN HIV INFECTED CHILDREN IN LAGOS, NIGERIA	14TH MARCH, 2012	CLINICAL SCIENCES
MR. A.P OKWURAIWE	IMMUNOLOGICAL AND VIROLOGICAL RESPONSE TO HAART IN HIV-1 PATIENTS CO-INFECTED WITH HEPATITIS B AND C VIRUSES	11TH APRIL, 2012	HUMAN VIROLOGY LABORATORY
DR. B.I.C. BRAI	AVOCADO LEAF EXTRACTS LOWER LIPIDS, OXIDATIVE STRESS AND PROTECT AGAINST CARBON TETRACHLORIDE INCLUDE LIVER DAMAGE IN RATS	30TH MAY, 2012	MOLECULAR & BIOLOGY BIOTECHNOLOGY
DR. N. IDIKA	AWARENESS AND UTILIZATION OF ROTARIX VACCINE AMONG CAREGIVERS OF CHILDREN UNDER FIVE YEARS IN LAGOS AND ITS IMPACT ON DIARRHOEAL INFECTIONS	13th JUNE, 2012	MICROBIOLOGY
DR. O.O AINA	MALARIOMETRIC SURVEY OF IBESHE COMMUNITY IN IKORODU OCAL GOVERNMENT AREA, LAGOS STATE	12TH SEPTEMBER 2012	BIOCHEMISTRY

Research Groups' Reports

Research Groups

MalariaMalaria

HIV/AIDS/TB

Non-Communicable Diseases

Maternal, Child and Reproductive Health

Emergency Preparedness and Response (EPR)

Health System and Policy Research

Immunology & Vaccinology

Clinical Trials

Prof. I.A.O Ujah *mni*
Director - General

The novel idea to move from research divisions to research groups is a welcome innovation to give a strategic direction to research activities in the Institute so that research can be done better within timelines, targets and indicators aimed at improving quality and productivity. It is also aimed at encouraging innovative health research that will respond to national health priorities of our nation and contribute to the attainment of health-related MDGs and vision 2020. According the Director General of NIMR, Professor IOA Ujah *mni*, "with the full implementation of the research group, we should be able to review our performance in 5 years' time and proudly assume a Centre of Excellence for Health Research not only in Nigeria but also worldwide"

Heads of Research Groups

Prof. Oni E Idigbe
Coordinator, Res. Planning & Mgt. ,
Head, HIV/TB Research Group

Dr. Margaret A. Mafe
Director of Research,
Head, Health System & Policy
Research Group

Dr. Adesina A. Adeiga
Director of Research
Head, Immunology & Vaccinology
Research Group

Dr. Nkiru N Odunukwe
Deputy Director
Head, Non Communicable
Diseases

Dr. Stella I.I Smith
Deputy Director of Research
Head, Emergency Preparedness
and Response (EPR),

Dr. Olaoluwa P. Akinwale
Deputy Director Research
Head, Neglected Tropical
Diseases (NTDs)Research Group

Dr. Oliver C. Ezechi
Chief Research Fellow
Head, Maternal,Sexual &
Reproductive Health

DR. T. S. Awolola
Chief Research Fellow
Head, Malaria Research
Group

Dr. Agatha N. David
Chief Research Fellow
Head, Clinical Trials

Malaria Research Group

The Malaria Research Group conducts research to improve understanding of the biology of malaria infection and studies to improve delivery and evaluate the efficacy of proven, cost-effective interventions for reducing transmission and severity of the disease in Nigeria. In line with the mandate of the Institute, the group provides research information and promotes timely communication of malaria research findings and outcomes by strengthening collaboration between malaria researchers and policy makers in Nigeria.

Members of Malaria Research Group

Dr. T.S Awolola	Medical Entomologist/Parasitologist (Group Head)
Dr. A Olukosi	Biochemist
Dr. BA. Iwalokun	Biochemist
Dr. O. Aina	Pharmacologist
Dr. B. Adewale	Medical Parasitologist
Dr. B.I.C Brai	Biochemist
Dr. C. Agomo	Medical Parasitologist
Dr. H. Okoh	Entomologist/Parasitologist
Mrs. J. Olojede.	Microbiologist/Entomologist
Mr. A. Adeneye	Medical Sociologist
Mr. A.B. Orok	Medical Parasitologist
Dr. L. Samdi	Medical Entomologist
Mrs. T. Fesobi	Laboratory Scientist
Mrs. V.N.V. Enya	Medical Laboratory Scientist
Mrs.. M.N. Aniedobe	Medical Laboratory Scientist
Mr. O. Ajibade	Parasitologist (Secretary)

A cross-section of the Malaria Microscopy Research Laboratory refurbished by the Institute in 2012

Malaria Vector Control and insecticide resistance

As new anti-malaria drugs and insecticides are being discovered, so is the malaria parasite and its vectors evolve mechanisms to stay ahead. The emerging threat of drug and insecticide resistance reveals that the battle against malaria is as important as ever. Research activity of the vector control unit of the research group includes:

TRACKING INSECTICIDE RESISTANCE

A field survey supported by the Institute and Vestergaard Frandseen Switzerland was conducted in four selected States (Borno, Ondo, Delta, Plateau) representing four of the six geo-ecological zones to determine the susceptibility of malaria vectors to insecticides used for malaria control. Findings showed resistance to three of the six insecticides currently used for malaria control in Nigeria. Resistance level varies from 22–30% in Plateau, 25–35% in Borno and 40– 70% in Ondo State. Data from the Delta State sites showed full susceptible (100% mortality) of the malaria vector to all insecticides tested. The study highlighted the need for appropriate baseline entomological information prior to vector control intervention using chemical insecticides in Nigeria.

Efficacy of Actellic 300 CS for indoor residual spraying against pyrethroid resistant malaria Vectors in Nigeria

The threat of insecticide resistance requires new tools and measures to mitigate its spread. Actellic 300 CS is a new organophosphate insecticide approved by WHO against pyrethroid resistant mosquito. The efficacy of this insecticide was tested in areas of insecticide resistance in Lagos and Ogun States. The Indoor residual spraying (IRS) with Actellic 300 CS was highly effective in the two areas. The residual efficacy was much effective in controlling resistance Anopheles mosquito and other nuisance mosquitoes for a period of six months when compared to ICON 10CS (a pyrethroid insecticide used for IRS in Nigeria). The results also showed the need to evaluate the efficacy of Actellic 300 CS against the resistance mosquito population beyond this initial six months to ascertain the duration of effectiveness and maximize its rational usage in resistance management.

Tracking anti-malaria drug resistance

Establishment of sentinel sites for malaria surveillance and anti-malaria drug resistance tracking in the six ecological zones in Nigeria is a key activity listed in the 2013 work plan of the Malaria Research Group. Research proposal to this effect had been developed for the Institute's consideration and funding.. Efforts are also being made to source for external funding to leverage funds to be provided by the Institute.

***Plasmodium* population genetics**

Adequate socio-demographic and epidemiological information are germane for proper planning of malaria research activities. This led the group to undertake a malaria research site characterisation at Takwa-Bay, Ibeshe and Ijede communities in Lagos State as a pilot study for other states across the 6 greo-political zones of Nigeria. Reports of findings based on data obtained from these sites are being compiled.

Host factors associated with *Plasmodium* infection dynamics in Nigeria.

Information on host factors that interact with malaria parasite, particularly *Plasmodium falciparum* are urgently needed for planning and implementing novel preventive interventions and improving case management in infected Nigerians. A proposal to this effect had been developed, with focus on children below 5 years and pregnant women across the 6 geo-political zones of Nigeria.

Malaria Microscopy Laboratory and Training:
The Institute established a malaria microscopy research and training laboratory in 2012. The goal is to place the Institute in a strategic position as a reference center for malaria diagnosis. The facility is adequate for malaria microscopy and could accommodate 30 trainees at a time. Activities carried out under this platform include:

In-house microscopy training:

This training planned for members of the malaria research group was held from. 30th January to 10th February 2012. It was designed as a refresher course aimed to update members skill and keep the group abreast of new development in the field of malaria diagnosis..

(ii) Malaria Microscopy Training Workshop:
This training program is routinely organised by the group and aimed at building a critical mass of microscopists needed for prompt diagnosis for effective scale up of malaria control interventions in Nigeria.The target audience include Medical Research Scientists, lecturers, laboratory scientists, postgraduate students and others interested in malaria diagnosis. The theme "Effective Malaria Diagnosis: sustaining the efficacy of Artemisinin-bassed Combination therapy", was carefully selected to serve the target audience. In all, 36 trainees participated, iincluding 26 participants from 16 LGAs in Lagos State (sponsored by the State Ministry of Health) and 7 other self-sponsored participants from Lagos, Cross River and ,Ogun States. Based on the outcome and feedback, a follow up course is being planned for the first quarter of 2013

CONFERENCES & WORKSHOPS

World Malaria Day 2012

The Malaria group in collaboration with the Malaria Society of Nigeria observed the 2012 World Malaria Day (WMD) on the 25th April, 2012. Activities to mark the WMD included a symposium, community sensitization on malaria control programs and free screening and treatment of malaria. In addition, 250 long lasting insecticidal nets were also distributed free to participants.

CONFERENCE AND PAPERS PRESENTED:

Awolola,TS. **Efficacy of three odour blends on mosquito behavior under natural condition**. Presented at the 4th ENAROMATIC conference 17 -18th October 2012, Athens, Greece.

Ajibaye, O. **Fourth West African Regional Workshop: Cell Biology of Infectious Pathogen** July 16 -27,2012, University of Ghana, Legon .

Orok, AB. West African regional workshop of cell biology of protozoan parasites, at the MRTC; BAMAKO, MALI, 15-29 Jan., 2012.

All members. 3rd International Conference of the Nigerian Institute of Medical Research , 5th -8th Nov, 2012.

CHALLENGES

***An enabling working environment*:**

This is a major challenge of the Malaria research group. Most laboratory activities are within the main laboratory complex. However, the epileptic power supply and periodic voltage fluctuation remain a major setback to research work. Aside the constant replacement of fluorescent tubes in the office and laboratories, the provision of surge protector and UPS has little effect on the power fluctuation resulting in damage of essential equipment.

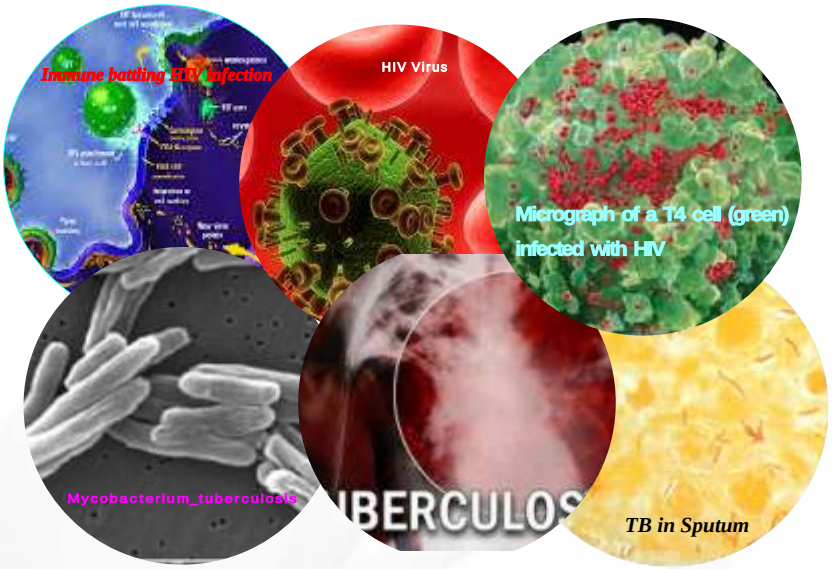
FUNDING

The malaria research group is not spared from the precarious research budget provided to the Institute by The Federal Government. Attempts by most members of the group to seek for external funding through research grants application had not been successful, largely due to lack of exposure and experience of majority of s cientists in the group. Arrangement are therefore being made to link with established malaria research programs and networks to provide the necessary exposure and skills for members of the group

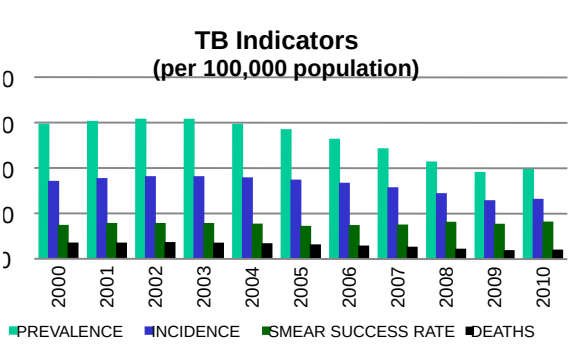
HIV/AIDS & TB Research Group

About The Research Groups

A new strategic plan was adopted in the Institute in the last quarter of 2011 and a provision in the strategic plan stipulated setting up of Research Groups based on specific programme areas. A total of 9 Research Groups were set up by the Director General in the first quarter of 2012. The HIV/Tuberculosis (HIV/TB) research group was one of the nine research groups.



SURVEILLANCE AND EPIDEMIOLOGY OF HIV/TB in Nigeria as at 2012



The inaugural meeting of the HIV/TB research group held on the 8th of March 2012. The meeting addressed the issues of establishing structures and targets for the effective operation of the group. Highlights of the meeting include:

- Strategy to contribute to the reduction of the national and global HIV/TB disease *burden* through researchTo generate scientific data that can help improve policies and interventions in the control of HIV and TB
- To coordinate basic, applied and operational research on HIV/AIDS in line with NIMR's mandate and the 2010-2015 strategic plan of NACA
- To coordinate applied and operation research on TB in NIMR in line with the Institute's mandate and the strategic plan of the TB and Leprosy Control Programme
- To disseminate important research findings / information on HIV and TB at both national and global levels
- Creation of HIV and TB sub-groups

Each sub-group is headed by a Leader and two Monitors were appointed to coordinate the overall activities of the groups and subgroups. Membership of the research group cuts across several research specialization.

Consequently, the research base and activities of the group will be supported by the following established structures:

The Human Virology Laboratory, the Tuberculosis National Reference Laboratory and HIV Care and Support Clinic(a National HAART Centre supported by APIN.Support

HIV/TB RESEARCH GROUP

Prof. E.O. Idigbe	Group Head
Dr. N.N. Odunukwe	Deputy Group Head
Dr. R.A. Audu	HVL unit
Dr. O. B. Salu	HVL unit
Dr. C. K. Onwuamah	HVL unit
Mr. A. Okwuraiwe	HVL unit
Mr. O.S. Amoo	HVL unit
Mrs. F.A. Ige	HVL unit
Dr. O. Ezechi	Clinical Sciences
Dr. A.N. David	Clinical Sciences
Dr. D. Onwujekwe	Clinical Sciences
Dr. P.M. Ezeobi	Clinical Sciences
Dr. T. Gbaja-Biamila	Clinical Sciences
Dr. D.A. Oladele	Clinical Sciences
Dr. B.O. Oke	Clinical Sciences
Dr. O.H. Ohwodo	Clinical Sciences
Dr. E.O. Somefun	Clinical Sciences
Mrs. J.O. Okwuzu	Clinical Sciences
Mrs. P.Austin-Akaigwe	Clinical Sciences
Dr. F.O. Nwaokorie	Molecular
Mr. T.A. Bamidele	Molecular Biology
Dr. C. Onubogu	Microbiology
Dr. N. Nwokoye	Microbiology
Ms. N. Onyejepu	Microbiology
Mrs C.N. Kunle-Ope	Microbiology
Mrs A.Z Musa	M & E Unit
Mrs. U. F. Sylvester-Ikondu	Med. Lab. Scientist I
Mrs. F.O. Okhiku	Med. Lab. Scientist I
Mr. P.D. Jamda	Med. Lab. Scientist I
Mrs. C. L. Okoli	Med. Lab. Scientist I
Mr. E.O. Odewale	Med. Lab. Scientist I
Mr. G. Liboro	Med. Lab. Scientist I
Mr. D. Achanya	Snr. Lab. Tech
Mrs M. Igbinavbiere	Science Lab. Tech. II
Mrs. C. Onyeitu	Science Lab. Tech. II
Mrs. R. Omoloye	Science Lab. Tech. II
Miss F. John	Laboratory Assistant

HIGHLIGHTS OF ACTIVITIES IN YEAR 2012

The most exciting event is the on-going expansion of the Human Virology Laboratory and the Bio-Safety L-3 TB Laboratory. This is an indication of growth as the HVL barely has enough space to accommodate its valuable equipment and staff. The BSL-3 Laboratory will enhance research and routine services rendered.

The research group organized by seminars to commemorate World Hepatitis and World AIDS Days, in collaboration with the Society for Gastroenterology and Hepatology in Nigeria, Lagos Chapter as well as the Clinical Science Division NIMR respectively. These events witnessed series of lectures and free screening for HIV, hepatitis and blood group investigation. The research group units actively participated in the national educational innovative exhibition in Abuja, showcasing high tech equipment and provided free screening and referrals for diseases of public health importance.

Child Health Sub-Group

Maternal Health Sub-Group

Reproductive Tract Infection/Diseases

Gender and women's Health

Maternal, Reproductive and Child Health Research (MaRCH) Group

As a group leader at the end of each year I reflect on how our activities have impacted on the health of women and children nationally and globally. After going through this annual ritual, I can confirm that our works have impacted positively on the lives of the most vulnerable population- women and children. It is not only rewarding but humbling

Another annual ritual I particularly enjoy is thanking my group members for their dedication to duty and desire to make a change in the lives of women and children, appreciating the Institution's management, many organizations and individuals for their support and, like Oliver Twist, asking for additional support in the coming year. Our activities are sustained because of your support, which gives our researchers the scientific freedom to create and explore the deep waters of women and child health.

In 2012, your support and the ingenuity of our researchers led to significant strides from basic sciences to bedsides and the community. Some of the achievements are highlighted in this annual report.

On behalf of every member of the research group,

I sincerely extend our sincere appreciation to you for sharing our 2012 experience with us.

Happy reading.

OUR WORK

Maternal, Reproductive and Child Health research group scientists are researching into ways of prevention, early detection and treatment of common diseases and conditions affecting women, children and men too. We are involved from basic molecular level to the community, aimed at identifying the mechanisms and personal, social and cultural factors that influence the likelihood of getting the common diseases and condition affecting women and children especially. Information generated from these researches is

Dr. Nkiru David **(Subgroup Head)**	Dr. O.C Ezechi (**Group Head)**	Dr. Adesina Adeiga **(Subgroup Head)**	Dr. Titi Gbajabiamila **(Subgroup Head)**
Dr. SI Smith Dr N. Idika Dr. Ezeobi P.M Mr. Orok A.B. Dr. Esther Somefun	Mrs. Jane Okuzu Pharm. Sabdat Ekama Dr. Dave Oladele Mrs. Afocha E.E. Dr. Agomo C.O. Mr. Ebenezer Odewale Prof. Innocent AO Ujah, *mni*	Dr. Dave Oladele Dr. Francesca Nwaokorie Dr. Sola Adesida Mrs. Ajoke Adagbada Dr. Nkiru Nwokoye Mr. Bamidele T.A Mr. Yisau J.I	Mr. Sola Ajibaye Miss Toyin Awoderu Mrs. Zaidat Musa Dr. Oke BO Prof. Innocent AO Ujah, *mni*

disseminated at national and international conferences and in peer review publications and policy briefs. We hope and believe that this knowledge will be used to reduce the risks associated with these conditions; thereby saving the lives of women and children.

RESEARCH ACTIVITIES

The research endeavour of the group covers a broad range of topics, including:

Basic Science – The group's basic sciences researchers are currently researching into Human Papilloma Virus genotype distribution among Nigerian women of known HIV status; effect of immunosuppression and antiretroviral therapy on HPV distribution and effect of HIV drugs on fertility. These studies will hopefully produce new insights on the basic biology of reproduction, cervical cancer and genital warts development.

Prevention – MaRCh Researchers work to prevent HIV, cervical cancer, maternal and infant morbidity and mortality and other diseases before they develop/occur, aimed at ensuring that women and children live healthier and longer lives. We are also investigating the potential impact of hand washing education in primary and secondary school on the health of children and young adults. We have also successfully implemented post exposure prophylaxis services for both occupational and non-occupational exposure to HIV and Hepatitis B viruses.

- Dr. F.O Nwokorie sorting out HPV samples for prior to DNA extraction

exposure prophylaxis services for both occupational and non-occupational exposure to HIV and Hepatitis B viruses.

Early Diseases detection – Scientific evidence has shown that the earlier diseases are detected, the more likelihood of achieving complete cure. We are conducting research on the best strategies to deploy proven tools for early detection of diseases and conditions and their performance in different conditions and settings. We are currently evaluating the performance of visual inspection of the cervix in identifying early forms of cervical cancer in our setting and in immunocompromised persons.

Treatment & Cure – The group pioneered the out-reach PMTCT programme for the prevention of mother to child transmission of HIV and treatment of maternal illness. Our clinicians and scientists introduced adolescent HIV club as a strategy to ensure improved knowledge of young persons living with HIV and prevent their advancing to full blown AIDS. We have also perfected a low cost strategy to achieve conception in serodiscordant couple.

Sexual violence – The group conducts research that addresses the physical and psychological effects of sexual violence and its treatment. This has helped to establish us as a leader in rape crisis management, education and research.

PUBLIC HEALTH SEMINAR

Our group in collaboration with Social Medicine and Global health (SMGH), Faculty of Medicine, Lund University, Malmo Sweden organised a 2 day seminar on public health services in Nigeria, lesson from Sweden. The Guest speaker was Dr. Per Olof Ostergren, Professor of Epidemiology and Global health and Head SMGH, Faculty of Medicine , Lund University, Malmo Sweden. Dr. Karen Odberg Petterson, Associate Professor SMGH, Faculty of Medicine , Lund University, Malmo Sweden conducted an introductory course on qualitative research methods for staff of the institute on the second day of the visit. The two day event was well attended by staff and non-staff of the Institute

Dr. Per Olof Ostergren and Dr. Karen Odberg Petterson in group photograph with the Director General, HOD, Clinical Science, Actg. Director of Admin and other senior staff of the Institute

·TRAINING OF COMMUNITY- BASED WORKERS ON RESEARCH CONDUCT

Evidence has shown that the outcome of a research endavour is dependent on the quality of data collected, which depends on the individuals that collected the data. Community entry is a major barrier to the quality of data collected irrespective of the quality of data collectors. To remove these barriers to quality research endavour, we designed a training programme to strengthen the capacity of community based workers to assist with research. This is aimed at using trained community members to conduct research in their community. This will remove the twin challenge of research capacity and community barriers. Twenty seven community health extension workers were mobilised at training on research conduct.

- **Some members of (MaRCH) Research Group in group photograph with participants during the capacity training for community-based health workers**

COMMUNITY SERVICE/ACTIVITIES

During the year, the group embarked on some projects aimed at reducing the morbidity and mortality associated with common diseases in our neighbouring communities. In this report we share with you one of such project.

- Cross section of pupils from ten primary schools in Lagos Nigeria during the children's celebration at NIMR in May, 2012

INFECTION CONTROL

In the realisation that basic knowledge of hand washing reduce the burden of respiratory and gastro-intestinal infectious diseases and promote better health especially in our children, the child health sub group, organised a hand washing programme for primary schools in our neighbourhood in commemoration of the 2012 children's day.

Proper hand wash technique focusing on the 4 principles of hand awareness was demonstrated to 300 Children from 10 primary schools in Mainland LGA.

The programme was moderated by Drs. Francisca Nwaokorie and Agatha David. The programme featured health talks brought together, stake holders in Public health and Primary Education Sector in Lagos State and the media.

Finally, thank you for taking time to go through our 2012 annual report. Please feel free to give us feedback and suggestions on how to improve our services and programme at

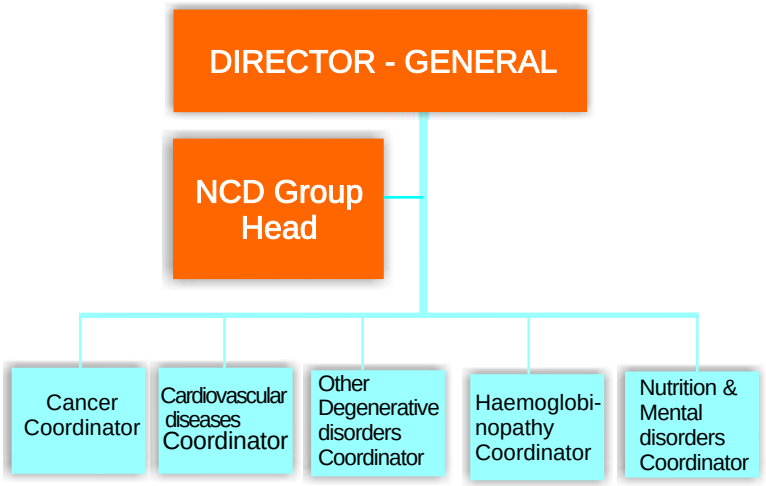
- Dr. F.O. Nwokorie and Dr. A.N David demonstrating proper hand wash technique to the pupils

Non-Communicable Disease Research Group

Member of NCD Research Group

Prof. I. O.A Ujah *mni*	Director General
Dr. M. A. Mafe	Director of Research
Dr. N.N. Odunukwe	Group Head / Deputy Director of Research
Dr. O. A Akinwale	Deputy Director of Research
Dr. K.N Egbuna	Chief Research Fellow
Dr. Iwalokun BA	Senior Research Fellow
Dr. O. O. Kalejaiye	Senior Research Fellow
Dr. Brai B.I.C	Senior Research Fellow
Mr. Adeneye	Research Fellow II
Mrs. O Ojerinola	Chief Lab. Technologist
Mr. A. OROK	Junior Research Fellow
Mr. O. Ajibaye	Junior Research Fellow
Mr. I Essien	Lab. Scientist

ORGANOGRAM FOR NCD RESEARCH GROUP



As part of implementation of the Institutes new strategic plan, (9) nine research groups leaders were appointed. Subsequent to the appointment of Dr N. N. Odunukwe as the Leader of Non Communicable Diseases research group on 25/1/2012 and the release on 2/2/2012 of the circular NIMR/DGO/CF/8, listing the members of NCD group, the following activities were embarked on:

1) Series of group meetings
2) Workplan, research plan and proposal development
3) Financial framework development plan
4) Capacity strengthening/development
5) Research activities.

Group Meetings

The NCD research group had three general Group meetings on 12/3/2012, 19/3/2012 and 23/4/2012. Thereafter there have been numerous subgroup and committee meetings, (minutes of the general meetings are filed and are with the secretary).

General Workplan for the group 2012 – 2013

A general work plan for NCD research group was developed and submitted to the Director General. The workplan detailed all the expected activities of the group till December 2013.Highlights of the activities are as follows:-

Development of administrative structure and organogram for the group.

The expected outcome was that the research subgroups will become operational subsequently, part of the indicators was no number of functional committee evidenced by measurable research activities

Research plan and Proposal Development
A detailed power point presentation was made by the group leader highlighting NCD research areas of National importance, identifying the research gaps and possible areas of research in NIMR. The outcome was that detailed research workplan with timelines and budget was produced. The indicator is the number of protocols developed and submitted to the group leader.

Financial Framework
Ded. It is expected that the outcome will be generation of sufficient resources to enable the group function effectively. Part of the indicators is the number of grants secured.

Capacity Development
Since the group has not gotten any new grant either from the Institute or other funding agencies, members were encouraged to seek means of personal development pending the release of seed money from the Institute for capacity development in the area of fundable research proposal writing. The expected outcome is improvement of research productivity from the group. Indicator is number of trained NCD research group members.

RESEARCH ACTIVITIES

Part of the research activities are identification of collaborators from the six geopolitical zones and development of National working group, approved protocols, seeking and obtaining IRB approvals, field and laboratory work.
The expected outcome is formation of more National research networks in all the under listed groups:-

- Nutrition and Metabolic disorder research group co-ordinated by NIMR
- Haemoglobinopathies
- Cardiovascular disease research
- Cancer research
- Degenerative disorders

OTHER ACTIVITIES

Marking of World Diabetes Day

The Non-Communicable Diseases Research Group of the Nigerian Institute of Medical Research (NIMR NCD Research Group) in collaboration with Diabetes association of Nigeria, Lagos State Chapter, organized a symposium to commemorate the 2012 World Diabetes Day. The event was held at the auditorium, Nigerian Institute of Medical Research, 6 Edmund Crescent, off Murtala Mohammed Way, Yaba, Lagos, Nigeria on the 13th of November 2012 to raise awareness of diabetes, educate and engage Nigerians on diabetes throughout the country.

A total number of 144 Scientists, Researchers, Clinicians, Administrators, School Instructors, students, community leaders and Policy makers from the six geo-political zones of Nigeria, as well as experts from non-governmental organisations (NGOs), civil society organisations, the Nigerian army, World Health Organisation (WHO), Pharmaceutical companies, media agencies and the general public participated at the symposium. The symposium featured distinguished lectures by experts in diabetology, endocrinology and nutrition, focusing on diabetes and its prevention, types of diabetes, diabetes and nutrition, care, diabetes in adolescents and diabetes and advocacy in Nigeria. The symposium also featured health product exhibition by SWIPHA, public sensitisation on radio and television programmes and poster campaigns on diabetes to foster awareness and educate the Nigerian community on diabetes prevention, treatment and control.

The symposium was chaired by Professor Augustine Ohwovoriole, Consultant Endocrinologist, formerly of College of Medicine, University of Lagos. The distinguished lectures at the symposium were presented by Dr. Antonia O. Ogbera, Consultant Endocrinologist, Dr. Anthony Usoro, the National Co-ordinator of Non-Communicable Diseases in the Federal Ministry of Health, Abuja, Dr. Nkiru Davids, a Consultant Paediatrician in NIMR, Dr. B.I.C. Brai, a Nutritional Bio-chemist and Dr. Omowunmi Bakare, an Educationist representing His Excellency, Mr. Babatunde Raji Fashola (SAN), the Executive Governor of Lagos State. Other guests at the symposium included Dr. Arowolo from WHO. The Chief Host of the occasion was Prof. Innocent Ujah, mni, the Director-General, NIMR. Dr. Nkiruka N. Odunukwe, Deputy Director Research and the Head of NIMR NCD Research Group, co-ordinated the whole activities for the 2012 World Diabetes Day commemoration.

FREE SCREENING

As part of the activities for the commemoration, free screening for diabetes, hypertension and obesity was conducted on volunteers from the public on November 12-14 2012 at NIMR, Yaba, General Hospital, Isolo and the palace of Osolo of Isolo.

ACHIEVEMENTS SO FAR

- Developed detailed 2012-2013 workplan (appendix I)
- Developed Administrative organogram
- Contact has been made with FMC Ebute- Metta and the National Coordinator of SCD treatment group for collaborative research activities
- Finance
- Proposals have been written and submitted for grants; contact is being made with Private Business Company to sponsor the completion of cancer building (former uncompleted Library building).

Ø Capacity Development
Attendance of both local and international conferences and workshops by Members

Ongoing Research Activities

- Intervention study on NCD disease and preventable lifestyle Risk factors in three urban slums of Lagos Nigeria
- National Multiple Myeloma survey
- Screening for Papilloma virus in prevention of Cervical Cancer.

Proposed Research Activities

- Flowcytometric Immunophenotyping of various cancers in Nigeria (Protocol developed)
- Review of incidence of SCD in Nigeria
- Survey and mapping of causes of sudden deaths in various geopolitical zones of Nigeria.
- Survey and mapping of NCD related morbidity and mortality in various geopolitical zones of Nigeria.
- Development of Breast and Prostate cancer screening tools.
- A 10 year Meta analysis of NCD in Nigeria?
- HLA Phenotyping clustering in Nigeria in preparation for stem cell transfusion in eligible SCD and cancer patients.

Ongoing NCD related research work.

1. Cancer Research network

Since after the inauguration of the network in January 2011, the Zonal members have been interacting with the National Coordinator and Data Collection tools have been developed for pediatric oncology and multiple myeloma studies. Zonal collaborators for MM studies have received the tools and are currently collecting and forwarding data to the coordinator.

2. Intervention studies on NCD
3. Renal carcinoma: The seventh Nephropathy in SCD – A Nigerian Incidence evaluation – data collection is going on nationwide
4. Stroke Prevalence – data collection ongoing
5. Cervical cancer screening

Strength

- Some level of encouragement from the Director General
- Co-operation of dedicated members
- Team spirit and Faith in God

Major Constraints

(1) Non – availability of fund
(2) Very few committed and available members

Suggestions for the way forward

- More Motivation for workers
- Aggressive drive for grants from various sources and by all members
- More dedication by all members as will be shown in contributions and attendance to meetings.

Health System & Policy Research Group

Health System & Policy Research - Team

Professor I.O.U. Ujah, mni	Coordinator
Dr. M. A. Mafe	Group Head
Dr. A. A. Adeiga	Deputy Director
Dr. Onubogu	Chief Research Fellow
Dr. Audu R. A.	Chief Research Fellow
Dr. M. A. Sulyman	Research Fellow I
Mr. Adeneye A.K.	Medical Sociologist
Mr. Yinka Adesanmi	Junior Research Fellow
Dr. Nwaokorie	Research Fellow I
Dr. B. A Adewale	Medical Parasitologist
Dr. Ezeugwu	Chief Research Fellow
Mrs. Zaidat Musa	Research Fellow
Mrs. Afocha	Junior Research Fellow
Mrs. Goodluck	Junior Research Fellow
Mr. R. A. Raheem	Chief Med. lab. Sci
Mrs. Otuonye	Chief Med. lab. Sci.
Mr. Enwuru	Asst.Chief Med. lab. Sci
Mr. D. Akande	Asst. Chief Med. lab. Sci
Mr. Akindele	Chief Med. lab. Sci
Mr. Yisau Jacob	Member & Secretary

The conduct of research activities, through Research Groups, came into operation at the Institute, in 2011; hitherto, research activities had been operated through Research Divisions. The Health Policy & Systems Research Group (HP&SRG) is a relatively new research concept of the 9 newly introduced Research Groups at the Institute
Health Systems research is the production of knowledge and applications to improve how the planning, management and financing of activities to improve health, as well as the roles, perspectives and different actors in this effort to achieve health goals. It also evaluates policies for achievement of set objectives and intended consequences, which may lead to new policy formulation.

Nigeria has poor health performance indices; high maternal and child mortality rates, as well as low life expectancy which accounted for its ranking as one of the countries with the worst performance in the health sector, 187th out of 191 WHO member states (WHO, 2000). Factors responsible for the poor performance include poor organization, poor stewardship, poor financing and poor provision of health services

; fragmentation, weak and ineffective referral systems, low level of financial risk protection for the poor and gross under-utilization of public health facilities. Nigeria is also rated as the country with the 2nd highest level of Out-of Pocket-spending contributing to health financing in the world. The lack of health information /data for planning purposes; the poor knowledge management culture and limited access to health information generated within the system promote poor evidence-based decision making, leading to poor implementation of health policies. One of the key capacity constraints of policymakers is the inability to effectively use research evidence, when available, in policy-making. Bridging this gap on lack of evidence-based decision/policy making requires operations research; basic research and, monitoring & evaluation..

The strengthening of our health systems is of utmost importance in the improvement of national health and the achievement of set goals such as the Millennium Development Goals and the national Vision 2020:20.

Research interests of the Group revolve round the 4 vital functions of the health systems which are: *Service provision; Resource generation; Financing and Stewardship.*

Our priority health research, to significantly contribute to health policies and programmes fall within the following areas: Equity in the health system (addressing poverty and foster development); Efficiency; Sector analysis; Management and Organisation; Disease burden; Financing; Quality of care; Research system; Human resources; Programme evaluation; Community participation; Health promotion strategies; Information systems and health monitoring systems

Vision: Generate relevant health systems knowledge for evidence-based decision making for optimal health of Nigerians**.**

Goal: To contribute to improving health service delivery (access, equity, efficiency) using evidence in developing strategies and shaping effective health policies.

OBJECTIVES:

1. To stimulate and generate relevant health systems knowledge for evidence-based decision making
2. To determine effectiveness of managed health care
3. To assess access and equity among mothers and children <5 years to health care services in context of achieving MDGs 4 & 5
4. To build team members' capacity for health policy & systems research.
5. To analyze health policies and generate evidence towards the review or formulation of new health policies.

GROUP MEMBERS

The Group is gradually getting the right complement of staff as HP&SR requires a multidisciplinary base: epidemiology, anthropology, political science, sociology and economics; although it collaborates with other tertiary institutions in addressing this presently.

ACTIVITIES

Research conducted during the year was on:
Situation Analyses of Health Research in the Nigerian Health System with Focus on Ministries of Health,Federal Medical Centres, Specialist Hospitals and, the Local Government Health Departments.

The study, conducted in seven States of the Federation, 21 Local Governments Areas as well as the Federal Capital Territory (FCT), Abuja (Tables 1 & 2), sought to assess the status of, and financial allocations to health research at the three levels of governance, and also to identify gaps that need to be addressed towards strengthening the national health system to deliver effective, efficient, quality and affordable health services for improved health status of Nigerians. Since health research should reflect highest ethical standards, the institutions were also assessed for ongoing actions necessary to develop and further improve good research practice such as the existence and, use of Institutional Review Board.

The objectives of the study were:

i) To assess spending on health research at the federal, state and local government levels

ii) To determine capacity for health research at the 3 levels (human and infrastructure)

iii) To determine the type and level of research activities undertaken at the various health Ministries and, the Federal Medical Centres as well as at the LGA Department of Health

iv) To determine capacity for ethical review of research

v) To assess the methods of dissemination/ communication of research findings and use in informing policy

vi) To generate evidence on evidence based decision-making

Study sites in seven states of the Federation, 21 Local Governments Areas as well as the Federal Capital Territory (FCT), Abuja (Tables 1 & 2),

TABLE 1:PHASE 1 STUDY STATES + F.C.T.

State	Geographical Zone	L.G.A. (By Senatorial District)			Ministry of Health	Tertiary Health Institution
		1	2	3		
*F.C.T.	NC	**Gwagwa Area Council**	**Municipal Area Council**		FMOH, **Garki**, Abuja	National Hospital, **Abuja**
Lagos	SW	**Badagry** (Lagos West)	**Epe** (Lagos East)	**Surulere** (Lagos Central)	State MOH, **Alausa, Ikeja**	Orthopaedic Hospital, **Igbobi**
Ondo	S.W.	**Akure North** (Akure North central)	**Owo** (Ondo North)	**Ileoluji/Oke Igbo** (Ondo South)	State MOH, **Akure**	Federal Medical Centre, **Owo**
Imo	S.E.	**Okigwe** (Imo North)	**Orlu** (Imo West)	**Owerri Municipal** (Imo East)	State MOH, **Owerri**	Federal Medical Centre,**Owerri**
Calabar	S.S.	**Ogoja** ()	**Abi** ()	**Calabar Municipal** ()	State MOH, **Calabar**	Federal Neuro-Psychiatry Hospital, **Calabar**

TABLE 2:PHASE 2 STUDY AREAS

State	Geographical Zone	L.G.A. (By Senatorial District)			Ministry of Health	Tertiary Health Institution
		1	2	3		
Benue	N.C.	**Apa** (Benue South)	**Katsina Ala** (Benue North East)	**Makurdi** (Benue North West)	State MOH, **Makurdi**	Federal Medical Centre, **Makurdi**
Sokoto	N.W.	**Yabo** (Sokoto East)	**Raboh** (Sokoto South East)	**Sokoto North** (Sokoto North)	State MOH, **Sokoto**	Neuro Psychiatry Hospital, **Sokoto**
Gombe	N.E.	**Yamaltu (Debo)** (Gombe Central)	**Kaltungo** (Gombe South)	**Gombe** (Gombe North)	State MOH, **Gombe**	Federal Medical Centre, **Gombe**

EXPECTED OUTCOME

i) The status of health research in the institutions would have been defined and documented.

ii) Evidence on the utilisation of research output to inform policy would have been generated

iii) The level of research funding (Budgetary allocation, approval and Release) would have been determined

iv) The required capacity building needs would have been identified at both the State and LGA levels

v) Programs will be developed to address the gaps for enhancing capacities of the Directorates of Planning, Research and Statistics at Federal, State and the Local Government levels and the Tertiary Health Institutions (FMCs & Specialist Hospitals).

vi) Advocacy tools for awareness creation about the role of health research in national development, and mobilisation of more funds

for health research at all levels of health system would be developed and disseminated.

TRAINING

Training of Group members is a continuous process. Given that; this particular Group is a relatively new research concept at the Institute, a lot of emphasis was placed on training of group members during the early interactions of the group on Health Policy and System Research. Consequently two training sessions which gave insight on Health Policy and Systems research were conducted with presentations from the Group Leader.

The training sessions were on:

1. Overview of Health Systems and Policy Research
2. Situation Analyses of Research in theNigerian Health System with Focus on Ministries of Health, Federal Medical Centres and the LGAs.

WORKSHOPS:

- Dr. C.C Onubogu and Dr. R.A Audu participated in the Nigerian Academy of Science and Lagos State PREVIEW project workshops which focused on Getting Research into Policy and Practice(GRIPP).
- Dr. M. A. Mafe, Dr. A.A Adeiga and Mr. A.K Adeneye attended the programme on: Intellectual Property Issues in Research organised jointly by the Lagos State University Teaching Hospital with the Universities of Bournemouth and Northampton, U.K.
- Dr. M.A. Mafe attended, as an Adviser, the World Health Organisation meeting held on Neglected Tropical Diseases in Zambia.
- Dr. M.A. Mafe served as member of the Lagos State Ministry of Health Committee on Human Resource for Health.

- Dr. M.A Mafe, head HSRG with a sftaff of Federal Medical Centre in Sokoto

(Picture left)

Mrs. A.Z Musa with Coordinator and Deputy Coordinator of HCT of Ile-Oluji /Okegbo LGA, Ondo-State

- Federal Medical Centre, one of the data collection centre

- A local government staff filling the research questionnaire in Sokoto State

- A LGA Chairmen filling research questionnaire in Gombe State

- Head of Clinical Governance, SERVICO and E-Health Department, Cross River State Ministry of Health filling research questionnaire

Neglected Tropical Diseases (NTDs) Research Group

Group Members

Dr. P.O Akinwale	Deputy Director of Research / (Group Head)
Dr. M.A Mafe	Director of Research
Dr. Y.A Olukosi	Senior Research Fellow
Dr. M.A Sulyman	Research Fellow I
Mr. A.K Adeneye	Research Fellow II
Mr. P Anochie	Junior Research Fellow
Mrs. J. Okwuzu	Research Fellow II
Mr. A. Adesanmi	Junior Research

In Nigeria, endemic neglected tropical diseases (NTDs) include onchocerciasis, schistosomiasis, soil transmitted helminths, lymphatic filariasis, leprosy, buruli ulcer, leishmaniasis, dengue fever, guinea worm, human African trypanosomiasis and trachoma. A blue print for the elimination NTDs have been in existence, established by World Health bodies (WHO) with private, public partners, nevertheless, integrated control of NTDs is at its infancy stage in Nigeria. Efforts since 2010 are to up-scale significantly and NIMR has done well to establish a NTD research group following this queue. Since inception, the group has met several times during which the mission and objectives were articulated and work plan drawn in line with these.

Our Mission: is to contribute to effective control of Neglected Tropical Diseases in Nigeria by identifying research gaps and opportunities, while focusing activities on current areas of research needs

Our Objectives are:

• To identify the present status on NTDs in Nigeria by finding out what has been done and what is yet to be done and the areas of research needs that NIMR as a research institute can make an impact. Also the international focus should be considered in seeking grant.

• To seek funding agencies for grants on NTDs through the websites of such organizations, also to find out possible sources from within Nigeria

•To seek collaboration with the FMoH (Dr Nebe) and reopen discussions with MDCN Ouagadougou (Dr Toe Lorence) on the Onchocerciasis surveillance in West Africa.

•To develop research capacity for NTDs in group members

Proposed Activities:

- Capacity Development for the group has been proposed on “Methods in determining burden of disease

-Proposal to conduct risk assessment of Buruli ulcer

Proposed Activities include:

i) Research proposal and obtain ethical and administrative approvals

ii) Pay advocacy visits following forwarding of letters in respect of intention and obtain administrative approval
iii) Procure materials & develop study tools
iv) Training on study tools
v) Pilot test study instruments
vi) Finalise study instruments and procedures and produce final copies
vii) Conduct field data collection by collecting data on: (a) Extent of knowledge of the diseases among health workers and the general public.
(b) Case definition of the diseases in the laboratory and at the community level.
(c) Training needs of health workers and community health workers.

Expected Outcomes:

Evidence generated on the diseases among health workers and the general public
Evidence on case definition of Buruli ulcer in the community and laboratory
Identify necessary interventions for building capacity in health care workers
Provide evidence on presence and functionality of surveillance system on the diseases at the State and LGA levels.
Provide evidence on the M & E process of control activities on the diseases.
• d) Determine presence and functionality of surveillance system on the diseases at the State and LGA levels.
• (e) Document and compare the surveillance systems at the State and LGA levels.
• (f) The M & E process of control activities on the diseases.
• viii) Anchor production and use of policy briefs targeted at various audience in the Institute.
• ix) Group meeting on data appraisal
- x)Data management - cleaning, coding, entry and analysis
- xi) Report writing
- xii) Debriefing- stakeholders' meeting

Challenges in control of NTDs documented by the group include:

1.)Inadequate financial resources.

2.)Inadequate knowledge on the distribution

and overlap of various NTDs in the nation.

3.)Access problem to national data banks on NTDs.

4.)Inadequate risk assessment and surveillance

systems to forecast environmental changes of

relevance to upsurges or outbreaks of NTDs. The availability of this data will be useful in providing a continuously updated, gender- and age-disaggregated situation analysis of existing and imminent public health conditions in specific settings in order to identify populations at risk andforecast upcoming disease hot spots, thusproviding not only early warnings for epidemicsbut also evidence for long-term planning under more stable conditions.

Intervention study on non-communicable diseases and preventable lifestyle risk factors in three urban slums of Lagos Nigeria

Akinwale OP, Adeneye AK, Musa AZ, Oyedeji KS, Sulyman MA, Oyefara O, Adejoh P, Adeneye AA

Lagos State, South-West Nigeria, has a population of about 17 million out of a national estimate of 150 million. Of this population, Metropolitan Lagos, an area covering 37% of the land area of Lagos State is home to over 85% of the State population. The metropolis represents the epitome of urban decay replete with environmental problems ranging from slums and squatter settlements, to crime and delinquency. Slum populations in Lagos, just like in other parts of the world, are faced with problems of non-communicable diseases (NCDs) partly due to unhealthy lifestyles.

This multi-centre study was therefore designed and aimed at promoting healthy lifestyles in selected three urban slums in Lagos State. The communities selected for this study were: Ajegunle, Ijora Oloye and Makoko. The choice of the study locations was informed by their (i) official classifications as urban poor communities, (ii) diversities in terms of various ethnic groups and (iii) location within Lagos metropolis. The project was conducted between May 2010 and May 2012. Key methodologies for baseline, intervention and end line data collections were cross-sectional survey using semi-structured questionnaires, in-depth interviews and focus group discussions (FGDs). Simple but standard diagnostic tests were also performed to assess the correlates of some of the NCDs such as the body mass index (BMI), random blood health talks and workshops were organized for eight months after the baseline study. This is to inform and educate the people on behavioral change and adopting healthy lifestyles. Appropriate IEC/BCC materials were developed for various identified groups based on the outcome of the baseline study. Non-Governmental Organizations (NGOs) and health care providers within the study communities were also identified for referral of participants that needed health care based on the outcome of the diagnostic tests.

Quantitative data generated from the study showed cases of high blood pressure to be more common among respondents 55 years and above, followed by respondents within the age range of 45-54 years old. The results of the respondents' BMI from the three communities showed that 4.3% were underweight, 47.0% were within the normal range, 27.1% were found to be overweight, while 19.0% were obese. More females were found to be overweight and obese than males. Overall, the results showed that many of the inhabitants of the study communities are now aware of their lifestyles which are risk factors for NCDs and are changing to live healthy lives. Their health seeking behaviour has also improved compared to what it was at baseline.

Clinical Trials Research Group

Group Members

Dr. A.N David	Chief Research Fellow / Group Head
Dr. T.Gbajabiamila	Research Fellow I / Deputy Group Head & FP, GCP
Dr. O.CEzechi	FP, DSM
Dr. N.N Odunukwe	Chief Research Fellow
Dr. D.I Onwujekwe	Chief Research Fellow
Dr. O.O Kalejaiye	Senior Research Fellow
Dr. J.Iwuorah	Consultant Physician
Dr. P.M Ezeobi	Research Fellow I
Dr. D Oladele	Research Fellow I / FP, Ethics
Dr. V.C Gab-Okafor	FP, Publicity/Advocacy
Dr. B.A Oke	Junior Research Fellow
Mrs.SO.M.Ekama	Junior Research Fellow
Dr. A.A Adelga	Deputy Director of Research
Dr. R.A Audu	Chief Research Fellow / FP, GCLP
Mr. S. Amoo	Junior Research Fellow
Mrs. L.Okoli	Senior. Med. Lab. Scientist
Mr. G Liboro	Senior. Med. Lab. Scientist I
Mrs. C Onyeuti	Member
Dr. C.C Onubogu	Chief Research Fellow
Mr. A Okwuraiwe	Research Fellow II
Dr. N.N Nwokoye	Research Fellow II
Mrs.A.O Adagbada	Research Fellow II
Dr. H.I Okoh	Research Fellow I
Dr. C.O Agomo	Research Fellow I
Ms.O Awoderu	Junior Research Fellow
Dr. B.A Iwalokun	Chief Research Fellow
Dr. A.Y Olukosi	Chief Research Fellow

OUR STRATEGIC THRUST

- **Vision**

  To become a centre of excellence for clinical trials in Nigeria

- **Mission**

  To develop capacity for the conduct of Clinical Trials through trainingss and partnerships with other stake holders within and outside the country, conduct state of the art clinical research in line with best practices, and disseminate the information thus generated so as to inform health policies and ensure improved health for all Nigerians.

- **Objectives**

1. Develop human capacity for clinical trials through trainings
2. Advocate for the availability of needed infrastructural and laboratory capacity for Clinical trials
3. Develop innovative ideas for Clinical trials research based on country specific needs
4. Create awareness of NIMR's capacity for Cts
5. Establish networks (national, sub-regional regional) withCROs, pharmaceutical industry andother key players so as to attract clinical trials research to NIMR
6. Advocate for funding for CTs

The group came into existence in the institute in early 2012 as a result of the new strategic plan of having research groups instead of divisions to drive the vision and mandate of the institute. Of the 9 research groups thus constituted, the Clinical Trials Group (CTG) is the only one that is basically starting from ground zero. This is because the institute had never participated in the major phases (I-III) of clinical trials. The few trials carried out had involved post-marketing (phase IV) trials of majorly anti-malaria drugs for continued efficacy/emergence of resistance.

Most of the staples of modern medicine we enjoy today were achieved/fine-tuned through clinical trials. Clinical research into new drug treatments and development remain the veritable tool with which to arrest the bane of the diseases ravaging the African continent. As the foremost medical research institute in the country, NIMR therefore needs to be actively engaged in clinical trials in order to fulfil its core mandate of conducting research into diseases and conditions of public health significance in Nigeria in order to improve the health of the citizens

The following subcommittees and focal persons were formed to help run the group:

Subcommittee	Focal Person
Good Clinical Practice (GCP)	Dr Titi Gbajabiamila
Good Clinical Laboratory Practice (GCLP)	Dr Rosemary Audu
Data Safety Management (DSM)	Dr Oliver Ezechi
Ethics	Dr Bamidele Oke
Publicity/Advocacy	Dr Chidinma Gab-Okafor

- **Trainings**

1. The group participated in the first Clinical Trials Summit in Nigeria held in Lagos in October, 2012 where the Director General of NIMR Prof. I. A. O. Ujah mni presented a paper. We were able to register as members of the Association of Good Clinical Practice of Nigeria (AGCPN) and make useful linkages with other workers in the field of CTs including Clinical Research Organizations (CROs).

2. Members of the group were invited to MRC, the Gambia to participate in the GCP/GCLP training in May 2012. They were however unable to go due to logistic reasons. They are now scheduled to attend the March 2013 training at the same venue.

3. The group coordinator has registered for an online MSc Clinical Research Program with the University of Liverpool which is starting February 2013.

- **Research Study**

Mindful of the fact that clinical trials especially phases I-III require a certain amount of clinical and laboratory capacity, we decided to carry out an assessment of the capacity in the various laboratories in the institute. This is so we could identify our level of laboratory competence and also identify areas of possible need.

This assessment was carried out between July and September 2012 and the below is a summary of the result.

The two main laboratories in the institute (Human Virology and Tuberculosis laboratories [HVL and TBL]) are national references laboratories working towards WHO accreditation. HVL has ISO 9001 certification and a Biosafety Level 3 (BSL 3) facility has been constructed in TBL and is about ready for commissioning.

Full haematology, clinical chemistry, serology, immunoassay, viral DNA/RNA PCR with resistance studies as well as TB diagnostic studies including Gene Xpert are available in the institute.

However capacity for therapeutic drug monitoring and some microassays using High Performance Liquid Chromatography (HPLC) machine is not yet available in the institute.

CHALLENGES

- Lack of awareness of NIMR's capacity for CTs
- Infrastructural needs (clinical observation ward, equipment)
- Funding: research not yet a priority in country
- Pharmaceutical industries in country more sales outlet of established drugs so no thrust for CTs

PROPOSED ACTIVITIES

1. A study of the efficacy of INH preventive therapy (IPT) among HIV infected persons exposed to Tuberculosis at the NIMR HIV care and treatment centre.
2. Production of information leaflet about the NIMR CTG
3. A Clinical Trials Round table with relevant stake holders
4. Step down of the clinical trials summit activities to the rest of the group.

A 3-day in-house training on clinical trials with facilitators

Project

A study of the efficacy of IPT in Hiv Infected
Production of information leaflet about the NIMR CTG
A Clinical Trials Round table with relevant stake holders
Step down of the clinical trials summit activities to the rest of the group In-house CT training

Pictures shows some of NIMR EPR groups collecting data of flooded communities

EMERGENCY AND PREPAREDNESS AND RESPONSE (EPR) RESEARCH GROUP

Group Members

Prof. I. A. O. Ujah mni	Director-General
Dr. S. I Smith	Deputy Director of Research /(Group Head)
Dr. K. S. Oyedeji Chief Res.	Fellow / Assist. Group Head
Dr . M.A Mafe	Director of Research
Dr. A. A. Adeiga	Deputy Director of Research
Dr. N. Idika	Chief Research Follow
Dr. M.T Niemogha	Chief Research Fellow
Dr. A. N David	Chief Research Fellow
Dr. D. Onwujekwe	Chief Research Fellow
Dr. J. Iwuora	Consultant Clinician
Mr. A. Adeneye	Research Fellow II
Mr. T. A Bamidele	Research Fellow II
Dr. D. A Oladele	Research Fellow II
Dr. E. O Somefun	Junior Research Fellow
Mrs. E. E Afocha	Research Fellow II
Mrs. F. Ige	Junior Research Fellow
Mr. A. A Adesanmi	Junior Research Fellow
Mr. O.S Amoo	Junior Research Fellow
Mr. B. Ajayi	Chief. Med. Lab. Scientist
Mrs. C. Okparaugo	Chief. Med. Lab. Scientist
Mr. M. Bamidele	Asst. Chief Med. Lab. Tech.
Mr. S. Nduaga	Med. Lab. Scientist
Mrs. F. Ogbonna	Snr. Med. Lab. Sci.

As part of the strategic plan to reposition NIMR and to actualize the NIMR mandates as set out in the Act establishing NIMR, the Director General in early 2012 rolled out nine research groups in which EPR was one of them. In March 2012, the group under the leadership of Dr. S.I Smith developed a work plan to serve as a guide for effective functioning of the group.

Meeting

Meetings were held every third Thursday and the group met seven (7) times in the course of the year 2012.

Goal

To promote prompt response to Humanitarian crises and provide health care support during catastrophic events, disasters and emergencies while documenting events at the site(s) of the disaster with the aim of proffering solutions to minimize future occurrences". This has been the driving force for the activities carried out and achievements attained by the group thus far.

Objectives

The main objective of the EPR group was 'to conduct situation analysis on laboratory capacity for emergency preparedness and response'. A work plan for 2012 was designed with some of the following major components;

- To conduct a study on the cold chain transportation system for samples, and supply chain for reagents and supplies.
- To conduct 2 yrs longitudinal studies on circulating strains of Cholera and Cerebrospinal Meningitis (CSM).
- To build capacity of Emergency Preparedness Response members and stakeholders.
- To conduct a study on Immunization coverage for Measles and Yellow Fever.
- To create predictive models for emergency prone diseases.
- To conduct studies on data generation and information flow on emergency prone diseases.

Capacity Building

Two major training were conducted between the month of June and October 2012 and facilitated by UNICEF. The training is aimed at equiping members for efficient delivery of service to the nation and humanity.

Pictures shows some of NIMR EPR groups collecting data of flooded communities

EPRG Training on Emergency Preparedness and Response' held on the 12th June 2012 at the Conference room of the Nigerian Institute of Medical Research facilitated by UNICEF. A total of 15 participants from NIMR were trained.

Participants at the EPRG training of 12th June 2012

Role of Health Research Institute in Emergency Preparedness and Response in Nigeria', Conference Room, NIMR, NIMR/UNICEF 17th – 18th October 2012. A total of 18 participants were trained all from NIMR.

Participants at the training held 17th to 18th October 2012.

EPRG Sub-committee

·Grant Writing Committee

·Data and Information on Research

Emergency Response Intervention:

The group was apt to respond to various flood disaster which occurred during the year

Collaborators

·In 2012, the group partnered with individuals and

organizations amongst which are Dr. Akpan, Prof. Omilabu, UNICEF, Lagos State Government, and recently Federal Ministry of Health. The group hopes to sustain these partnerships and source for more in year 2013.

·The Group is also collaborating with NCDC, NAFDAC and Central Public Health Lab

Project and Proposal:

·A project proposal on 'Assessment of socio-economic and health challenges faced by internally displaced persons as a result of flooding in Nigeria' has been sent to NIMR-IRB for approval.

Key Accomplishment:

·Provision of emergency back-up to the state and national response to emergency: Cholera.

·In 2010 and 2011 Research back-up was provided by NIMR-Emergency Preparedness Team for cholera outbreaks in Benue, Borno, Gombe and Abia States as well as provision of IEC materials.

·In response to the 2012 of flooding in some parts of the country, the group went on field trip to three (3) of the affected states (selective sampling) namely Benue, Edo and Kogi States, to look into likely medical issues as an outcome of the flood as well as delivery of relief materials and medical services rendered where necessary. The data is being collated and the results are meant to be out before the end of the first quarter of 2013.

- Provision of medical emergency services to internally displaced persons
- Procurement of health commodities and supplies to support ongoing services by the state and Federal Government Agencies.
- NIMR has currently been included as member of the Task Force on Mitigation of Flood Committee made up of more than 20 members.

Challenges

Being the maiden year for the research groups, EPR activities were not without some challenges. The challenges faced include: Lack of funds, lack of coherences in itinery of members, poor participation in research group meetings and clash of interest between the research group and division/unit, non release of research group members by some division/unit head to fully participate in research group activities. No biostatistician and data entry clerk in the Group led to delay in the analysis of the field work.

Conclusion: We are confident that the impact of the group will be fully felt formulation of a work plan, experiences gathered from 2012 activities and adequate funding in the year 2013.

IMMUNOLOGY AND VACCINOLOGY RESEARCH GROUP

Group Members

Dr. A.A Adeiga	Deputy Director of Research / **Group Head**
Dr. N. Idika	Chief Research Fellow
Dr. Y.A Olukosi	Chief Research Fellow
Mr. O. Ajibaye	Research Fellow II
Mr. B.A Orok	Research Fellow II
Dr. O.O Aina	Research Fellow I
Mr. K. Oyebola	Member
Dr. O.B Salu	Research Fellow II
Dr. B.A Iwalokun	Chief Research Fellow
Mr. P.I Anochie	Research Fellow II
Ms. O.B Awoderu	Junior Research Fellow
Mr. E.E Afocha	Research Fellow II
Dr. H.I Okoh	Research Fellow II
Mrs. C.N Kunle-ope	Research Fellow II
Mr. N.N Nwokoye	Research Fellow II
Mr. G.B Akintunde	Asst Chief. Med. Lab. Scient
Mr. J.I Onyewuche	Princ. Med. Lab. Scientist

The Immunology and Vaccinology research group was among the research group constituted to have a research focus in the areas of immunity to infectious diseases and vaccines developed against vaccine preventable diseases.

In the pursuit of this goal, subgroups were formed to enable the group focus in the existing areas of research of infectious diseases.

The subgroups formed were;

(a) Immunology of HIV
(b) Immunology of TB
(c) Immunology of childhood diseases
(d) Immunology of Malaria, Vaccinology subgroup
(e) Immunology of Non communicable disease
(f) Nutrition, Cancer, Diabetes, allergy, and transplantation

Four research proposals were submitted for funding. These were;

1. Sero-conversion study in children immunized against measles in Lagos, Nigeria
2. Evaluating the impact of rotarix vaccine on rotavirus diarrhoea in children under five years in Akwa Ibom state, Nigeria
3. Clinical trials for Malaria vaccines (RTS, S/AS 01) to test for safety and protection against uncomplicated Malaria in children
4. Situation analysis of capacity for Immunization services in the health system of Lagos state

These proposals were submitted to the Nigerian Institute of Medical Research for possible funding. Private funding sources were also being pursued by submitting the proposals to International funding organizations including UNICEF, WHO and USAID. They were submitted as unsolicited proposals.

The fourth proposal which is situation analysis of capacity for Immunization services in the health system of Lagos state, the group is forming partnership with Lagos state Ministry of Health for possible full access to the Local Government Areas to determine the states of immunization services and identify what is to be done to rectify the situation.

Divisions/Units Report

Dr. Adeola .Y Olukosi
Chief Research Fellow / HOD

BIOCHEMISTRY & NUTRITION DIVISION

The Division of Biochemistry and Nutrition witnessed the conclusion of one NIMR funded and some unfunded projects as outlined below. The Division is spurred to lunch new projects following the Director Generals prompting while ongoing projects are mostly self-funded or conducted in collaboration with other Institutions. The putting in place of the Malaria Microscopy laboratory enabled us to conduct two malaria microscopy trainings in year 2012. Apart from the research and other related activities, the retirement of the Director of Research Dr P.U Agomo whom had served meritoriously for 35years in the institute occurred and Dr.H.I Okoh successfully defended his PhD dissertation. Mrs Enya and Mr Akindele were replaced by Mrs Oparugo and Mrs Akintunde in a general posting of Medical Laboratory Scientists late inthe year in the institute.

Dr. Kathleen N. Egbuna	Chief Research Fellow
Dr. Adeola Y Olukosi	Chief Research Fellow / HOD
Dr. B. A. Iwalokun	Senior Research Fellow
Dr. Oluwagbemiga O. Aina	Research Fellow I
Mr. Hilary I. Okoh	Research Fellow Ii
Dr. Chimere O. Agomo	Research Fellow Ii
Mr. O Ajibaye	Junior Research Fellow
Mr B. Orok	Junior Research Fellow
Mrs.C.T Oparugo	Chief Med. Lab Scientist
Mrs. J.M. Akinyele	Science Lab. Techn. I
Miss Arinola Akinnibosun	National Youth Service Corps
Mr Kolapo Oyebola	Project Staff
Mrs. C. T. Oparaugo	Chief Med. Lab. Sci.
Mrs. G. B. Akintunde	Asst Chief. Med. Lab. Scientist
Mrs. M. O. Akinyele	Snr. Med. Lab. Tech.

RESEARCH REPORT

Characterization of Ibeshe community in IkoroduLocal Government Area.Lagos State.

Aina OO, Chimere CO, Olukosi, YA. Okoh HI, Egbuna KN, Iwalokun BA, OroK AB, Ajibaye O, Enya VNV, Akindele SK, Mafe MO. Akinyele A, Mafe VG, Agomo PU, (FUNDED by NIMR, Concluded)

Site characterization is a useful venture to be undertaken in the context of malaria control measures overtime. Impact assessment can be made and decisions reached concerning drug and vaccine trials.

This project set out to determine the malariometric indices, including identification of endemic mosquitoe vector and parasite species, obtaining baseline information on community characteristics especially knowledge, attitude and practice (KAP) of the people in community in relation to malaria infection and control in the area.

A total of 1489 participants were screened for malaria and anemia 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.
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. In conclusion, Malaria in Ibeshe community is mesoendemic during the dry season and the participants had good knowledge of the symptoms associated with malaria.

Patterns of SP resistance markers in IPTp and nonIPTp administrerd patients attending government Hospitals in Ikorodu local Government in Lagos Nigeria.

Olukosi YA, Iwalokun BA, Aina OO, Agomo CO, Okoh HI, Orok AB, Ajibaye O, Enya VNV, Akindele SK, Akinyele MO, Kolapo O, Agomo PU.(Residual funding from RSTMH Concluded)

Resistance to the antimalarial drug sulfadoxine-pyrimethamine (SP) is a subject for concern because it is policy treatment for prevention in pregnancy since 2005 and thus subject to drug pressure.

The study assessed the frequency of resistance markers, dhfr and dhps alleles in IPTp administered pregnant women and in the general population.

Cross sectional surveys of symptomatic pregnant women attending the antenatal clinics in two Lagos hospitals in Ikorodu LGA was conducted over two years. PCR–restriction fragment length polymorphism of polymorphic codons of the dhfr gene (51, 59 and 108) and the dhps gene (437 and 540) were performed in peripheral blood samples.

All of the isolates carried at least one mutation but none of the isolate had the K540E mutant such that there were no quintuple mutants of the double dhps-triple dhfr mutant genotype. Majority of the isolates had multiple mutations (95%) with the proportions being insignificantly different in between women with (97%) and without(96%) (p=0.16) a history of intermittent preventive treatment with sulfadoxine/pyrimethamine. Proportions of triple and quadruple dhfr-dhps mutations was 31% and 35%(p= 0.21), and 16% and 15%(p=0.21) in the IPTp administered vs the general population respectively.

There were no differences in the frequencies and degree of mutation between the IPTp exposed and general population. Continued surveillance should be in place to detect the evolution of selected mutants that may arise in continued use of SP for IPTp.

Bioactivity of some local plant species against larval and adult stages of *Anopheles gambiae* and *Aedis aegypti.*

Okoh HI, Makanjuola, M.A

Plant materials differently treated are used for insecticidal and/or repellency purposes against mosquitoes in some states in Nigeria.

The objective of this study was to conduct the bioactivity level of some local plant species against larvae and adult stages of *Anopheles gambiae* and *Aedes aegypti*.

Ethno- bothanical methods were used to identify active plant species while Gas Chromatography–Mass Spectrophotometry (GC-MS) techniques were used to determine components of active ingredients.

Forty six plant species were identified as having some activity against mosquitoe larvae of which *Zanthoxylum zanthoxyloides* which has not been previously reported in literature as having larvicidal activity against mosquitoes was found to be the most potent extract against all the test insect larvae. GC-MS result showed that it contained D – Limonene which has been reported to have insecticidal properties. Photomicrographs of test larvae of both species exposed to various concentrations of the test larvae showed varying degrees of morphological distortions including shrunken cuticles, disproportionate and enlarged heads, detached guts, loss of fossate hairs and collapsed midguts. The different morphological distortions observed may be important leads to understanding the mode of action of the test compounds. *Hyptis suaveolens* oil was significantly ($p<0.05$) the most effective repellent on the adult mosquitoes followed by *Lantana camara* and *Ageratum conyzoides*. Gas Chromatography – Mass Spectrophotometry (GC-MS) analysis of the test oils showed a range of compounds with oleic acid and carophyllene being the predominant compounds in the three most effective oils.

There is need to carry out further investigations on these two compounds as they may constitute potential candidates for new sources of repellents in mosquito control.

PhD STUDIES

Ajibaiye Olusola: Polymorphisms in *Plasmodium falciparum* apical membrane antigen-1 (AMA-1) in relation to malaria outcomes in Lagos, Nigeria.

Co-infection of Babesia and *Plasmodium* parasites

Orok Basse, Fagbenro-beyioku AF

TRAINING REPORT

MALARIA MICROSCOPY TRAINING (25th of June - 1st of July-2012)

Sequel to the successful maiden edition of the Malaria Microscopy Training tagged “Effective Malaria Diagnosis by Microscopy” which was coordinated by the Biochemistry and Nutrition Division in collaboration with the WHO and the National Malaria Control Programme in October of 2011, another training was conducted in 2012 tagged "Effective Malaria Diagnosis: sustaining the efficacy of Artemisinin-based Combination therapy". The Goal of these series of training is to place the Institute in a strategic position to serve as a Reference Center on Malaria Diagnosis, Training and Research both nationally and internationally.

Malaria Microscopy Laboratory

One of the recommendations embedded in the report from the first training had included that, a microscopy laboratory with good quality microscopes should be built for the purpose of this course, and so as to anchor technical request of national proportions in malaria diagnosis by microscopy. The Director General, Prof. OAU Ujah *mni* was instrumental in devoting funds to this cause. Thus 8 Olympus CX21 microscopes were purchased to complement the 6 functional microscopes

that we had previously. The erstwhile general laboratory of the Public Health Division was identified as suitable to serve as the Microscopy laboratory and the Head of Public health who also doubles as the malaria programme coordinator in the Institute, was magnanimous in letting it go for the purpose to serve as Microscopy lab on condition that the Public health Division is given a replacement. The DG approved the previous Central Laboratory to be given to Public Health Division in replacement.

In-house training in malaria microscopy (30th January- 10th February, 2012)

An in house training was successfully conducted for 10 people from within the Institute, mostly members of Biochemistry and Nutrition division at a token cost of four thousand naira per individual. Efforts will now be made to certify the participants that performed especially well, and accredit the laboratory to international standards.

Donation by Mobil Exonn

Mobil Exxon gave the sum of two hundred and fifty thousand naira(250,000.00) in response to one of the several letters written to various organizations, requesting for support in the procurement of microscopes for the malaria microscopy laboratory. A letter of gratitude has since been written in appreciation.

Participants

Thirty six people were trained in an advertised call to participate at a cost of a token sum of fifty thousand naira per participant. Lagos State sent a delegate of 26participants. One participant was from Ogun State, one from Rivers State and one participant was a staff of the Institute. They included Medical Laboratory Scientist, Technologists, and Technicians, 1 Medical Doctor, lecturers, Research Scientist and Post Graduate Students.

Collaborators, course materials and course contents

The workshop continues to pattern its training after the WHO Basic Malaria Microscopy training guidelines, adapting their effective training manuals for both tutors and learners. These included Malaria Parasite identification and Species differenciation, Malaria parasite quantitation, field examination techniques, blood film preparations, SOP preparation, sensitivity and specificity determination, GCLP, overview of malaria, PCR and other methods of diagnosis. The power point presentations were given to the participants as CDs, alongside the WHO learner's guide manuals to participants.

Facilitators Profile

Technical Support was provided by Six facilitators, four of them were NIMR staff; Dr Chimere Agomo, Mr Samuel Akindele, Dr Olugbenga Aina, Mrs Uche Igbasi, while two; Mr Babajide Bamiro and Mr Iwuanyaun, were from the International Malaria Microscopy Center in College of Medicine University of Lagos, Idi Araba. Dr CO Agomo coordinated the technical aspect of the course while Mr HI Okoh handled the logistics. The coordination was anchored by Dr Adeola Olukosi. Facilitators who made presentations on fields in which they have specialized included, Dr YA Olukosi, Dr B Iwalokun, Dr O Aina, Mr O Ajibaye, Mr AB Orok and Mrs R Okoye. We were able to attain a facilitator:Participant ratio of less than 1:6 as targeted in our recommendations from the year before.

Performance

There was a general improvement in all aspects covered by the workshop. The least improvement was in species identification (9.8%) while the greatest improvement was in parasite quantitation (22.9%). None of the participants could effectively quantify parasitemia per µl at the start of the training (0%).

Evaluation of Training by Participants

The trainees rated the training over 78% on average. Qualities of the training evaluated included, adequacy of hands on sessions (83%), quality of microscopes and slides(79%), resource materials(80%), relevance of training to professional needs(95%), training increasing skills of the facilitators(85%), practical skills of the facilitators(97%), lecture skills of facilitators(96%), tea breaks(61%), lunch breaks(78%), compliance with timing(71%), adequacy of lecture hall(75%), adequacy of laboratory(82%). The participants' self-assessment of improvement in knowledge was over 80%.

MEETINGS ATTENDED

Drs Olukosi and PU Agomo **National priority setting of operational research on malaria control in Nigeria** 1st February 2012 at the Summit Villa Hotel, Abuja

Drs Olukosi and C.O Agomo **Stakeholders meeting on the framework for diagnosis and establishment of QA/QC for RDTs and microscopy.** Alexis Hotel, Jabbi Abuja from 15th to16th March 2012

CONFERENCES ATTENDED WITH PAPERS PRESENTED

(1) **All Staff. NIMR 3rd International Scientific Conference, NIMR auditorium, Lagos 5th -8th November 2012**

(2) Enya V. N.V.(2012) T**he CyScope® malaria rapid diagnostic test (RDT), but not the *Plasmodium* Aldolase antigen test, performed well and could be used for malaria diagnosis** in Lagos, Nigeria.

(2) Okoh HI (2012) Repellent activities of essential oils from ten Nigerian plants against *Anopheles gambiae and Aedes aegypti.*

(4) Oyebola MK (2012) **Lack of evidence for the re-emergence of chloroquine-sensitive falciparum malaria in** Lagos, south-western Nigeria

(5) Ajibaye O (2012) 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.

(6) Okoh HI attended The 36th Annual Conference of The Parasitology and Public Health Society of Nigeria (PPSN) Federal University of Technology, Akure, Ondo State, 18th – 21st September, 2012.

(7) Orok B (2012) Preliminary evaluation of the diagnostic methods for G6PD deficiency determination in Lagos, Nigeria

WORKSHOPS ATTENDED

Orok B. **West African regional workshop of cell biology of protozoan parasites**, MRTC; Bamako, Mali 15-29 January, 2012

Ajibaiye S. **"Cell Biology of Infectious Pathogens" 2012, Fourth West African Regional Workshop,** The University of Ghana 16th-27th July, 2012.

Iwalokun BA, Enya V, Aina OO, Okoh HI, Ajibaiye O, Orok B, Akinyele O, Oyebola K, Ismail D. **Microscopy Training, Division of Biochemistry& Nutrition,** NIMR, Yaba, Lagos. 30th January- 10th February, 2012.

Aina OO**,** Okoh HI, Ajibaiye O, Orok B, Oyebola K. **Biostatistics training**, NIMR, 30th- 2nd Dec. 2012

Mrs. Rosemary Okoye
Deputy Director / Head

CLINICAL DIAGNOSTIC LABORATORY

Clinical diagnostic Laboratory (CDL) provides efficient and quality clinical diagnostic services for both staff and members of the public at affordable costs. The main vision of the unit is to be a centre of excellence in clinical diagnosis. The Unit also supports research activities of the institute as well as training of students from universities, allied institutions from within the country. CDL is also involved in some collaborative research work with researchers within and outside NIMR. CDL also undertakes evaluation of kits, mandatory food handlers tests for companies and institutions. CDLcan boast of well qualified trained HIV counselors and testers that carry out free HIV counseling and testing to the general public in NIMR HCT clinic. The target set by APIN for the HCT clinic was achieved by 105% . The range of test carried out in the laboratory include Chemistry,Serology, Microbiology, Haematology and free HIV counseling and testing.

Medical Laboratory Scientists

Mrs. R.N Okoye	Deputy Director (Laboratory Services)
Mrs. M. N. Otuonye	Chief Medical Lab. Scientist (Haematology)
Ms. O. Ojerinola	Chief Medical Lab. Scientist (Clinical Chemistry)
Mrs. V.N.V. Enya	Chief Medical Lab. Scientist (Microbiology)
Mr. S. K. Akindele	Asst. Chief Med. Lab. Scientist (Microbiology)
Mr. D. O. Akande	Asst. Chief Med. Lab. Scientist (Parasitology)
Mrs. M. N. Aniedobe	Senior Med. Lab. Scientist (Microbiology)
Mrs. F.N. Ogbonna	Senior Med. Lab. Scientist (Microbiology)
Mr. O.E. Fasela	Medical Lab. Scientist I (Clinical Chemistry)
Mr. S.J. Nduaga	Medical Laboratory Scientist I (Haematology)
Mrs. V. O. Egede	Intern Med. Lab. Scientist (Clinical Chemistry)
Mr. D. Abuh	Intern Med. Lab. Scientist (Haematology)

Laboratory Technician

Mr. N. Ezra	Medical Laboratory Technician
Mrs. A. Issa	Science Laboratory Technician
Mrs. A. Allen	Senior Laboratory Attendant

- Staff performing Haematological analysis on blood sample

- Staff working on Chemistry samples

UNITS	TOTAL NO. OF TEST DONE
Chemistry including Immunoassy tests	6690
Serology	1371
Haematology	2416
Microbiology	846
HIV Counseling & Testing	7667

Summary of income from the Benches

BENCHES	INCOME GENERATED 2012
Microbiology	₦1,291,650.00
Chemistry	₦3,082,425.00
Serology	N1,782,275.00
Hematology	₦2,054,635.00
TOTAL	₦8,210,985.00

HIV COUNSELLING AND TESTING (HCT) UNIT

CDL offers **FREE** HIV Counseling and Testing to the general public between the hours of 8.00am to 4.00pm Monday through Friday excluding public holidays. The HCT team also carries out outreach programs to some designated areas like motor parks, market places, churches, mosques etc. A total of 7667 Clients were counseled and tested in the year 2012 and this resulted in the unit achieving 105% above the target set for it by APIN.

Five staff of the unit participated actively in the screening of over 7000 clients made up of athletes and officials in the 18th National Sports Festival held in Lagos from 27th Nov to 9th Dec. 2012.

OTHER ACTIVITIES DONE BY HCT IN 2012

National Education Innovation Exhibition, Abuja – Old parade ground 19th – 21st November, 2012. Screening of 250 Clients were screened for HIV Hepatitis B and Blood Group

CONFERENCES AND TRAININGS ATTENDED IN 2012

1). 19thConference on Retroviruses and Opportunistic Infections. Seattle, USA, March 3-6th, 2012.

2). 10-day National HCT Training in Ibadan organized by SFH, 29th April – 11th May, 2012.

3). Cyscope ® Malaria for In vitro Diagnosis of Malaria among Nigerians. *Oral presentation*at Association of Medical Laboratory Scientists of Nigeria (Lagos State Branch) 47th annual Conference, 17th - 22nd June 2012

4). Malaria Microscopy Workshop/Training on Effective Malaria Diagnosis: Sustaining the Efficacy of Antemissinim-Based Combination Therapy in Nigeria 25th June – 1st July 2012

5). HCT Refresher Course in Ibadan organized by APIN, 15th-22nd July, 2012

6). Mentorship Programme of Two New HRECs, Operationalzing and Research Monitoring of New NIMR IRB Members by NIMR IRB/NHVMAS/NHREC. 14th -16th August,2012

7). AIDS Vaccine Conference 2012, Massachusetts USA 8th-12th-Sept, 2012. **Paper presented-**Human Subject Protection and Ethical Review of Research Protocol: Site 1, MHY Lagos, Nigeria

8). Short biostatistics training workshop 30th October-1st Nov 2012 held in NIMR Conference Room, Lagos.

9). International Union against Sexually Transmitted Infections (IUSTI) World Congress. 15th -17th October 2012, Melbourne, Victoria, Australia. **Paper presented-** Human Subject Protection and Ethical Review of Research Protocol: Site 2 AAU

10) **. Continuing Evaluation of Rapid Diagnostic Tests (RDTS) for in-vitro malaria diagnosis in Lagos, Nigeria.** ***Oral presentation*** at NIMR 3rd International Conference, 5th -8th November 2012

11). Three days Training on Couples HIV Counseling and Testing ZRHRP Lusaka, Zambia 13th-15thNovember, 2012

12) . CVCT Technical Assistance (TA) Meeting held in Lusaka, Zambia from 29). November - 1 December 2012. Nigerian Delegate.

13) . Bio-safety Training: Proper Hand Washing Technique, CDL, NIMR. 11th Oct., 2012

14). Bio-Safety Training: Proper Use of Personnel Protective equipment, CDL, NIMR.18th Oct., 2012

TRAINING/MENTORSHIP

Total no Training attended by staff	No of Training facilitated by staff	No of IT/ M.Sc students trained
11	4	2

ACHIEVEMENTS

- CDL contributes to NIMR internally generated revenue.
- A lot of lives have been saved through the laboratory results generated by the unit.
- Students in tertiary institutions have been helped in carrying out their school projects.
- CDL is contributing in the internship of newly graduated Medical Laboratory Scientists.

CONSTRAINT

- Inadequate laboratory and office space
- Delay in the release of impressed money to the unit
- Urgent needs of the laboratory above N5000 cannot be attended to by the HOU
- Insufficient training vote for the research staff in CDL
- Non-availability of well qualified Biomedical Engineers to handle breakdown equipment
- Irregular power supply
- Lack of IT personnel to handle the printing out of the result. It is unfortunate that results generated in this unit are handwritten.

Dr. O.C. Ezechi
Chief Research Fellow / HOD

CLINICAL SCIENCES DIVISION

It is my pleasure as the head of the Division to present the 2012 annual report on behalf of the entire staff of the Clinical Sciences Division (CSD). Our 2012 report reveals a Division in which the staff continue to engage in training, research and services despite enormous challenges. It shows that planning is the key to success and with strategic planning; it is possible to succeed against all odds. It also confirms that human resources are the real driving force behind every success story. Despite limited funding and personnel, the limited number of staff has continued to conduct operations research as well as providing comprehensive and world class care to thousands of Nigerians in the area of HIV, TB, child and women's health. We continue to provide resources and personnel to virtually all national committees in the area of HIV, TB, child and women's health and provide community services to our neigbour as part of our corporate responsibility.

Our achievements in 2012 couldn't have been possible without the full support of the Institution's management and our Partners. AIDS Prevention Initiative Nigeria (APIN) and International Association of National Public Health Institutes (IANPHI deserve special mention and we look forward to more of these supports in 2013.

In the spirit of the Director General's implementation of the new Strategic Plan, our 2012 annual report will focus more on the administrative, training and services activities of the Division. The research endavours of the staff of the Division will be appropriately be captured in the relevant research groups' report. We adopted this style to avoid duplication of activities.

Welcome to our world, and I hope you will enjoy reading the report as I did putting it together.

ADMINISTRATION

For seamless conduct of the day- to – day administration of the Division, it is structured into three broad sections of Research, programme support and projects, clinical and laboratory services. The subdivisions in the Division include;

1. Administrative Support and Projects
   a. Administration
   b. Externally funded projects and grants
2. Clinical and Laboratory Services
   a. Clinical Services
   b. Laboratory services
3. Research Units
   a. Non Communicable Diseases
   b. Communicable Diseases
   c. Maternal, Sexual and Reproductive Health
   d. Child Health

MEMBERS OF STAFF

Name	Position	Research Units	Research Interest
Prof. Innocent AO Ujah mni	Director General	Maternal, Sexual and Reproductive Health	Sexual and Reproductive Health
Dr. Nkiru N Odunukwe	Deputy Director	Non Communicable Diseases	Blood disorders
Dr. Oliver C. Ezech	Chief Research Fellow & Head of Division	Maternal, Sexual and Reproductive Health	Sexual and Reproductive Health
Dr. Agatha N. David	Chief Research Fellow	Child Health	Child Health/Clinical Trials
Dr. Dan I Onwujekwe	Chief Research Fellow	Communicable Diseases	TB, HIV
Dr. Olufunto O. Kalejaiye	Senior Research Fellow	Non Communicable Diseases	Blood disorders
Dr. Titi A Gbajabiamila	Research Fellow I	Child Health	Maternal and Child Health
Dr. Paschal M. Ezechi	Research Fellow I	Child health	Sexual and reproductive health
Mrs. Jane O. Okwuzu	Research Fellow II	Communicable Diseases	Parasitology
Dr. David A. Oladele	Research Fellow II	Maternal, Sexual and Reproductive Health	Adolescent Health
Dr. Chicinma V. Gab-Okafor	Research Fellow II	Maternal, Sexual and Reproductive Health	Sexual and Reproductive Health
Dr. Esther O. Somefun	Research Fellow II	Child Health	Child and Community Health
Dr. Bamidele A. Oke	Research Fellow II	Infectious diseases	Viral diseases
Pharm. Sabdat Ekama	Junior Research Fellow	Maternal, Sexual and Reproductive Health	Drug research/Clinical trials
Dr. Jerry Iwuora	Clinical services	Consultant Physician and Gastroenterologist	

Name	Position	Designation
Mrs. Eva N Amadi	Clinical services	Chief Nursing Officer
Pharm Ebiere Herbertson	Clinical services	Assistant Chief Pharmacist
Mrs. MA Adetunji	Laboratory services	Principal Medical Laboratory Scientist
Mrs. Olufunmilayo Ajayi	Clinical services	Principal Community Health Officer
Mrs. Eunice Anyasi	Clinical services	Nursing officer I
Mrs. Dorothy Oladipo	Clinical services	Nursing officer I
Mr. Iniobong Essien	Laboratory services	Medical Laboratory Scientist I
Dr. A. Smith	Clinical services	Youth Corper
Dr. Okusaga Azeez T.	Clinical services	Youth Corper
Miss Olutunmike M. Kuyoro	Laboratory services	Youth Corper
Mr. Daniel Ogbe	Administrative support	Clerical officer
Mrs. Elizabeth Robinson	Clinical services	Social worker

APIN NIMR SITE PROJECT STAFF

Name	Position
Dr. Rosemary Adu	Site Coordinator
Dr. Harry Ohwodo	Clinician
Dr. O. O. Odubela	Clinician
Dr. A. E. Wapmuk	Clinician
Dr. EE Agahowa	Clinicar
Mrs. Addeh E,emen	Pharmacist
Mrs. Egbonrelu N. M.	Pharmacist
Dr. Chioma Okpalla	Pharmacist
Mr. Chidi Martin	Pharmacist
DR. Olojo, Ifedola Isimeme	Pharmacist
Mrs. Patience T. Aninye	Nursing Officer
Mrs. Ezerendu Augustina	Nursing Officer
Mrs. Nwosu Rita	Nursing Officer
Mrs. Owa Felicia	Nursing Officer
Mrs. Dorothy Nwachukwu	Nursing Officer
Mrs. Udofia Comfort	Nursing Officer
Mrs. Dasen Sharon	Nurse, Counselor
Mr. Okolo Chinedu	Site Accountant
Mrs. Precious U. Obodo	Accounts Clerk
Mrs. Osagu Theodora S.	Site Admin. Officer
Mr. Muraina Abiola	IT Officer
Mrs. Favour Olaturbosun	Asst. Data Manager
Ms. Allen Omotayo	Data Officer
Mr. Oba Abdulrasheed	Data Officer
Miss Olayemi Adeniyi	Data Officer
Miss Lilian Okoro	Data Officer
Miss Eze Benedicta	Data Officer
Miss Sharon Mokoqwu	Data Officer
Miss Obi Vivian	Data Officer
Mrs. Patricia Austin-Akaigwe	Data officer
Mrs. Adekoje Comfort	Head, Medical Records
Ms. Onomu Hannah E.	Snr. Med. Records Officer
Mr. Francis Udosen	Med. Records Officer
Miss Benard. Ruth Bulo	Front Desk Officer
Miss Ogunbowale E. A.	Records Assistant
Mrs Titi Olaomo	Records Assistant
Miss Onabanjo Adejumoke	Records Assistant
Mr. Salami Abiodun	Driver

Name	Position
Mr. Ishola Olusegun	Driver
Mr. Odibeli Chibuzor	Gen. Operator / Records Assistant
Mr. Alex Amadi	Records Clerk
Miss Ogechukwu Ojukwu	Med. Records Officer
Mr. Michael Omoya	Records Clerk
Miss Princess Odili	Care Giver
Mr. Uche Asikwe	Care Giver
Mrs. Deborah Otuka	Counselor
Mrs. Okerekeocha C.	Counselor
Mrs. Ajani Ariyo Abiola	Peer Counselor
Mrs. Nwankwo Ngozi	Counselor
Mrs. Amusan - Ikpa Susanna	Counselor
Miss Ifeoma Idigbe	Counselor
Miss Oresegun Bukola	Peer Counselor
Mr. Kalu Udeubi	Time Keeper/Clerical Assistant
Mr. Mohammed Yakubu	Store Keeper
Mrs. Bunmi Atunde	Environmental Assistant
Mrs. Juliana Ojo	Environmental Assistant
Mrs. Anifowoshe Ganiat	Environmental Assistant
Mrs. Martina Agomo	Environmental Assistant
Mrs. Mercy Amech	Environmental Assistant
Ms. Ojedele Aderonke	Community Health Assistant
Ms. Nureni Aramide	Community Health Extension Worker
Mr. Richard E. Otuka	Phlebotomist
Mrs. Ricketts Anthonia	Peer Counselor
Mr. Naco Ezieme	Peer Counselor

Postgraduate Training

Dr. Kalejaiye OO

Programme: Medical Fellowship in Physic /Haematology

National Postgraduate Medical College of Nigeria

Research work:

Prevalence of vitamin B12 deficiency in ART naïve adults infected with HIV.

Research update:

Completed enrollment. Laboratory analysis of samples was completed in the last quarter of 2012Commenced analysis and writing of thesis. Hopefully the thesis will besubmitted in the first quarter of 2013.

Mrs. Okwuzu JO

Programme : PhD

University: University of Lagos, Lagos Nigeria.

Research work:

Protozoal and Helminthic infection in HIV/AIDS patients

Research update:

Enrollment completed and analysis of samples ongoing

Dr. Oke BA

Programme: PhD

University: University of Lagos, Lagos Nigeria

Research work:

Viral aetiology of jaundice in Children

Research Update:

Title accepted in the last quarter of 2012

WORKSHOP AND TRAINING

Ezechi OC. **Research Ethics:** Organized by Faculty of Medicine, **Lund University**, Lund Sweden, January 23—27, 2012.

Ezechi OC. **Oral Communication**: Organized by Faculty of Medicine Lund University, **Lund Sweden** December 4 - 14 2012

SCIENTIFIC CONFERENCES

Paper presented at Conferences

Ezechi OC, Gab-Okafor CV, Oladele DA, Idigbe IE, Enemuoh JC. Heterosexual anal sex practices among Nigerians: Implication for rectal Microbicide research and use. Abstract number 123. Oral presentation at the 2012 International Microbicides Conference. Sydney Australia 15 - 18 April 2012.

E**zechi OC,** Ujah IAO, Ostergren PO, Odberg Petterson K. Willingness and acceptability of cervical cancer screening among HIV positive Nigerian women. Abstract number 0238. Oral presentation at XX FIGO World Congress of Gynecology and Obstetrics held in Rome Italy, .October 7-12, 2012. International Journal of Gynecology and Obstetrics 2012;119:S344

Ezechi OC, Kalejaiye OO, Oladele DA, Oke BO, Ekama SO, Odunukwe NN, Ujah IAO. The burden of anaemia and associated factors in HIV Positive Nigerian women. Abstract number S022. Oral presentation at the Society of Obstetrics and Gynaecology Conference October 2012.

Ezechi OC, Gab-Okafor CV, Oladele DA, Kalejaiye OO, Oke BA,Ujah IAO. Pregnancy, obstetric and neonatal outcome in HIV positive Nigerian women. Abstract number 0303. Oral presentation at XX FIGO World Congress of Gynecology and Obstetrics held in Rome Italy, October 7-12, 2012. International Journal of Gynecology and Obstetrics 2012;119:S442

Gab Okafor CV. Choice of initial combination antiretroviral regimen in treatment naïve HIV positive individuals. Oral presentation at the 3rdInternational conference of Nigerian Institute of Medical Research Lagos November 2012

Ezeobi PM. Awareness about STIs among Nigerian adolescents living with HIV infection. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

Gabjabiamila TA. Antiretroviral drug adherence and challenges in adolescent living with HIV infection. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

Ekama OS. A cohort analysis of a pharmacy refill data and virologic outcome. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

Oke BO. Reduction in TB treatment default rate using quality strategies in a DOTS Centre. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

Oladele DA. TB treatment default and associated factors. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

Kalejaiye OO. Seroprevalence and risk factors associated with Hepatitis B and C infection in pregnant women living with HIV Infection. Oral presentation at the 3rd International conference of Nigerian Institute of Medical Research Lagos November 2012

CONFERENCE ATTENDANCE

1. Prof Ujah IAO. XX FIGO World Congress of Gynecology and Obstetrics held in Rome Italy. October 7-12, 2012.
2. Prof Ujah IAO. 49th Annual scientific Conference of the Society of Obstetrics and Gynaecology of Nigeria held in Abakiliki Ebonyi State Nigeria October 2012
3. Dr Ezechi OC. XX FIGO World Congress of Gynecology and Obstetrics held in Rome Italy, . October 7-12, 2012.
4. Dr. Ezechi OC. Annual scientific Conference of the Society of Obstetrics and Gynaecology of Nigeria held in Abakiliki Ebonyi State Nigeria October 2012.
5. Dr. Odunukwe NN. Annual scientific conference of the West African College of Physician held in The Gambia November 2012

CLINICAL AND COMMUNITY SERVICES

- HIV TREATMENT CENTRE (APIN CENTRE)
- Focal Person: Dr. Dan Onwujekwe

·Update:The services are provided as part of the Federal Government of Nigeria antiretroviral drug access programme with support from AIDS Prevention Initiative Nigerian (APIN) . Cumulatively the programme have enrolled 20187 HIV positive Nigerians into the treatment programme since inception in 2002. The outcome of the testing is shown in table below.

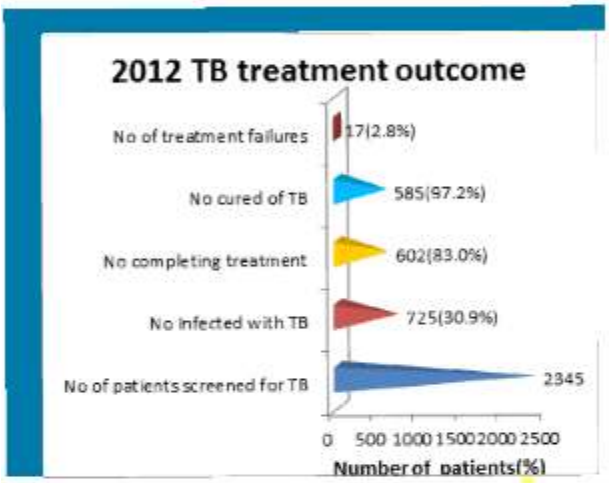
Sex	HIV status	<15 years of age	= 15 years of age	Total
Male (3669)	Positive	41	81	122 (3.3%)
	Negative	275	3273	3548(96.7%)
Female (4021)	Positive	35	1097	1132(28.2%)
	Negative	293	2896	2889(71.8%)
7689(104.0%)		6118.2%	7047(91.7%)	

3rd from left: Prof. IAO Ujah *mni*, 1st from left: Dr. O.C Ezechi at the XX FIGO World Congress of Gynecology and Obstetrics held in Rome Italy, . October 7-12

DOTS CENTRE

Focal Person: Dr. Dan Onwujekwe

To ensure that our clients got the best of TB care as obtainable anywhere in the world, the programme provides TB services at the Institute's DOT Centre in collaboration with National TB Reference Laboratory at the Institute.At the DOTS centre, TB patients and TB infected HIV patients are treated using modified DOTS strategy. The details of the patients seen at the DOTS centre are shown in the bar chart below.



STAFF HEALTH SERVICES

Focal Person: Dr. Jerry Iwuorah

Update: The staff clinic domiciled in the Clinical Services Division provides health care services to members of staff and their families. In addition, it provides some pre-employment and pre-school health evaluation to the public at very minimal fees. In the last quarterof 2012, specialized clinics were introduced at affordable fees. Visit the staff clinic for details.

Post-exposure prophylaxis

· **Coordinator: Dr. Funto Kalejaiye**

· Update: Provides HIV prevention services (occupational and non occupationalexposure) to members of the public after exposure to fluid suspected to be infected with infectious agents.

COMMUNITY SERVICE.

Cervical cancer prevention- The team lead by Drs. Gabjabiamila and Gab-Okafor conducted cervical cancer outreach programme that saw over 600 women in rural areas of Lagos screened for cervical cancer. The screening was conducted using visual inspection with acetic acid and Lugols Iodine. **A total of 1341 women were screened in 2012, of which 131(9.8%) were screened positive. Those screened positive were linked for further evaluation and possible treatment.**

THE TEENAGE ZONE (TZ) CLUB, NIMR

Older children and adolescents constitute a large proportion of HIV-infected children in most HIV clinics in the countries. Being a heterogeneous group in terms of socio-demographics, mode of HIV infection, sexual and substance abuse history, clinical and immunologic status, psychosocial development, and readiness to adhere to medications, the implication for care support is huge and often influences decisions concerning when to start antiretroviral therapy (ART) and what antiretroviral (ARV) medications should be used.

HIV-infected adolescents are especially vulnerable to specific adherence challenges based on their psychosocial and cognitive developmental trajectory. Comprehensive systems of care are required to serve both the medical and psychosocial needs of HIV-infected adolescents, who are frequently inexperienced with health care systems.

The adolescent club (Teenage Zone) was formed at the NIMR HIV treatment centre to assists adolescent in coping with challenges of management of their Health. The club has a membership capacity of 40 (14 girls and 26 boys) with age range of 13 to 18 years.

The year 2012 was packed full of activities. Apart from the regular monthly meetings during which health and career talks are given, including drama/dance presentations and book club by the teenagers. The children participated in the following activities;

- An outing to the National Museum at Onikan, Lagos.
- Participation in a radio drama writing competition - club member received the prize of a home theatre system (May 2012).
- Essay competition among the members in April 2012.
- Extra coaching for junior and senior WASCE candidates (May to June 2012)
- A 2-week camp for adolescents in Ibadan in collaboration with Positive Action for Treatment Access (PATA) in August 2012.
- Christmas get-together in December 2012.

The club has been positively impactful in the life of these adolescents as evidenced by their enthusiastic participation at meetings and their improved drug adherence.

ORPHANS AND VULNERABLE CHILDREN

The increasing number of orphans and vulnerable children (OVC) in the country is a major humanitarian and developmental challenge facing Nigeria as a result of HIV epidemic. To mitigate the impact, the Orphans and Vulnerable Children team of the Institute in conjunction with APIN LLC, Heal the World Foundation and Mother Theresa Orphanage has also been carrying out collaborative activities to ensure that these unfortunate children have the basic essentials of life viz shelter, food and educational services. In 2012, the consortium distributed stationeries, school uniforms, bags and sandals as well as raw food items to the affected children and their families. The team also provides medical services to the inmates of Mother Theresa Orphanage Ketu Lagos to provide medical services.

I cannot conclude this report without appreciating you for thanking time to read this report. For an suggestions andn enquires about our programe, contact us at csd@nimr.ng.org

Dr. (Mrs) Rosemary Audu
Chief Research Fellow / HOU

HUMAN VIROLOGY LABORATORY

Year 2012 was quite exciting with a lot of new challenges for the Human Virology Laboratory. The most exciting event is the on-going expansion of the laboratory. This is an indication of growth as the laboratory barely has enough space to accommodate its valuable equipment and staff. This expansion is indeed a welcome development for the unit. The year also witnessed a lot of staff movement as a result of general postings, resignations and new engagements. The effects of these movements were addressed through several trainings and re-trainings in order to maintain the long term culture of quality management system. It was therefore not surprising when Mr. Abraham Oladiran, a staff of the unit, won the NIMR staff of the year award, junior category.

Newly installed Cobas 4800 analyzer for screening and genotyping of human papilloma virus for cervical cancer patients

The Unit was also faced with the challenge of creating public awareness and dissemination of innovative research findings to the public. As such, the World Hepatitis Day and the World AIDS Day were organized by the unit in collaboration with the Society for Gastroenterology and Hepatology in Nigeria, Lagos Chapter as well as the Clinical Science Division respectively. These events witnessed series of lectures and free screening for HIV, hepatitis and blood group investigation. The unit actively participated in the national educational innovative exhibition in Abuja. The Institute played a prominent role at the exhibition as it didnot only showcased innovative and high tech equipment it has for research but also provided free screening and referrals for diseases of public health importance.

Roche South Africa training HVL staff on Cobas Ampliprep/ Taqman

HVL RESEARCH TEAM

Dr. (Mrs.) R.A. Audu	Chief Research Fellow /HOU	Mr. P.D. Jamda	Med. Lab. Scientist I
Dr. O. B. Salu	Research Fellow II	Mrs. C. L. Okoli	Med. Lab. Scientist I
Dr. C. K. Onwuamah	Research Fellow II	Mr. E.O. Odowale	Med. Lab. Scientist I
Mr. A. Okwuraiwe	Junior Research Fellow	Mr. G. Liboro	Med. Lab. Scientist I
Mr. O.S. Amoo	Junior Research Fellow	Mr. D. Acharya	Snr. Lab. Tech.
Mrs. F.A. Ige	Junior Research Fellow	Mrs M. Igbinavbiere	Science Lab. Tech. II
Mrs. U. F. Sylvester-Ikondu	Med. Lab. Scientist I	Mrs. C. Onyeitu	Science Lab. Tech. II
Mrs. F.O. Okhiku	Med. Lab. Scientist I	Mrs. R. Omoloye	Science Lab. Tech. II
		Miss F. John	Laboratory Assistant

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

Onwuamah CK, Audu RA, Ezechi OC, Ujah IAO and Odeigah PGC

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.

The objective is to evaluate DNA quantification, fragmentation and nick as markers of DNA damage in relation to their ability to predict reproductive outcomes.

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.

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 (?=0.44) and sperm count (?=0.31) while DNA nicks had significant correlations with testicular size (?= -0.45) and sperm count (?= -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%).

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

Antiretroviral drug is associated with spermatozoa abnormalities in albino mice

Onwuamah CK, Audu RA, Ezechi OC, Ujah IAO and Odeigah PGC

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.

The study is 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.

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.

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. 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.

Patterns of drug resistance mutations (DRMs) amongst patients failing second-line therapy in Lagos, Nigeria

Onwuamah CK, Salu OB, Okwuraiwe AP, Audu RA, Onwujekwe Dan, Chaplin B, Samuels JO, Okonkwo P, Idigbe EO and Kanki P

Sequencing HIV-1 isolates and ascertaining their susceptibility profile to antiretroviral drugs (ARVs) is an important tool in the clinical management of patients, particularly in cases of suspected virologic failure. We retrospectively reviewed the patterns of drug resistance mutations (DRMs) seen in 59 samples sequenced at the Nigerian Institute of Medical Research, Lagos, between 2010 and June 2012.

52 patients were evaluated on second-line therapy, a pediatric patients had 3 samples evaluated while 5 patients had 2 samples resulting in total of 59. Virologic failure was suspected clinically and/or by two rising consecutive viral loads on or after six months on the new regimen. Viroseq Genotyping 2.0 assay and an ABI 3130xl analyser were

used. Resistance reports combined information from the Viroseq software and the Stanford University HIV Drug Resistance Database. The time between repeat samples ranged from 4 – 12 months.

The most common DRMs for the NRTIs were M184V (27%), K215FISVY (20%), K219ENQR (8%), M41L (7%) and T69ND (6%). For the NNRTIs, the highest DRMs were K103NRS (28%), Y181C (20%), A98G (13%), G190A (10%) and K238T (9%). For the PIs, the highest DRMs were L10FIV (21%), V82AFMS (11%), I54SV (10%), M46I (9%) and L24I (6%). Some loci had multiple quasispecies and could indicate evidence of drug pressure. In analysis of sequential samples, one patient lost the K103N DRM to revert back to susceptible for EFV and intermediate to DLV and NVP. Another patient lost several DRMs on the 3rd repeat (M46I, I47V, Q58E, L76V & 184V) to revert back to susceptible for most PIs.

Despite significant patients accessing ART at our clinic, DRM analysis is only available to a few patients due to cost constraints. It is critical to facilitate access to this assay to improve the long term treatment outcomes for adults and children.

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

Amoo OS, Odunukwe N, Salu OB, Okwuriawe A, Onwuamah CK, Fasela EO, Jamda PD, Oforomeh O, Onwujekwe DI, Ezechi OC, Audu RA.

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 is to evaluate the risk factors and investigate the impact of HAART on cytopenia in HIV infection.

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.

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%).

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

Association of total antioxidant activity with cell mediated immunity in HIV/AIDS patients

Okoli CL, Odewale EO, Azenabor AA, Ezechi OC

Oxidative stress process is increased in HIV infection and as well as those in highly active antiretroviral combination therapy. The implication of total antioxidant activity, an early marker of oxidative stress and its association with cell mediated immunity was investigated on HIV/AIDS subjects on therapy with supplements. This was in a bid to explore the possibility of using total antioxidant activity as a surrogate marker of immune restoration on these subjects.

A longitudinal study carried out in 100 HIV/AIDS subjects receiving care at HIV Clinic of the Nigerian Institute of Medical Research, Yaba, Lagos. The control subjects consist of 100 apparently healthy seronegative individuals. Blood samples were collected for CD4 counts and six months after the commencement of therapy. Biochemical and Haematological parameters were also estimated using standard methods.

The baseline total antioxidant activity (069±0.019 mmol/l) were significantly reduced when compared with the follow up (1.18±0.038mmol/l) and controls (1.33±0.032 mmol/l),(F = 120, P=0.000). Total antioxidant activity demonstrated a significant positive correlation with CD4 Counts at baseline (r = 0.595, p = 0.000) and follow up (r = 0.39, p = 0.005). Total lymphocytes count (r = 0.39, p = 0.0005) and white blood cells count (r = 0.291, p = 0.040) showed a positive correlation both at follow up with total antioxidant activity. A negative association of total antioxidant activity (r = -0.357, P = 0.011) was observed with viral load after commencement of therapy.

Conclusion: Total antioxidant activity associated positively with immune restoration in HIV/AIDS subjects on therapy. This may serve as a useful adjunct in HIV/AIDS management.

Effect of Highly Active Antiretroviral Therapy on serum levels of beta 2 microglobulin in HIV/AIDS patients.

Odewale EO, Okoli CL, Azenabor AA , Audu RA

HIV infection is a serious public health problem .However, the advent of highly active antiretroviral therapy (HAART) has drastically improved the prognosis for HIV positive patients, substantially reducing the rate of disease progression and death.

Beta-2 Microglobulin is increased in serum during immune activation. This study was aimed at assessing the implication of altered Beta 2 Microglobulin levels in the serum during HIV management.

A total number of 100 confirmed HIV/AIDS sero positive individuals with baseline CD4 T lymphocyte values of less than 200 cells/µl participated in this study.100 sero negative individuals serve as control group. The subjects' CD4 T lymphocyte counts and viral load at baseline and after commencement of therapy were done using Cyflow and Roche Amplicor methods respectively. Biochemical variables, such as creatinine, blood urea nitrogen (BUN) and Beta 2 microglobulin were done using standard methods. Heamatological variables were assayed using an auto analyser (Mindray BC 3200).

The results of this study showed a significant reduction in the mean ±standard error of mean (SEM) levels of Beta 2 microglobulin (3.56 ± 0.31mg/L) after commencement of therapy, compared with baseline values (4.66 ± 0.34 mg/L) and control group values (1.81 ± 0.51mg/L), (f = 26.382 , p =0.000).The baseline white blood cells (4774 ± 252.56 cells/mm^3) were significantly increased compared with follow up (4363.40 ± 209.31) but is significantly lower compared with the control (5790 ± 425.10), (f = 5.620, p = 0.004) while the baseline values for the absolute lymphocyte count was significantly lower (1650.10 ± 121.75 cells/µl) compared with follow up (1676.60 ± 114.01 cells/µl) and control group (2852 ± 209.86 cells/µl),(f = 19.67, p = 0.000). Blood urea nitrogen (BUN) and creatinine at baseline (r = 0.467 p = 0.001,r = 0.438 p = 0.001) and follow up (r = 0.378 p = 0.007, r = 0.419 p = 0.002) showed a positive and significant correlation with Beta 2 microglobulin. Multiple regression analysis of the variables showed Beta 2 microglobulin to be a good predictor of baseline CD4 T lymphocyte count (t = 1.974, p = 0.050).

Serial measurement of serum Beta 2 microglobulin in HIV/AIDS may serve as a useful adjunct and prognostic marker in HIV management.

Opportunistic bacterial Pathogen in the blood of HIV positive patients

Okhiku FO, Idika NN, Aniedobe MN, Onwujekwe D and Oyedeji KS

HIV/AIDS has spread so rapidly that is has now become a pandemic causing a major public health problem, socio-economic burden and a serious threat to development. Opportunistic infections (OIs) complicate the management of patients with Human Immunodeficiency Virus (HIV) which if not treated on time lead to the deadly Acquired Immunodeficiency Syndrome (AIDS). This is because the virus affects and reduces the CD4T-cells which are responsible for the body immune response. The purpose of this study is to identify the type of bacterial pathogens causing OIs in HIV patients, identify the risk factors associated with these bacterial pathogens and the impacts on the CD4T-cells and also in the planning of appropriate therapy.

A total of hundred participants (20males and 80 females) confirmed HIV positive with age range between 20-69 years attending ART clinic in NIMR were recruited for the study. 2ml of blood was collected aseptically and introduced into 18ml of BHI broth and incubated for 7 days at 37°C. Subculture was done on BA, MAC Agar and Chocolate Agar from those that showed growth. Gram staining and biochemical reactions were carried out to identify the microorganisms. Antibiotic susceptibility testing was done on the isolated organisms. CD4 values of the patients were estimated using the PartecCyflow method.

58% of the patients had their CD4-cells below 200 cells/µl while 42% had their CD4-cells above 200 cells/µl.The value of CD4-cells of 14(70%) of the patients with isolates were less than 200 cells/µl. Only 20% of the blood samples showed growth while 80% did not show growth. *Staphylococcus species* (70%) were found to be the most common bacterial pathogen isolated. The nature and frequency of the bacterial isolated from the subjects showed *Staphylococcus aureus*(50%) to be the most prevalence followed by *Staphylococcus epidermidis*(20%), *Salmonella typhi*(10%), *Salmonella paratyphi*(10%) and *Escherichia. coli* (10%).The age 30-39yrs had the highest number of growth.

From this study, OIs is associated with apparent reduction in $CD4^+$ T cells in HIV patients. Early intervention of treatment of OIs in infected patients could lead to measures that will reduce the increased mortality rate.

Farewell picture with Mr. Abraham Oladiran, NIMR award winner (Best staff of the year, junior category) as he resigns his appointment with NIMR

An Intern working in HVL

CONFERENCE PRESENTATIONS

1). Onwuamah CK, Audu RA, Ezechi OC, Ujah IAO and Odeigah PGC. **"DNA quantity and DNA nicks in spermatozoa correlate better with reproductive outcomes than DNA fragmentation"**. 3rd International Scientific Conference. Nigerian Institute of Medical Research. Lagos, Nigeria. Nov 5–8th 2012.

2). Onwuamah CK, Audu RA, Ezechi OC, Ujah IAO and Odeigah PGC. "Antiretroviral drug is associated with spermatozoa abnormalities in albino mice". 3rd International Scientific Conference. Nigerian Institute of Medical Research. Lagos, Nigeria. Nov 5–8th 2012.

3). Audu RA, Okwuraiwe AP and Salu OB. "Serology and Genomic Test in Chronic HBV Infection in Nigeria". 6th Congress of the Africa –Middle East Association of Gastroenterologist, Calabar, Nigeria. 22nd – 24th November 2012.

4). Audu RA, Onubogu CC, Okoye RN, Nwokoye NA, Onwuamah CK, Musa AZ, Raheem TA, Aniedobe MN, Nduaga SA. and Idigbe EO. **Proficiency Testing for HIV, TB and Malaria Diagnoses in Clinical Laboratories in Nigeria.** ASLM 2012 International Conference, December 1st – 7th 2012, Cape Town, South Africa.

5). Onwuamah CK, Salu OB, Okwuraiwe AP, Audu RA, Onwujekwe D, Chaplin B, Samuels JO, Okonkwo P, Idigbe EO and Kanki P. **Patterns of Drug Resistance Mutations (DRMs) amongst Patients Failing Second-line Therapy in Lagos**, Nigeria. ASLM 2012 International Conference, December 1st – 7th 2012, Cape Town, South Africa.

COLLABORATIONS

We maintained our collaborations with the Federal Ministry of Health, APIN, Partec, Society for Gastroenterolgy and Hepatology in Nigeria, Roche Diagnostics and Roche Pharmaceuticals.

TRAININGS

Drs B.O and Ck Onwuamah completed their PhD programmes in 2012 while Mr. A.P Okwuraiwe PhD program is still ongoing

A. Formal Educational Training

NAME	PROGRAMME	STATUS
Mr E.O. Odewale	FMLSCN	Completed
Mrs F. Okhiku	FMLSCN	Completed
Mrs C.L. Okoli	FMLSCN	Completed
Mr P.D. Jamda	FMLSCN	On-going

A. Training Facilitated by HVL staff

No of HVL Facilitators	Topic	Sponsor
2	Laboratory Quality Assurance and Accreditation Conference	APIN
5	Quality control and assurance in HIV counseling and testing training workshop	SFH
1	Statistical Training Workshop on MS Excel, Epi Info and SPSS	ASLM, NIMR
6	Auditing in Quality Management System	NIMR/FMC Makurdi
1	Sample Collection Techniques for Hepatitis Viral Load	Roche Pharmaceutical

A. Internship and Industrial Training: There were 3 interns and 5 industrial trainees during the year.

Services Rendered to the Community

- There were a total of 30,396 patient visits to the laboratory in the year 2012 requesting for molecular and virologic diagnostics. This was a 12% increase above the previous year.
- Organized public lectures and free hepatitis screening on World Hepatitis Day
- Presented public lecture on World AIDS Day
- Participated in creating awareness on activities of NIMR on Radio Link

Constraints and Challenges

The unit had the following challenges within the year:

i. During installation of Cobas 4800, an automated instrument for the screening of Human Papilloma Virus, some parts were found to have been damaged during shipment. The equipment has been replaced and re-installed

ii. Prolonged downtime of our automated heamatology analyser, BC5500, Mindray

iii. Unusually long delay in the repair of broken down 250KVA generator affecting operations adversely.

Dr. (Mrs) Nneoma Idika
Chief Research Fellow / HOD

MICROBIOLOGY DIVISION

The year 2012 was quite peaceful and full of events in the Microbiology Division. Our TB Reference Laboratory was rated as a five star laboratory based on SLIPTA (Stepwise Laboratory Improvement Plan towards Accreditation) assessment on the 28th and 29th of November, 2012. Our own Prof. Oni Idigbe bagged several awards; ICEID (International Conference on Emerging Infectious Diseases); IANPHI (International Association of National Public Health Institutions); ASLM (Africa Society for Laboratory Medicine) Lifetime Achievement Honors. He was also given many global appointments in the medical science world. Some members of the division attended national and international conferences, training programmes and workshops.

MICROBIOLOGY RESEARCH TEAM

Prof. Oni Idigbe	Coordinator, Research, Planning & Management

Diarrhoea and General Microbiology Unit

Dr. Nneoma Idika	Chief Research Fellow /Head of Division
Dr. S. M. C. Ezeugwu	Chief Research Fellow
Mrs. E. Afocha	Junior Research Fellow
Mr. A. A. Adesanmi	Junior Research Fellow
Mr. M. B. Ajayi	Chief Medical Laboratory Scientist
Rev. Sis. C.O. Ejezie	Medical Laboratory Scientist
Mrs. A. S. Aiyedogbon	Laboratory Assistant
Mr. P. U. Atat	Laboratory Assistant

Immunology Unit

Dr. A. A. Adeiga	Deputy Director Research/Head of Unit
Miss O. Awoderu	Junior Research Fellow
Mr. J. I. Onyewuche	Principal Medical Laboratory Scientist

T.B Unit

Dr. C. C. Onubogu	Chief Research Fellow/Head of Unit
Miss N. Onyejepu	Research Fellow II
Mrs. C. N. Kunle-ope	Junior Research Fellow
Dr. N. N. Nwokoye	Junior Research Fellow
Mr. T.Y Raheem	Chief Medical Laboratory Scientist
Mrs. U. T. Igbasi	Assistant Chief Medical Laboratory Scientist
Mrs. N.E. Tochukwu	Medical Laboratory Scientist
Mr. A. A. Adesesan	Medical Laboratory Scientist
Mrs. I. Edi – Muyideen	Science Laboratory Technologist
Mr. M. E. Nshiogu	Senior Laboratory Assistant
Mr. T. Aje	Laboratory Assistant
Mr. P. I. Anochie	Junior Research Fellow

The Microbiology Division in NIMR is made up of 3 units, Immunology, TB and Diarrhoeal and General Bacteriology Laboratories with a total of twenty-three members of staff. In 2012, the Immunology unit monitored measles outbreak in Ogun state. The TB unit rendered diagnostic services to patients from different parts of the country including TB screening for visa purposes. The unit also conducted National TB Survey for multi drug resistant strains in the country.

The Diarrhoea and General Bacteriology unit completed its project on febrile children in Ilorin, Kwara state in North central zone of Nigeria and is currently conducting research among children under five with fever in Enugu and Ebonyi states in the South East zone. Consultancy services were also rendered to Reckitt Benckiser Nigeria Limited on evaluating quality of water used for bathing and the efficacy of the liquid antiseptic – dettol in comparison with local remedies used for water purification.

The Division collaborated with universities of Lagos, Jos and University of Iowa's Centre for Emerging Infectious Diseases to co-supervise PhD and M.Sc. students and also trained 21students that came for industrial attachment

STUDY OF PREVALENCE OF ROTAVIRUS IN DIARRHOEAL INFECTIONS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN LAGOS NIGERIA.

Idika N, Afocha E, Adesanmi A, Ezeugwu SMC, Audu R, David N, Enwuru C. A, Faneye A, Ogbonna F, Austin Akaigwe P, Attat P,

Rotavirus is the leading single cause of severe diarrhoea among infants and young children each year; rotavirus causes millions of cases of diarrhoea in developing countries, almost 2 million resulting in hospitalizations. With so much global attention in vaccine development and the introduction of Rotarix vaccine for diarrhoea in Nigeria in 2006, this study was designed to highlight the importance of Rotavirus as an aetiological agent of acute gastroenteritis among children less than five years and identify the circulating strains in Lagos, Nigeria.

The objective is to determine the prevalence of rotavirus and identify the circulating serotypes in children less than five years with diarrhoea to reduce its incidence in rural communities.

With informed consent, diarrhoeal stool samples were collected from children under five years presenting with diarrhoeal at the Surulere General Hospital and St. Mathew's Hospital, Amukoko. Information on the socio-economic characteristics of their caregivers was collected using semi-structured questionnaire.. The stool samples will be processed to identify the Rotavirus strains by PCR. Another set of questionnaire was used to collect information on the prevalence of diarrhoea in children 2 years- 5 years immunized and non-immunized with the Rotarix vaccine in Lagos.
Data obtained will be analysed using EPI-info 2002 statistical package.

146 samples have been collected so far and were processed for parasites, bacteria and rotavirus using std microbiological methods. The stool samples are also being analysed using PCR in Professor S. Omilabu's laboratory at Idi – Araba to identify the circulating strains of the Rotavirus isolated.

RESEARCH TO IDENTIFY FACTORS RESPONSIBLE FOR POOR UTILIZATION OF PUBLIC HEALTH CARE FACIITIES BY CAREGIVERS OF CHILDREN UNDER FIVE IN THE 6 GEOPOLITICAL ZONES OF NIGERIA.

Idika N, Adesanmi AA, Musa A, David N, Akitoye C, Erinne A.

In the developing countries more than 12 million children under five years die each year. 70% of these deaths are as a result of 5 conditions: pneumonia, diarrhea, malaria, measles and Malnutrition. The under 5 mortality rate in Nigeria was reported to be 138 per 1000 birth for the year 2009. Utilization of adequate public health care services is a key factor to reduction of mortality rate in children. The under-utilization of the health services in the public sector has been almost a universal phenomenon in developing countries. Most of the available evidence on access barriers has been documented in hospital settings with a bias on assessing infrastructure, drugs and other medical supplies and gathering views of health personnel and managers about problems of childhood mortality. Thus evidences are needed from caregivers who are effectively barred from accessing healthcare and also from those who experience shortcomings of health system.
The study is aimed at documenting the perceived barriers or factors that cause the poor utilization of public health care services by the care givers of children under five and short comings of health system in the 6 geopolitical zones of Nigeria to help policy makers make informed decision in efforts to reduce the morbidity and mortality in under fives, invariably achieving MDG 4.

OBJECTIVES

1. To document reasons for neglect of public health facilities by caregivers of children <5.
2. To determine the perceptions and practices of caregivers concerning different childhood illnesses.
3. To identify strategies to mitigate the possible challenges.
4. To disseminate information obtained among the policy makers to promote political will and probably inform policy.

160 caregivers of children <5 were interviewed in two of the six selected states (Osun, Kwara, Kaduna, Adamawa, Cross River and Imo) using structured questionnaire. FG and In-depth interviews were also conducted. Exit interviews with caregivers of <5 werel also conducted. Data obtained were analysed using SPSS, 15.

Map of Nigeria showing the six Geo-political zones

WORK DONE SO FAR

- IRB approval obtained.
- Advocacy visits to Ilorin, Kwara State, Oshogbo, Osun State, Owerri, Imo State and Calabar, Cross River State.

- Data have been collected from Oshogbo (Osun State) and Ilorin (Kwara State) and analysed.

ILORIN

The results from Ilorin revealed rather poor utilization of the public health facilities by caregivers of <5 simply because there is always a crowd of patients with few healthcare givers so they tend to spend a whole day there whereas they could get prompt attention and drugs at the private hospitals. However, majority of them acknowledge the better quality of healthcare from the trained doctors and nurses in the public health sector and would therefore recommend employment of more healthcare workers with improved facilities to capture good record keeping, clean environment and adequate drug supply. Some caregivers believe that some ailments like cough, diarrhoea and chicken-pox are best treated with herbs or drugs from the chemist shops..

OSHOGBO

More than 75% of the caregivers of <5 in Oshogbo use the public healthcare facilities and expressed satisfaction with the availability of vaccines, subsidized drugs and competent workers that can handle complicated cases. However, some still think that cough, cold, diarrhoea are best treated with herbs.

They recommend public enlightenment programmes in the communities to highlight the advantages of using the public healthcare facilities and adequate explanation on the operations of the National Health Insurance Scheme. They also recommend employment of young doctors that will live in the communities, increase the working hours to include weekends and provide easy transportation to the health facilities.

STATUS OF RESEARCH: On-going.

STUDY OF THE BACTERIAL, FUNGAL AND PARASITIC PATHOGENS FROM BLOOD, ANAL AND THROAT SWABS OF FEBRILE CHILDREN UNDER THE AGE OF FIVE IN ENUGU AND ABAKALIKI, NIGERIA.

Idika N, David N, Unigwe U, Adesami A, Agomo C, Ajayi, M

Infections, especially malaria and acute respiratory infections (ARI) are the leading causes of children mortality and morbidity in developing countries. In Nigeria, over 90% morbidity and 80% of mortality in children under 5 yrs arise from malaria, vaccine preventable diseases, diarrhoeal diseases and ARI, all of which can be prevented or treated at little cost. Since fever is a symptom of many acute childhood illnesses, this study was designed to identify other pathogens, apart from malaria parasite in febrile children <5 yrs in Enugu, Enugu State and Abakaliki, Ebonyi State of Nigeria.

The main objective is to identify other pathogens apart from malaria parasite that could be responsible for febrile condition in children under five years for better management.

SPECIFIC OBJECTIVES:

1) To identify the parasitic, bacterial and fungal pathogens apart from malaria parasite in febrile children < 5 yrs.
2) To determine the antibiotic susceptibility patterns of the pathogens identified.
3) To determine the nutritional status of the children in the study.
4) To identify factors influencing febrile condition in children < 5 yrs.

Study sites are the two (2) Teaching Hospitals in Enugu and the Federal Teaching Hospital Abakaliki.
Sample size is 246. The consent of the caregiver/parents of the children will be obtained. Throat, Anal swabs and blood samples will be collected from 246 febrile children <5 years presenting at the University of Nigeria Teaching Hospital, Enugu State Teaching Hospital, and Federal Teaching Hospital, Abakaliki.

Using questionnaire, anthropometric parameters of the children (height, weight and left mid-arm circumference) and socio-economic characteristics of the parents/caregivers will be recorded.
The samples will be processed using standard microbiological techniques to identify parasitic, fungal, viral and bacterial pathogens.
Data obtained will be analyzed using EPI-INFO 2002 Statistical packages to draw inferences.

DURATION: 18 - 24 months.
STATUS OF PROJECT: On-going.

ACHIEVMENTS SO FAR:

- Advocacy visits to University of Nigeria Teaching Hospital Enugu;, Enugu State University Teaching Hospital and Federal Teaching Hospital Abakaliki.
- Approval to conduct studies in the three institutions has been obtained.
- Samples collected from 15 children at on of the sites.

STUDY OF THE BACTERIAL, FUNGAL AND PARASITIC PATHOGENS FROM BLOOD, ANAL AND THROAT SWABS OF FEBRILE CHILDREN UNDER THE AGE OF FIVE IN ILORIN, KWARA STATE, NIGERIA.

Idika N, David N, Adesanmi,A, Enwuru CA, Ogbonna FN, Faneye A, Awoderu. *et a.,.*

Infections, especially malaria and acute respiratory infections (ARI) are the leading causes of childre mortality and morbidity in developing countries. In Nigeria, over 90% morbidity and 80% of mortality in children under 5 yrs arise from malaria, vaccine preventable diseases, diarrhoeal diseases and ARI, all of which can be prevented or treated at little cost. Since fever is a symptom of many acute childhood illnesses, this study was designed to identify other pathogens, apart from malaria parasite in febrile children <5 yrs in Ilorin, Kwara State of Nigeria.

General Objective identify other pathogens apart from malaria parasite that could be responsible for febrile condition in children under five years for better management.

SPECIFIC OBJECTIVES:

1) To identify the parasitic, bacterial and fungal pathogens apart from malaria parasite in febrile children < 5 yrs.
2) To determine the antibiotic susceptibility patterns of the pathogens identified.
3) To determine the nutritional status of the children in the study.
4) To identify factors influencing febrile condition in children < 5 yrs.

Study site: The the Children's Specialist Hospital Ilorin, Kwara State.

Sample size: is 220 The consent of the caregiver/parents of the children will be obtained. Throat, Anal swabs and blood samples were
collected from 154 febrile children <5 years presenting at the Children's Specialist Hospital, Ilorin, Kwara State. Same samples were collected from 66 apparently normal children <5 yrs in 2 nursery schools in Ilorin as control.
Using questionnaire, anthropometric parameters of the children (height, weight and left mid-arm circumference) and socio-economic characteristics of the parents/caregivers were recorded.
The samples were processed using standard microbiological techniques to identify parasitic, viral, fungal and bacterial pathogens.
Data obtained were analyzed using EPI-INFO 2002 Statistical packages to draw inferences.

DURATION: 18-24 months
STATUS OF PROJECT: Completed.

BLOOD SAMPLES:
Less than a quarter of the febrile children had malaria parasites in their blood; less than 20% had bacteraemia mainly *Salmonella* and *Staphylococcal spp,* and more than 80% of these pathogens were resistant to three or more antibiotics. About 10% of the blood samples were positive for the Dengue fever virus.

THROAT SWABS:
More than 50% of the Throat swabs grew bacteria mainly *Staphylococcal spp* and *Streptococcus pneumoniae* with more than 70% showing resistance to three or more antibiotics. About 20% also grew fungi mainly *Candida spp*.

STOOL SAMPLES:
Less than 10% of the stool samples had intestinal parasites mainly *Entamoeba spp* and *Ascaris lumbricoides.*
More than 90% of the stool samples grew bacteria mainly *Escherichia coli* and over 50% of these pathogens were resistant to 3 or more antibiotics.

NUTRITIONAL STATUS:
For the test group 31.9% of the children were mal-nutrished
For the control group 122.3% were unmalnutrished

NIMR Team at the Children Specialist Hospital, Ilorin

Sample collection procedure from children at Ilorin, Kwara State

STUDY ON THE EFFICACY OF A COMMERCIAL LIQUID ANTISEPTIC (DETTOL ®) AND LOCAL REMEDIES ON THE BACTERIAL AND FUNGAL PATHOGENS IN WATER USED FOR BATHING IN LAGOS STATE.

Idika N, Afocha E, Adsanmi A, Enwuru C, *et., al.*

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 microorganism (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.

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.

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

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

Results showed that 14 of the 16 water samples were contaminated with bacteria (mainly *Bacillus spp Enterobacter, Enterococcus faecalis, Staphylococcus spp*) most being resistant to at least 3 antibiotics. Only water sample from 1 of the 3 taps, one water sample from 1 of the 3 boreholes were potable, while rain water samples tested were not contaminated except the sample collected on a windy day. Long storage increased the bacterial population of the water samples collected

Most of the water samples tested were soft and the addition of the local remedies had little effect on their hardness. The liquid antiseptic (dettol) reduced the bacterial population by > 98% while Ash, Potash alum, alum and lime showed varying levels of reduction (5 – 55%) on the bacteria population. Salt and the seeds of *Moringa oliefera* showed little or no effect on the bacterial population.

Colony Counting

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. The liquid antiseptic (dettol) showed > 98% efficacy but the local remedies for water treatment tested in this study, though affordable, are not effective for treating water for bathing.

IMMUNOLOGY UNIT

PRO- VERSUS ANTI- INFLAMMATORY CYTOKINES PROFILE IN CHILDREN INFECTED WITH MEASLES IN AN OUTBREAK SOUTHWEST, NIGERIA.

Adeiga A.A., Awoderu O.B., Faneye O., Akintunde G.B. and Onyewuche I.

Measles is an acute viral illness, highly contagious and a leading cause of childhood mortality. It is characterized by high fever, malaise, cough, coryza and conjunctivitis followed by maculopapular rash (Moss and Griffin, 2006). The infection is either mild or severe depending on the immune status of the child. The children infected develop both innate and adaptive immunity to curtail the Measles infection.

Host immune responses to measles virus are essential for viral clearance, clinical recovery and the establishment of long term immunity (Moss and Griffin, 2006). Early innate immune responses in the measles infection occur during the prodromal phase and include activation of Natural Killer cells and increased production of Interferon (IFN- α and –β). Following measles virus infection in children, T- helper cell$_1$ (Th_1) response developed could be characterized by Interferon-γ (IFN-γ) and Interleukin-2 (IL-2) in the early phase of infection, but T- helper cell$_2$ (Th_2) or mixed Th_1/Th_2 response produces the following cytokines: Interleukin-4 (IL-4), Interleukin-13 (IL-13), Tumor necrosis factor-α (TNF-α) and Transforming growth factor-β (TGF-β), and these predominate as the infection progresses (Griffin and Ward, 1993).

Development of the Th_1 response in measles infection is primarily due to the production of Interleukin-12 (IL-12) by macrophages and dendritic cells and is critical

to the development of cell mediated immunity (Trinchieri, 1998). However the interaction of measles virus with macrophages and dendritic cells leads to reduction in the production of IL-12 (Karp et al., 1996). This reduction of IL-12 results into the suppression of Th_1 responses which leads to suppression of cell mediated immunity, increased susceptibility of patients to secondary infections that are associated with acute measles virus infection (Atabani et al., 2001, Tetteh et al., 2003).
The interplay of Th_1 responses transforming to Th_2 or Th_1/Th_2 cytokines responses in measles infection do occur in both mild and severe states of infection which characterises measles infection. But the interaction of these serum cytokines by which they influence each other at the mild and severe course of infection is not clear. The quest to know the relationship of these cytokines in the acute state of measles infection informed the study.

JUSTIFICATIONS

- In every Measles outbreak, there is always an acute infection that warrants hospitalization of the victims
- Acute infections could trigger off inflammatory process, which could cause damage to organs leading to disability such as otitis media, blindness or death
- There is need to identify the inflammatory cytokines that exaggerate at the state of acute infections as possible biomarkers and correlate this with syndromic signs of infection.
- The syndromic signs can be used to predict inflammatory process and prompt therapeutic intervention can be instituted to reduce damage to organs.

Main Objective is to study the pattern of cytokines production in mild and severe states of Measles infection.

SPECIFIC OBJECTIVES

- Establish Measles infection in subjects studied
- Determine the serum level of pro- and anti-inflammatory cytokines produced in mild and severe states of Measles infection
- Evaluate the interaction between pro- and anti- inflammatory cytokines

The study was carried out with the approval of NIMR-IRB. Informed consent was obtained from the children's parents or guardian usually in the presence of surveillance officers.

Four (4) sites were slated for the study. This report was carried out in Ogun states in the following local government areas: Obafemi-Owode, Abeokuta North, Yewa South, Ewekoro, Yewa North, Ipokia, Odogbolu and Ado-Odo Ota.
Other sites are Lagos, Oyo and Osun states. These are yet to be covered.

The 65 children aged nine months to less than ten years brought to health facilities for illness and showed signs of high fever, rash and cough during outbreak of Measles in the LGAs of Ogun state mentioned were the participants in the study. Thirty seven healthy, age and sex matched children with Measles vaccination history were also recruited from the same sites.

Two (2) milliliter of blood collected from the children during examination at the hospital facilities were processed using their sera. The serum was used in confirming Measles infection and assessing the following serum cytokines: Interleukin -1β (IL-1β), Interleukin 12 (IL-12), Tumor necrosis Factor– α (TNF-α) and Transforming Growth Factor- β (TGF-β). All the 65 children brought to hospital facilities were confirmed to have Measles by the IgM antibody detected in their sera.

The study showed that the inflammatory cytokines were high at the severe states of Measles infection in the children having acute infection. More significantly high was IL-12 (120ng/mL) among the cytokines when compared with the control (70ng/mL) and this is the driver of production of other inflammatory cytokines and the rise was more common among the males than females. Tumor Necrosis Factor-α that mostly triggers inflammatory process was also found to be high at the severe state and was found higher in males.
Saving this inflammatory process in the acute state of Measles infection was the high production of TGF-β which is an anti-inflammatory cytokine during this severe state and this made it a compensatory process. This high production of TGF-β (2603.6ng/mL) is very significant when compared with the mild states (746ng/mL) of infection and control (672ng/mL). The significant rise of this anti-inflammatory TGF-β cytokines was also observed to be common among the males. This could explain why more damage due to inflammation is more observed in females' children, which could lead to high mortality. The cytokines produced in the mild state of infection were high but relatively near the control values. The children in this state of infection recovered faster.
The children with severe infection had longer recovery period. The inflammatory symptoms such as conjunctivitis took seven days to subside among the nutritionally compromised children as compared to 3 to 4 days among the nourished children in the severe state.

STATUS OF RESEARCH: On-going

CHALLENGES IN THE STUDY

- Fund constraint to cover other sites and buy more reagents and materials for sample collection and processing

- Resistance from some of the States selected as sites of study

WAY FORWARD

1. More fund allocation to cover more sites of study
2. Increase advocacy to the remaining sites

SERUM LEVELS OF Th1 AND Th2 CYTOKINES PRODUCED IN NIGERIAN CHILDREN WITH MEASLES VACCINE FAILURE IN OUTBREAK OF MEASLES IN OGUN STATE, NIGERIA

Adeiga A.A., Awoderu O.B., Faneye O., Akintunde G.B. and Onyewuche I.

Measles Immunization Coverage carried out frequently in Nigeria has reduced morbidity and mortality rate of measles infection. However, the immune responses generated after measles vaccination vary with individuals. Measles vaccine immunization induces both humoral and cell-mediated immune responses. From the extensive studies of humoral immunity developed after measles vaccination, it is believed that both primary vaccine failure (complete lack of antibody after immunization) and secondary vaccine failure (waning or insufficient antibody after immunization) may be responsible for variable efficacy of measles vaccine (Anders *et al*., 1996, Markowitz & Katz 1994, Orenstein 1986). This low level of measles specific antibodies that could be generated from measles vaccine failure may produce risk of mild or subclinical measles infection in some individuals (Mossong and Muller 2003). When there is a measles outbreak in vaccinated children the disease is reported to exhibit reduced severity, mild clinical symptoms and these mostly occur in older children who have history of measles immunization and are probably due to vaccine failure and waning immunity with age (Whittle *et al*., 1999, Whittle *et al*., 1999).

In this study, we examined the pathogenesis of measles infection in vaccine failure situation with respect to pro and anti-inflammatory cytokines produced and associated clinical presentations in children during Measles outbreaks in four Local Government Areas of Ogun state (Odogbolu, Ewekoro, Ado-Odo and Abeokuta-North).

The rationale for this study is that vaccinated children getting infected during measles outbreaks is an evidence of vaccine failure. There is need to know the magnitude of this infection in vaccinated children and the age range at which this could be critical. The reason is that severe measles infection is still observed in vaccinated children and this may induce critical inflammatory process.

The aim of the study therefore is to evaluate the effectiveness of vaccination on pathogenesis of measles infection in vaccinated children.

SPECIFIC OBJECTIVES

1. Confirm measles infection by establishing IgM in the serum.
2. Evaluate the protective IgG level in vaccinated children
3. Identify serum cytokines produced at exaggerated level in children infected with measles.
4. Compare the serum cytokines produced in both vaccinated and unvaccinated children.

Sixty five (65) children with age range of 6 months to 11 years who reported at health facilities infected with measles during outbreak were studied along with 37 healthy children in the same environment in the state.

Serum samples obtained from blood collected from the children were tested for measles IgM and IgG antibodies to determine state of infection and level of protection respectively. Serum cytokines Interleukin-1β (IL-Iβ), Interleukin -12 (IL-12), Tumour Necrosis Factor-α (TNF-α) and Transforming Growth Factor-β (TGF-β) were also assessed using ELISA techniques.

65 children that reported among the 92 children reported at the health facility were confirmed for measles infection by the IgM antibodies detected. Hundred percent of infected children developed Kopliks spot in the bucal mucosa, 80% with coryza, 100% with fever and rash, 72% with bronchopneumonia, 95.6% with conjunctivitis and 27.7% with cough.

Among the 65 infected children, 47.7% were vaccinated and of these, only 32.3% had detectable IgG level. Thirty four 34(52.3%) were not vaccinated and of these 55.9% had detectable IgG, which could have developed from previous subclinical infection. Unfortunately those with detectable IgG were not protected from infection. All the 17 vaccinated children infected with measles were under five years and 11 of them developed inflammatory cytokines above normal range. Two(2) of these children were above 5 years.

Our result also showed that both vaccinated and unvaccinated children produced inflammatory cytokines above normal range with no difference between the two groups. Though the level of anti-inflammatory cytokines produced was higher in vaccinated than the unvaccinated children, there was no significant difference between these levels.

Our observation agreed with reports that mild measles infections could be observed in children above five years of age which could be attributed to waning of immunity, only 2 children were observed in this category. But severe infections with inflammatory cytokines in the high range were observed in children under five years of age, this called for concern, because it was not expected. The measles vaccine used in the vaccination of the children has not elicited any protective immunity, since there is no difference in the pathogenicity of Measles virus between the vaccinated and unvaccinated.

STATUS OF RESEARCH: On-going

CHALLENGES IN THE STUDY CONDUCTED

1) Inadequate facilities for determining local strains of Measles virus that could possibly cause vaccine failure.
2) Vaccinators fatigue due to shortage of manpower. This could cause improper method of

vaccination which could affect response to vaccination in the children vaccinated.

Way Forward

1) Determine the integrity of measles vaccine at the point of use.
2) Establish nutritional status of the children vaccinated as this could affect immune response to vaccination.
3) Identify circulating strains of Measles virus, to find out if there is any variance to the vaccine strain
4) Advocacy for proper maintenance culture of power backup and its significance in coldchain maintenance.
5) Adequate staffing of immunization centers to prevent missed children (vaccine drops out).
6) Training and retraining of vaccinators to sharpen their skills.

TUBERCULOSIS (TB) UNIT

The Tuberculosis unit is a component of the Division of Microbiology of the Institute. The Unit houses the National Reference laboratory for tuberculosis in the country. The National Reference laboratory has adequate capacities in various areas of TB diagnosis, prevention research and services. Specifically the laboratory has capacities for both light and fluorescent techniques. It also has facilities for the culture, identification/characterization and drug-susceptibility testing for Mycobacteria strains by both on solid and in liquid media.

The Unit has a specialized molecular biology laboratory with adequate infrastructural facilities and capacity for the molecular diagnosis of multi-drug resistant tuberculosis.
The diagnosis tools used are the Hain Line-Probe assays which can diagnose resistance to Rifampicin and Isoniazid, the two most poten 1st line anti-TB drugs. Within the year under report the GeneXpert diagnosistic tool was also established. This is a molecular tool that can diagnose for Mycobacteria strains resistance to Rifampicin. Rifampicin is the most potent of the first line drugs and resistant to rifampicin is presumptively taken as a surrogate for MDR-TB.
Within these available facilities the unit has been able to carry out activities that bothers on various areas of TB diagnosis and management. Essentially, in 2012 most of the activities of the Unit focused on the areas listed below:

- Research
- Surveillance
- Support services to the National Programme

Specific activities carried out in each of the above areas are briefly described below.

Research

In keeping in line with the prime mandate of the Institute, a significant number of the activities of the unit, within the year under review, were focused on research. Some of these research programmes were rounded off, while some are still on-going, a few were initiated within the year of report. Brief descriptions of some of these projects are highlighted below:

Completed Projects

The following research projects were rounded off (completed) in 2012 and data obtained fro some of these projects were published in 2012.

Genotyping of Mycobacterium tuberculosis complex based on restriction enzyme analysis of the hsp65 gene.

Nwokoye NN, Nwokorie FO, Iwalokun BA, Onubogu CC, and Idigbe EO.

Several genotypes of Mycobacterium with varied degrees of virulence and drug resistance exist globally. Grouping of the genotypes into principal genetic groups is critical for tuberculosis (TB) control.

This study determined the suitability of polymerase chain reaction-restriction enzyme analysis (PCR-REA) technique as an epidemiology typing tool and a technique for drug resistance surveillance of TB.Seventy-five Mycobacterium tuberculosis strains isolated in the National TB Reference Laboratory, Nigeria Institute of Medical Research (NIMR) Yaba, Lagos, Nigeria were identified and their susceptibility to isoniazid and rifampicin determined using Genotype MTDRplus technique. Isolates were further confirmed by polymerase chain reaction (PCR) with primer specific to 65 kDa heat shock protein (hsp65) of Mycobacterium species, Fingerprinting was done by restriction enzyme (Bst Ell) analysis. Of the 75 isolates studied, 5(6.7%) were multi-drug resistant (MDR)TB-.

(14.7%) and (9.3%) were mono-resistant to rifampicin and isoniazid respectively. PCR-REA profile revealed 3 different patterns. Majority (96.2%) of the susceptible strains and 100% each of mono-resistant and MDR-TB yielded 2 fragments of 250 and 120bp.

Our findings demonstrated that hsp65 kDa based molecular genotyping technique is a rapid, simple and easy-to-interpret method and may be used as a predictor of M. tuberculosis genetic variation.

- Data from this study have been published in a peer-review journal.

TB Treatment Default Rate Among Patients Attending a Health Facility.

Investigation: Raheem TY, Onubogu CC, Igbasi UT, Nwokoye N, Tochukwu N, Kunle-Ope C, Ejezie C, Omoloye R, Okoye RN, Adesesam Adesegun, Ajayi F, Aramide Nureni, Oba Abdul Rashed and Dan Onwujekwe.

The cornerstones of an efficient TB control programme are accurate diagnosis and effective chemotherapy WHO recommended that programmes should strive to effectively treat 85% of cases diagnosed in their communities. However, in some settings meeting this target has had some challenges. Because of the 6-8months treatment period, some patients develop low adherence to drug intake while a few others default. To

mitigate these challenges, it is essential for programmes to periodically evaluate the various rates of cure, default and will help identify the areas of gaps to be strengthened to be able to achieve improved cure rate.

The objective of this study was to assess the treatment success and default rates amongst some of the patients accessing TB care services at the DOTs Clinic and the laboratory services of the Nigerian Institute of Medical Research, Yaba, Lagos. This was with the view to identifying the strengths and lapses of the Institute TB treatment programme.

The study reviewed the records of the first 257 patients diagnosed as AFB smear positive in 2012. Some of the patients were referred to the DOT centre/Laboratory from the HIV Clinic and that had earlier been screened for HIV. These patients were placed on TB treatment with first line drugs as soon as they were diagnosed positive for AFB. The review of the records was conducted two months after the patients had completed treatment.

The age and sex distribution of the patients showed that 135(52.5%) were females while 122(47.5%) were males. The age range of the patients was between 12 and 74 years with a mean age of 34 years. Furthermore, 139(52.1%) were HIV negative while 118(47.9%) were HIV positive. Treatment success, (cure) was taken for patients who were to negative at the end of the treatment. Treatment failure was taken for patients who were still smear or culture positive at the end of treatment.

Default was taken as patients who did not complete treatment due to break in treatment or completely abandoned treatment. Based on these indicators, the records of these patients showed that 192(75%) were cured (successfully treated), 58(22%) defaulted, 4(2%) had treatment failure while 3(1%) died in course of treatment. Of the 192 patients that were cured, 90(47%) were HIV positive, while 102(53%) were HIV negative. Essentially 41% of the defaulter cases were HIV positives while 59 were HIV negative. Two of the 3 recorded deaths occurred in the HIV positive patients. The numbers of patients with treatment failure were equally distributed amongst the HIV positives and negatives.

Conclusions: The study established a treatment success rate of 75% amongst these patients. This is still short of the WHO recommended 85% rate and apparently this is due to the 22% default rate which was also recorded amongst these patients. Some of the factors responsible for default amongst these patients have been identified and some strategies have been developed to mitigate these factors. It is evisaged that the treatment success rate will improve if the default rate is reduced.

Status of Project: The project was completed in the last quarter of 2012 and the data generated are being processed for publication.

Performance of GeneXpert MTB/RIF for the Diagnosis of Tuberculosis and Drug Resistant Tuberculosis

Nwokoye NN, Nwadike PO, Onubogu CC, Igbasi UT, Raheem TY, Tochukwu N, Gidado M, Idigbe EO.

The burden of TB and Drug Resistant TB has been on the increase globally. The public health problem with the emergence of Drug Resistant TB has been enormous as most of the Strains responsible for (DR)-TB are often resistant to most of the first line drugs. Resistance to the two most potent first line anti-TB drugs; Rifampicin and Isoniazid, is defined as Multi-drug resistant TB. The Main Challenge is that most of the developing countries don't' have the capacity for the diagnosis of (DR)-TB and MDR-TB.

The cost of setting up these diagnostic capacities and infection control requirements are enormous and stringent and many of the developing countries cannot afford these. As a result of this, many cases of DR-TB and MDR-TB remain undiagnosed in various communities in the developing countries. These undiagnosed index cases continue to transmit DR and MDR-TB within the communities thus increasing the overall global TB burden. To minimize these challenges efforts were made in the last 5-6 years to develop newer diagnostic tools with minimum infection control requirements. A few years ago, the Hain Assay was approved for the diagnosis of resistance to Isoniazid and Rifampicin. This is a molecular biology technique but still has some level of infection control requirements. In 2011, a new diagnostic tool was approved by the WHO. This is the GeneXpert which is equally a molecular biology technique for the diagnosis of resistance to Rifampicin. The infection control requirements for this technique are quite minimal and the WHO has advocated the adopted of this technique by developing countries. Nigeria, like many other countries adopted the use of the GeneXpert in late 2011. However, there was need to evaluate the efficacy of this.

A total of 300 spot sputum specimens were collected from patients that were referred to the National TB Reference Laboratory, NIMR. Categories of patients that were enrolled included individuals at risk of drug resistant (DR)-TB and HIV positive, smear negative TB suspects. Exclusion criteria included new TB suspects and known DR-TB and HIV positive, smear negative TB suspects. Exclusion criteria, new TB suspects and know DR-TB patients on treatment. GeneXpert MTB/RIF was performed as per protocol and results analyzed using EPI info statistical software.

Mycobacterium tuberculosis (MTB) was detected in 95(31.6%) of the specimens, of which 43(45.3%), 23(24.2%) and 29(30.5%) were from HIV-negative, HIV-positive and unknown HIV-status patients respectively. Among the HIV-negative group, 19(44.2%) of the MTB strains were rifampicin-resistant while 7(30.4%) MTB strains from the HIV-positive group were resistant to rifampicin. Majority (72.4%) of the mutations that

resulted in rifampicin-resistance were associated with probe E while (13.8%) and (10.4%) of the mutation were associated with probe D and B respectively. Assessment of the killing effect of the sample buffer showed that 9.5% of MTB-positive strains remained viable after 15 min of incubation with the buffer.

Conclusion: These data demonstrated that Xpert MTB/RIF is a promising tool for rapid diagnosis of TB and DR-TB in both HIV-positive and negative populations. However, the presence of viable bacilli after incubation is evidence that buffer could not kill all the bacilli thus biosafety precautions must be observed for Xpert MTB/RIF protocols.

Early Detection and Surveillance of Multi-Drug Tuberculosis (MDR-TB) and Extensively Drug Resistance TB Using Culture and ?Molecular Techniques.

Idigbe EO, Onubogu CC, Onyejepu N, Nwokoye NN, Kunle-Ope CN, Raheem TY, Igbasi UT, Tochukwu NE, EjezieCO, Wahab MO, Efere LO, Nwadike PO, Omoloye RM, Okonkwo IT, Abiodun AT, Adegboyega T, and Adeiga AA.

Several decades after effective drugs a regimen was available for the treatment and cure of tuberculosis, the disease continues to be the world's most important cause of morbidity among adults. About 9 million new cases of TB are reported globally every year. It causes 6% of infant deaths, 20% of adults and 26% of avoidable deaths in developing Countries.
Several factors have been identified as responsible for the current global resurgence of TB. These include essentially poverty, HIV infection and multi-drug resistant TB (MDR-TB) strains which is defined as TB cause by organisms resistant isoniazide and rifampicin, the two most effective first-line anti-TB drugs. The emergence of MDR-TB has become a major public health problem in a number of Countries including Nigeria. It continues to threaten the progress made in TB control.

A nationwide anti-TB drug resistance survey took place in order to establish the magnitude of MDR-TB in Nigeria. But drug resistant TB cases are emerging. This could constitute a public health problem if not controlled. The project will enhance prompt and effective diagnosis of MDR-TB cases in the country for onward referral to MDR-TB wards. This is the only way to break the chain of transmission of MDR-TB in the community because if cases of MDR-TB are not detected and treated they remain in the communities and transmit primary MDR-TB infections.

The study is aimed at defining the rate and pattern of resistance to first line anti-TB drugs in 4 Geopolitical Zones of Nigeria: South-West, South-East, North-Central, and North-West; determine the incidence of MDR-TB amongst new and old cases of TB/HIV co-infected patients and congregates setting like prisons.

The study commenced in the South-West Zone. Sputum samples from category II TB patients were sent to the NIMR TB Reference Laboratory for Drug Sensitivity Testing. These samples were processed by sputum smear microscopy and culture. Drug susceptibility testing (DST) to anti TB drugs were carried out by both Solid and liquid culture methods. Also DSR by Molecular method for confirmation was done using Hain Assay Technique.

Between mid 2011 and mid 2012 a total of 488 sputum samples from 140 patients from health facilities in South-West Zone were processed. Out of the 488 samples 37 MDR-TB were recorded comprising 25 (68%) males, 12 (32%) female. They were all in the age group 20-60 years. Twenty (20) (54%) were Rifampicin resistant comprising of 13 65% males 7 (35%) females. Four (4) were Isoniazid resistant comprising of 1 (35%) male, 3 (75%) females comprising of 18 (67%) males, 9 (37) females and they were 20-40 years. Data also showed that 17 were NTM (Non tuberculosis) (67%) comprising of (37%) 9 (53%) males and 8 (47%) females age group 25-70 years.

Data from the study showed that the Cat II TB patients presenting at some of the health facilities in South Western geo-political zone of the country were cases of MDR-TB. Some were mono resistant to Rifampicin and Isoniazid. These data indicated the urgent need to intensify early case-finding and provision of second line anti-TB drugs for MDR-TB case. Status of project: On-going in the other geo-political zones of the country.

SUPPORT SERVICES TO THE NATIONAL PROGRAMME

The TB Unit also provided support services for various components of the National TB Control Programme. In 2012, the supports of the unit were in the following areas: routine TB case-detection, surveillance for **MDR-TB, monitoring of response for MDR-TB cases on second line anti-TB drugs, national TB prevalence survey. A** brief report on the activities in these various support areas is reflected below:

Routine TB Case-Detection: The Institute Contributes towards one of the overall objectives of the National Control Programme; to enhance case-detection within various populations and communities in the country. The cornerstone of an effective TB Control Programme

PAPER PRESENTED/CONFERENCES ATTENDED IN 2012

1.International Union against Tuberculosis and Lung Disease from 11-18th November 2012 held in Kuala Lumpur Malaysia. Sponsored by IHVN (Global fund) Dr. CC Onubogu

2.Molecular Detection of rifampicin and isoniazid resistance in *Mycobacterium tuberculosis* in a high burden Tuberculosis Setting. African Society for Laboratory Medicine (1st International Conference) held

in Cape Town, South Africa from 1st – 8th December, 2012 Ms. N. Onyejepu

3. Knowledge of HIV status and its impact on TB treatment adherence among patients attending a Health facility in Lagos. 30th IFBLS Conference in Berlin Germany 18th – 23rd August 2012. Mr. TY Raheem

4.Bilirubin and packed cell volume of Neonates with normal and low birth weight in a facility in Lagos – Nigeria. AMLSN 48th National Scientific Conference/ Workshop in Benin City, Edo State 10th -14th September 2012.

5.Participation at the 3rd International Scientific Conference of the Nigerian Institute of Medical Research (NIMR) from 5th - 8th November, 2012 at NIMR, Yaba, Lagos, Nigeria. All staff

SERVICES RENDERED IN 2012

The following services are being offered by the Lab

1)TB Laboratory diagnosis support to the DOTS Clinic and APIN/PEPFAR NIMR site. A total of 6336 sputum samples were processed from 3168 patients for the DOTS clinic.

2)MDR-TB surveillance for IHVN/Global Funds.

3)National TB Prevalence survey. NIMR as a National TB reference Lab. anchored the Laboratory activities for South-West and some states in the North. A total of 1324 sputum samples from 669 patients from 7 clusters were received and processed for sputum smear microscopy culture and identification from March to November, 2012.

4)Training of 13 project/IT students from tertiary institutions on Tuberculosis bacteriology as shown I PhD, 2 MSc, and 10 IT Students.

SOURCES OF FUNDING/COLLABORATORS

We had collaborations with Federal Ministry of Health (DOT Services etc), APIN Nigeria (Support for SLIPTA Accreditation process), and FHI 360/USAID new BSL3 Laboratory, IHVN, IANPHI / EDCTP, WHO/TB CARE and NIMR Management

CONSTRAINTS AND CHALLENGES:

The Unit had the following challenges during the year-

1)Late release of funds Sby Federal Government of Nigeria.

2)Lack of maintenance of some equipment especially MGIT Machine for Liquid culture resulting in the breakdown of the Machine.

3)Funds available for TB Lab were only from IPs and inadequate.

5)The Annual flooding of the Lab and its environ.

■ **Training of Staff of NIMR TB Reference Laboratory on GeneXpert MTB/Rif Assay**

Conferences and Workshops

Attended by Members of the Division in 2012

Dr A.A. Adeiga	2nd Policy retreat Organized by Nigerian Academy of Science, Lagos. Paper presented: A review of NIMR's research activities on Non-Communicable Diseases	27th – 28th March, 2012
	A 3-day Mentorship Programme on Establishment of Health Research Ethics Committee and Capacity Building of Human Resources and Infrastructure, Lagos. Paper presented: International Collaborative Research.	4th – 16th August 2012
	Advanced Immunology Training Course in the Tropics at Uganda Virus Research Institute Entebbe, Uganda	10th – 12th Sept. 2012
	National Institute for Pharmaceutical Research and Development (NIPRD)/ STEP-B Stakeholders forum, Abuja	30th October 2012
O.B. Awoderu	Africa Conference On Infectious Diseases, Emergency Risks And Travel Medicine, Owerri, Imo State.	11-15 April, 2012
	DNA forensics Colloquium: From Crime scene to the courtroom: The DNA Evidence, UNILAG, Lagos.	24-25 Sept, 2012
Mr J. Onyewuche	CPC capacity building workshop, Akure, Ondo State	26-28 June 2012
	World Diabetes Day	15th Nov, 2012
Dr. S. M. C. Ezeugwu	12th Annual Scientific Conference of Nigerian Society for Experimental Biology (NISEB) held at the University of Benin, Benin-city.	14th – 17th March, 2012.
	36th Annual Scientific Conference of the Parasitology and Public Health Society of Nigeria (PPSN) held at the Federal University of Technology, Akure, Ondo-state.	18th - 21st Sept., 2012
Mr. T.Y. Raheem	E-Learning Methodology & course Development Training at Abuja Sponsored by USAID (K4 Health)	31st Jan.– 3rd Feb 2012
Dr. N. N. Nwokoye	The Nigerian Thoracic Society Master class on Tuberculosis and Chest infections at the Lagos State University Teaching Hospital and the regent Nigeria Sponsored by NIMR	26th – 27th June, 2012
	Laboratory Biosafety at the National TB and Leprosy training center, Zaria Sponsored by FHI 360	31st July–14th Aug. 2012
Ms Oby Onwudinjo	E-TB Manager Data Training at Ebonaz Hotel, Maryland Sponsored by MSH/TB CARE.	8th–17th Feb., 2012
Dr. C. C. Onubogu	North western University Fogarty AIDS International training and research program 49th Annual Research Workshop at IITA Conference centre Ibadan Sponsored by USAID (K4 Health).	June 26th – 27th, 2012
Dr. N. N. Nwokoye, Mrs. Kunle-Ope	Molecular Epidemiology of MTR TB in West Africa. West Africa Network of Excellence for TB AIDS & Malaria (WANETAM) at the Medical Research Council, the Gambia. Sponsored by EDCTP.	17th-21st Sept., 2012
Dr A.A. Adeiga, Dr. N. Idika O.B. Awoderu	Role Of Health Research Institute in Emergency Preparedness and Response in Nigeria, NIMR, Lagos	17th-18th Oct.,2012
	3rd International Scientific Conference of NIMR, Lagos **Mrs. Igbasi, Mrs. O. G. Iyke-Azike, Mrs. Tochukwu N. E, Mrs. I. O. Edu-Muyideen, Mr. A. A. Adesesan, Dr A.A. Adeiga, Dr. N. Idika,O.B. Awoderu, Dr. N. N. Nwokoyo, Mrs. Kunle-Ope, Dr. C. C. Onubogu**	5th -8th Nov., 2012
Dr. N. Idika, MsO.B. Awoderu	One-Day training on emergency preparedness and response, NIMR, Lagos state	12th June, 2012
Mrs. Igbasi, Dr. N. N. Nwokoye Mr. T.Y. Raheem	Strengthening Laboratory Management toward Accreditation (SLMTA) training at NIMR Sponsored by CDC/IANIPHI/NIMR	31st Jan–3rd Feb., 2012

Dr Stella I. Smith
Deputy Director/HOD

MOLECULAR BIOLOGY & BIOTECHNOLOGY DIVISION

The Division had prior to the formation of Research Groups been involved in communicable and non-communicable diseases of public health importance.The Division successfully organized the 4th Annual Hands-on-Training on Molecular Biology and Biotechnology workshop; as well as training for members of staff involved in the project titled 'Survey and Mapping of leading causes of Childhood Mortality in Nigeria'.

During the year, the Division acquired equipment grant as well as improved the infrastructure in the Division through the German Research Foundation (DFG) grant. The dwindling number of staff in the Division resulted from transfers to other Divisions, or other establishment, or resignations. Currently, one member of staff is due for retirement early next year.

The Division hopes to get more staff either through grant or NIMR advertisement in areas of genomic medicine to look at genomics of diseases of public health importance

MOLECULAR BIOLOGY & BIOTECHNOLOGY TEAM

Dr. SI Smith	Deputy Director (Research)/HOD
Dr. K. S. Oyedeji	Chief Research Fellow
Dr. M. T. Niemogha	Chief Research Fellow (till September 30th, 2012)
Dr. B. I. C. Brai	Research Fellow I
Dr. F. O. Nwaokorie	Research Fellow II
Mr. T. A. Bamidele	Research Fellow II
Mrs. H. A. Goodluck	Junior Research Fellow
Mr. J. A. Yisau	Junior Research Fellow
Mrs. A. Adagbada	Junior Research Fellow
Mr. E. A. Omonigbehin	Chief Science Laboratory Technologist
Mr. K. A. Akinsinde	Assist Chief Med. Lab. Sci. (till August 2012)
Mr. M. Bamidele	Principal Science Laboratory Technologist
Mrs. T. W. Fesobi	Snr. Sci Lab Tech. (till August 2012)
Mrs. M. A. Fowora	Senior Science Laboratory Technologist

SURVEY AND MAPPING OF LEADING CAUSES OF CHILDHOOD MORTALITY IN NIGERIA

Ujah IAO, Smith SI, Adesida S, Nwaokorie FO, David A, Yisau JI, Omonigbenin E, Bamidele M, Fowora MA, Adagbada AO, Adeneye A, Musa A, Adedeyin OO, Adeboye M, Eneh A, Ibeziako N, Jiya N, Oguche S, Bello M, Olowu O and Iroha E.

Child mortality is an important indicator of the level of development of a society (Vaid et al., 2007). In 2003, the World Bank documented an under-five child mortality rate of 183 per 1000 live birth for Nigeria, one of the highest in the world (World Bank, 2003). One contributory cause can be expected to be the country's poverty level or poor environment, which is concentrated in rural areas or slum area in big cities and which has led to poor health outcome. Poverty or poor environment might exacerbate the problems of poor health and prevalence of childhood diseases, hence high mortality risks.

However, few studies have investigated the association between diseases, socioeconomic, environmental, and individual risk factors in Nigeria and other developing countries (Onyiriuka, 2005; Ngianga-Bakwin et al., 2007; Awoati et al., 2009). In view of the fact that, the United Nations (UN) has set the Millennium Development Goals (MDG4) for all countries worldwide to reduce the rate of infant mortality in under-5s by two-thirds between 1990 and 2015, a better understanding of the causes of death among children is therefore essential to improve approaches for child survival interventions. By identifying groups or settings in which mortality is high, and factors responsible for the observed high mortality, preventive actions can be more effective.

This study therefore sets to estimate the country's specific causes of child deaths.

The general objective of the study was to carry out a retrospective study on the causes of childhood deaths in

SURVEY AND MAPPING OF LEADING CAUSES OF CHILDHOOD MORTALITY IN NIGERIA

Ujah IAO, Smith SI, Adesida S,
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The general objective of the study was to carry out a retrospective study on the causes of childhood deaths in tertiary hospitals in Nigeria for a period of five years (2005-2009).

A multistage sampling procedure that entails the use of simple random and systematic sampling technique was used to carry out the retrospective cross sectional hospital survey. Questionnaires were designed to obtain information on retrospective birth history, order of birth, survivorship status, current age/age at death (for each case file). The questionnaire also provided estimates of child mortality and the birth section of the questionnaire help derive information on mortality estimates. Information on diseased children was obtained from medical records as secondary data from the Medical Records personnel and Mortuary attendants. Questionnaires were administered by professional project staff. Data analysis was carried out using *SPSS.*

The study site involved two geo-political zones in the North Central & North Eastern (Plateau and Sokoto States respectively). The study location in Jos was the Jos University Teaching Hospital (JUTH) as well as Vom Hospitals. The study location for Sokoto was (Usman Dan Fodio University Teaching Hospital) and a total of 608 questionnaires have been surveyed from the study from Plateau State. Out of this, data from tertiary hospital was estimated 304 while the community based survey was 307. Analysis of the study tool is on-going.
Challenges Encountered: Inadequate funding and delay in release of funds.
Status: On-going.

CORRELATION OF HELICOBACTER PYLORI INFECTION WITH GASTRODUODENAL DISEASES IN NIGERIA IMPROVEMENT OF DIAGNOSIS AND TREATMENT

Haas R, Rieder G, Smith SI, Breithaupt U, Fowora M, Onyekwere CA, Ndububa DA, Lesi OO, Anomneze EE, Omonigbehin EA, Bamidele M., Mbacha M.
Sponsors: *DFG (German Research Foundation, Germany)*

Gastric infections with *H. pylori* are common throughout the tropics and worldwide. *Helicobacter pylori* has been implicated as a major causal agent of chronic type B gastritis and has been implicated as the causative agent of duodenal and most gastric ulcers . It is also a risk factor in the development of gastric malignancies, such as mucosa-associated lymphoid tissue (MALT) lymphoma and adenocarcinoma .

Helicobacter pylori has been shown to harbour many putative virulence factors, which include a set of sheathed polar flagella, production of urease, catalase,

proteases, the vacuolating cytotoxin (VacA) and the *cag*-pathogenicity island (*cag*-PAI). Major interest has been in VacA and the Cytotoxin-associated antigen (CagA), which are the only so far known *H. pylori* proteins that have their targets inside the cytoplasm of the host cell. Only few studies have been performed in western Nigeria on the characterization of the local isolates concerning *vacA* and *cagA* . Infection with *cagA*-positive strains has been found in more than 90% of cases . However, not many data are available concerning the prevalence of *vacA* genotypes and the presence of a complete and functional *cag*-PAI of the isolated *H. pylori* strains from Nigeria. Furthermore, there is still very limited information on the correlation of *H. pylori* virulence factors with the extent and severity of gastroduodenal diseases in Nigeria.

The Objective of this study is to develop faster and reliable methods of diagnosis of *Helicobacter pylori* as well as characterising the virulence of *H. pylori* and its antibiotic susceptibility in Nigeria while correlating it with gastro duodenal diseases.

The study is being carried out within the South-West zone of Nigeria using four public hospitals in Lagos, Ibadan, Ife and a private hospital in Lagos. 1000 samples will be collected from patients who are positive for *H. pylori* using the urea breath test (UBT). Biopsies will be obtained from patients (n = 1000) (after informed consent was signed), presenting with various gastrointestinal disorders. The biopsies will be used to screen for CLO test, culture, PCR (using the *cag*A, *glm*M, *vac*A, 16SrRNA, *dup*A and *Hpy* genes), histology and western blot. Parallel blood will be taken respectively to screen for serology. The isolates would be screened for antibiotic susceptibility testing using antimicrobials which are known for the treatment of *H. pylori*. The antimicrobials are: metronidazole, amoxicillin, tetracycline and clarithromycin by E-test and disk diffusion test. Data would be analyzed by the univariant analysis and Fischer's exact test. Spearman rank coefficient (r) would also be determined to study association between the different characteristics of the strains.

Out of a total of 304 patients and 1824 biopsies, 141 (46.4%) were UBT positive , 92 CLO test positive (31%). All the isolates were resistant to metronidazole. Majority were sensitive to tetracycline, amoxicillin and clarithromycin. The PCR results using the *Helicobacter pylori* gene (*Hpy*) showed that 121 (39.8%) were positive for *H. pylori* out of which culture was positive in 42 (35%). Majority of the isolates were positive for the *cag*A and *glm*M genes (95.2%). Majority of the isolates harboured the *vac*A m1 and s1B allele (90.5%) with none positive for the m2 and s2 alleles. Western blotting analysis showed that the *cag*A protein was expressed in 76.2% of the isolates.

A trend has been observed so far from the study. The study has been able to observe a correlation between UBT and culture. This is due to the fact that the borderline positive biopsies were not left out in the diagnosis of *H. pylori.* Diagnosis of *H. pylori* using *glm*M gene as well as Hpy gene would be most appropriate in our environment. The isolates were positive for the more virulent genes (*cag*A and *vac*A gene) although this was irrespective of the clinical outcome.

Challenges: Constant power outages that has made isolation of *H. pylori* difficult, as well as constant power surges that affected the incubator temperature and evendamaged it. Status**:** Ongoing

PHENOTYPIC EVALUATION OF LACTIC ACIDBACTERIA FROM FERMENTED FOODS AND THEIR INHIBITORY AND CYTOTOXIC PROPERTIES

Niemogha MT, Adesida-Shittu S, Brai BIC, Fesobi T, Akintunde KA, Adagbada AO.

The Lactic acid bacteria, represented by the Lactococci, Streptococci, Lactobacilli, Pediococci and Leuconostoc produce a number of antimicrobial agents including metabolic products such as organic acids, hydrogen peroxide, lLactoperoxidase, diacetyl and bacteriocins. Such products have been found to express antimicrobial and cytotoxic properties. We aimed to determine the effect of metabolites from Lactic acid on bacterial pathogens and tumour cells.

The objective is to determine the effect of metabolites of Lactic acid bacteria on infected cells.

Lactic acid bacteria were isolated from African fermented foods and beverages. They included ogi (fermented maize or sorghum), ugba (fermented seeds of African oil bean), iru (fermented African locust bean), ogiri (fermented melon seeds), tapioca (fermented cassava), fufu (fermented cassava), kenke (fermented maize), oka-baba (fermented guinea corn), burukutu (fermented guinea corn and maize), kunu-zarki (fermented millet), pito (fermented guinea corn and

maize) and palmwine (fermented sap of palm).

They were cultured on De Man Rogosa and Sharpe Agar (MRSA) and incubated by Micro-aerophilic method (candle extinction Jar).

A total of 50 isolates were cultured from ogi, cassava, iru and kenke. Inhibitory assays are yet to be carried out. Funding is a challenge. Status: Ongoing.

MOLECULAR CHARACTERIZATION OF ANAEROBIC PERIODONTAL BACTERIAL PATHOGENS AND THEIR ANTIMICROBIAL SUSCEPTIBILITY TO ANTIBIOTICS

Nwaokorie FO, Ayanbadejo P, Nwokoye NN, Adagbada AO, Adesida SA, Fowora MA, Idika N, Savage KO, Coker AO, Ujah IAO

Gram-negative anaerobes especially *Porphyromonas gingivalis*, *Prevotella intermedia*, *Fusobacterium nucleatum Bacteroides* species and *Tannerella forsythia* are constantly associated with oral infections [1,2,3]. In some countries, empirical treatments of anaerobic infections are complimented with the demands for antimicrobial susceptibility testing due to constant reporting of resistant species[2,3]. There are limited data from African countries and in Nigeria on the susceptibility pattern of anaerobic species to antibiotics commonly used in therapy. It is therefore essential to define periodontal conditions and the pathogens involved, suggest easy and faster identification method for anaerobic studies and suggest proper management protocol and appropriate treatment.

The main objective is to isolate and characterize oral anaerobic bacteria pathogens and determine their antimicrobial susceptibility to antibacterial agents.

All isolates will be identified using standard microbiological techniques for anaerobes as recommended by Summanen *et al.* 1995[4]. Susceptibility to cefoxitin, clindamycin, metronidazole, tetracycline, amoxicillin and clavulanate acid was determined by E-test and agar dilution method and interpreted according to the Clinical Laboratory Standard institute's (CLSI) guidelines. The presence of resistance gene in the isolates resistant to antibiotics was determined by molecular analysis of the DNA.

143 anaerobic samples have been collected from Lagos University Teaching Hospital Idi-Araba. from patients with chronic periodontitis, acute necrotizing gingivitis, localized juvenile periodontitis, dental caries, dental abscess and odonogenic tumour. Isolates obtained so far include pigmented and non-pigmented species and identity of all the species confirmed by PCR. All the isolates were susceptible to amoxicillin/clavulanate, and their activities to amoxicillin and metronidazole have been documented. *Cfx* gene and *blaFUS*-$_1$ gene was detected among the species, 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 detection of corresponding resistance genes in our environment suggests application of caution when therapy is targeted towards pathogenic anaerobic species. **Oxyplate, an aerobic culture plate was found to be** a simple and fast method of anaerobic diagnosis in our environment and is recommended for routine isolation of pathogenic anaerobes in Nigeria.

References

1. Tomazinho LF. Avila-Campos MJ. Detection of *Porphyromonas gingivalis, Porphyromonas endodontalis, Prevotella intermedia and Prevotella nigrescenes* in chronic endodontic infection. *Oral Surg Oral Med Oral Path Oral Radiol Endod.* 2007; 103:285-8.

2. Takenaka, Y., Takeda, K., Yoshii, T., Inohara, H. (2012). Gram staining for the treatment of peritonsillar abscess. *Internat J Otolaryngol*, Article ID 464973, doi:10.1155/2012/464973.

3. Nwaokorie FO, Coker AO, Ogunsola FT, Gaetti-Jardim E Jr., Avila-Campos MJ, Savage KO, AP-PCR and antimicrobial susceptibility patterns of *Fusobacterium nucleatum* associated with chronic periodontitis in Nigerian patients. *British Microbiology Research Journal 2012. 2(2): 97-107.*

4. Summanen, P., Baron, E.J., Citron, D.M., Strong, C., Wexler, H.M., Finegoldm, S.M. (1993). Wadsworth anaerobic bacteriology manual. 5th Ed. Star Pub. Co., 1-229.

Ph. D. RESEARCH WORK

THE ANTIMICROBIAL PROPERTIES OF LACTIC ACID BACTERIA ISOLATED FROM SALAD VEGETABLES

Bamidele TA

The metabolites of lactic acid bacteria (LAB) have been reportedly responsible for their antagonistic activities against varied number of microorganisms and the attempts to use them in the treatment of diseases are still going on either *in vitro* or animal studies. Some LAB generally regarded as safe (GRAS) have been packaged as probiotics to be taken against some target etiologies of infections. These LAB are either isolated from animals or humans and there is paucity of

information on vegetable sources especially salad. This study was therefore designed to evaluate the *in-vitro* antimicrobial potentials of LAB isolated from selected Nigerian grown salad vegetables against *Salmonella enterica* ser *Typhi*, *Vibrio cholerae,* and *Candida albicans*.

The vegetables - Lettuce, Cucumber and Cabbage were obtained from eleven different market locations in Lagos, Nigeria. They were subjected to Microbiological analyses. The LAB were identified by morphological and API 50 CH. The test pathogens were confirmed by a combination of cultural, serological and biochemical tests. The cell free supernatant (100µl) of the LAB strains was used to challenge the test pathogens (0.5 MacFarland) in a Mueller Hinton agar well diffusion assay and incubated at 37°C. All neutralized CFS that showed inhibition against the test pathogens were subjected to Sodium dodecyl Sulphate- Polyacrylamide gel electrophoresis (SDS-PAGE).

Fifty- five (55) isolates of LAB have been isolated from the vegetables out of which thirteen were identified as follows; Lettuce- *Lactobacillus salivarius* (2), *Lactobacillus plantarum* (3), Cucumber- *Pediococcus pentosaceus* (4) and Cabbage- *Lactobacillus cellobiosus* (4).

The LAB isolated from Oke- odo lettuce (*L. salivarius* and *L. plantarum*) exhibited widest zones (14mm, 20mm respectively) of inhibition against *S. enterica* and *V. cholera*. The assay against *C. albicans* produced narrowest zones of inhibition (9mm).

In the study so far, LAB have been isolated from salad vegetables grown in Nigeria and their antimicrobial activities were due to organic acids and non proteinaceous substances.

Challenges: Inadequate funding as study is self-sponsored. Status: ongoing

CONFERENCES / WORKSHOPS

Smith SI: DFG sponsored conference on Partners of German-African grant Bonn, June 26th – June 29th 2012.

Smith SI: Correlation of *Helicobacter pylori* virulence factors with gastro- duodenal diseases: improvement of diagnosis and treatment. Smith SI, Breithaupt U, Fowora M, Onyekwere CA, Ndububa DA, Lesi OO, Anomneze EE, Omonigbehin EA, Bamidele M, Mbacha M, Rieder G and Haas R. Bonn Germany (oral presentation).

Smith SI: Fowora MA, U. Breithaupt, J. A. Otegbayo, A. Akere, C. A. Onyekwere, D. Ndububa, F. B. Abdulkareem, O. A. Lesi, E. Omonigbehin, B. Moses, E. Anomneze, M. Mbacha, M. Duguru, E. Okeke, A. Malu, S. Mueller, R. Haas, Molecular characterization of *Helicobacter pylori* infections in Nigeria. Poster presentation, XXV International Workshop of the *Helicobacter* Study Group, Slovenia, Sept, 11 – 13, 2012.

Smith SI (2012). Emergency Preparedness and Response Research Group. 3rd International Scientific Conference of the Nigerian Institute of Medical Research, Yaba. 7th November 2012 (oral presentation).

Smith SI (2012). Guest Speaker on 'Laboratory diagnosis of *Helicobacter pylori* in Nigeria' to mark the Golden Jubilee celebration of University of Lagos. Venue was at the Faculty of Science Board Room on the 16th of November 2012 (oral presentation).

Brai BIC: 42nd Annual Scientific Conference of Nutrition Society of Nigeria 18th – 22nd September, 2012, Asaba, Delta State.

Brai BIC: Mother and community recognition and care of low birth weight infants. Nutrition Congress Africa/ANECV 30 September - 4 October, 2012, Bloemfontein, South Africa (oral presentation).

Brai BIC: Consortium meeting of the ENAROMaTIC Project, 18-20th OCT. 2012, Athens.

Nwaokorie FO: 2012 International Conference on Emerging Infectious Diseases (ICEID). Hyatt Regency Atlanta, in Atlanta Georgia USA, March 11-14th, 2012.

Nwaokorie FO: "Detection of *Fusobacterium nucleatum* subspecies in patients with Oro-Facial Infections In Lagos, Nigeria". (Oral Presentation)

Nwaokorie FO: Endocrine Disrupting Chemicals; A Risks to Human Health. Africa Conference On Infectious Diseases, Emergency Risks And Travel Medicine (ACIDER-TM 2012) 11th-13th April, 2012 The Mall, Aladinma, Owerri, Imo State, Nigeria. (Oral Presentation)

Nwaokorie FO: Human Heriditory and health. H3Africa Ethical, Legal and Societal Issues Program. The Holiday Inn Accra, Accra, Ghana. May 29, 2012.

Nwaokorie FO: Susceptibility Pattern Of *Prevotella* And *Porphyromonas* Species From Patients With Odontogenic Infections In Lagos University Teaching Hospital To Amoxicillin Golden Jubilee Research Conference & Fair 2012, Multipurpose hall. University of Lagos, Nov 6th -8th 2012 (oral presentation).

Nwaokorie FO: Antibacterial Susceptibility Pattern and Detection of Beta-Lactamase Resistance Genes in Anaerobes Isolated from Oral and Wound Infections. 3ND International Scientific Conference, Nigerian Institute of Medical Research Yaba Lagos. Main Auditorium NIMR Nov 5th -8th 2012. **(**Oral Presentation)

TRAINING

Smith SI, Oyedeji KS, Bamidele TA. Emergency

IT STUDENTS AND PROJECT STUDENTS

The Division had 7 (seven) IT students and 34 (thirty-four) project students for laboratory experience with various topics.

S/N	NAMES	TOPICS	PROG	REMARKS
1	Dr. Sarah T. Ibiyemi	Orofacial bacterial infections pattern, microbiology, management and outcome in UCH. Ibadan	M.Sc.	Completed
2	Eruteya Ononode Christian	Molecular Characterization of *Listeria monocytogenes*	Ph.D.	Completed
3	Mr. Adebowale Adeluola Mr. Odewale	*Evaluation of antibiotic resistance genes in pathogenic*	M.Sc.	On-going
4	Abioye Adefunke A.	Molecular characterization of *Staphylococcus aureus*	M.Sc.	Completed
5	Nafiu Radinat Modupe	Isolation and direct detection of *Cronobacter sakazakii* from suya meat and its species	B.Sc.	Completed
6	Badmus Hakeem Adeoye	Isolation and direct detection of *Cronobacter sakazakii* from commercially made spices	B.Sc.	Completed
7	Okubadejo Ayodeji Michael	Antimicrobial activity of plant extracts on enterohaemorrhagic *E. coli*	B.Sc.	Completed
8	Tijani Hawanot Olaitan	Antimicrobial Susceptibility and Plasmid Profile of Bacteria Isolated from Indoor Air of public restrooms in Lagos	B.Sc.	Completed
9	Adewunmi Oluwatosin	Antibiotic susceptibility and Plasmid profile of bacteria isolated from air at the Abattoir	B.Sc.	Completed
10	Ojo James Olaoluwa	Antibiotic susceptibility & plasmid profile analysis of pathogenic bacteria isolated from toilet environmental surfaces in a public toilet at Oshodi, Lagos.	B.Sc.	Completed
11	Okudare Samson Abayomi	Microbial Susceptibility Testing and Plasmid Profile Analysis of Bacteria Isolated From Public Toilet Water In Lagos	B.Sc.	Completed
12	Orie Ogochukwu Esther	Detection of resistance genetic markers in anaerobic species	M.Sc.	Completed
13	Kafisewon Esther	Antimicrobial activities of plant extract on *Pseudomonas aeruginosa*	B.Sc.	Completed
14	Akindejoye Omotola	Antibiotic susceptibility and molecular study of *E. coli* strain from infants and cattle in Lagos	M.Sc.	Completed
15	Fehintola Anifat Oyenike	The Antimicrobial Activities of Certain Herbs on Clinical Isolates of *Klebsiella pneumoniae*	B.Sc.	Completed
16	Adesanya Hafeez O.	Bacteriological assessment of abbatoir environment	B.Sc.	Completed
17	Adebogun Omowale Taiwo	Antimicrobial susceptibility testing and plasmid profile analysis of pathogenic bacteria isolated from raw beef.	B.Sc.	Completed
18	Ageyanju Yetunde B.	Antibiotic susceptibility and plasmid profile analysis of bacteria isolated from tables in abattoir	B.Sc.	Completed
19	Adewale Azeezat Yeside	Antimicrobial susceptibility and plasmid profile of bacteria isolated from raw chicken	B.Sc.	Completed
20	Edeh Ebele B.	Paediatric pneumonia in University of Calabar Teaching Hospital	M.Sc.	Completed

IT STUDENTS AND PROJECT STUDENTS CONT.

S/N	NAMES	TOPICS	PROG	REMARKS
21	Wenanbu Ifeoma Irene	Plasmid analysis and antibiotic susceptibility pattern of Pseudomonas spp in Lagos University Teaching Hospital	M.Sc.	Completed
22	Ukaegbu Michael	A study on genetic non syndromic sensorineural hearing loss in Lagos State, Nigeria.	PhD	Ongoing
23	Mairiga Jamey Peter	Phenotypic and genotypic study of isoniazid acetylation in TB/HIV co-infected patients in Nasarawa state.	Ph.D.	Ongoing
24	Ekwuabu Chioma Bertha	Microbial ecology of hydrocarbon polluted sites in Niger-Delta	M.Sc.	Ongoing
25	Yinusa Segun	Detection of β-lactamase gene in *Bacteriodes* species and its resistance to amoxicillin	M.Sc.	Completed
26	Ogrima Amina	Detection of β-lactamase gene in *Prevotella* species and its resistance to amoxicillin	M.Sc.	Completed
27	Oriaku Victoria Adanna	Anaerobic degradation of PCB contaminated sites with indigenous microorganism	Ph.D.	Completed
28	Dr. Priscilla O. Ameh	Comparison of two treatment modalities of chronic periodontitis in LUTH. A randomized clinical study.	FWCM	Completed
29	Nathaniel Onyenwe	The molecular study of multi drug resistant *Salmonella* Enterica Serovar Typhi in Southeast Nigeria	Ph.D.	Completed
30	Fehintola Anifat	The Antimicrobial Activities of Certain Herbs on Clinical Isolates of *Klebsiella pneumoniae*	B.Sc	Completed
31	Adeyanju Adeyinka Notisat	Antibiotic susceptibility and plasmid profile of bacteria isolated from wastewater used in the abattoir.-	B. Sc	Completed.
32	Ihekire Venantius	Molecular typing of *Salmonella Typhimurium* isolated from raw beef and chicken meat.	M.Sc	Completed
33	Mrs. Abimbola Ezeh	Phenotypic and genomic characterization of *Cronobacter sakasakii* isolated from powdered infant formula milk in Nigeria. student	PhD	Ongoing
34	Agboro Daniel	Molecular identification of *Salmonella* species from water collected from Bariga	B.Sc.	Completed
	I. T. STUDENTS			
1	Ibojo Olaseike		I.T.	Completed
2	Bakare Yetunde A.		I.T.	Completed
3	Innocent Chioma		I.T.	Completed
4	Babafemi O. Oluyisola		I.T.	Completed
5	Adedokun Adedamola		I.T.	Completed
6	Oluyisola Babfemi		I.T.	Completed
7	Nwachukwu Oluchi G.		I.T.	Ongoing

Dr. Samson Awolola
Chief Research Fellow / HOD

PUBLIC HEALTH DIVISION

PUBLIC HEALTH TEAM

Dr. (Mrs) M. A. Mafe	Director of Research
Dr. (Mrs) O. P. Akinwale	Deputy Director Research
DR. T. S. Awolola	Chief Research Fellow& HOD
Dr. B. Adewale	Chief Research Fellow
Mr. M. B. Ajayi	Chief Med.Lab. Scientist
Dr. (Mrs.) M. A. Sulyman	Research Fellow I
Mr. D. O. Akande	Principal Lab. Scientist
Mr. A. K. Adeneye	Research Fellow II
Dr. A. O. Oduola	Research Fellow II
Mrs. J. B. Olojede	Research Fellow II
Mr. P. V. Gyang	Junior Research Fellow
Mrs. A.Angelina Dike	Lab. Technician

Staff of the Public Health Division includes nine Research Fellows and five supporting staff including administration staff. Research work in the Division focus on neglected tropical diseases, non-communicable diseases, malaria and health system strengthening. The 2012 activities commenced in January with a collaborative work funded by Vestergaard Frandseen. Essential research activities were supported by the Federal Ministry of Health and donor agencies mainly at the Institute headquarter in Lagos and to a lesser extent with staff at the outstations in kanji and Maiduguri.

Student Training and technical support:

A total of 16 students from five Nigerian Universities (Bowen university Iwo; University of Lagos, Joseph Ayo Babalola University, the University of Benin and University of Ilorin were on 3-6 months industrial attachment in the Division. Two M.Sc. students from the University of Lagos carried out their project work in the Division. In addition, the Division also provided three months Molecular Entomology training to Mr. Abba Joseph from the University of Jos.

Two staff in the Division provided technical support to the National Malaria Control Program during the Malaria Program Review activities in September.

Conference attended and Papers Presented:

Dr. T. S. Awolola:
Efficacy of three odor blends on mosquito behavior under natural condition.
Presented at the 4th ENAROMATIC conference 17 -18th October 2012, Athens, Greece.

Dr. O. P. Akinwale:
Delivered a lecture titled "Schistosomiasis Research in Nigeria: A Molecular Approach" Universiti Sains Malaysia, Penang, Malaysia.

Research Grants/ Award:**Dr. T. S. Awolola**:
(i) Awarded a research grant by Vestergaard Frandsen, Switzerland for study on: Field Evaluation of long lasting insecticidal nets (January 2012 – May 2013).

(ii) Awarded a research grant by Syngenta Cooporation SA for Field assessment of residual Efficacy of Actellic CS, a nove insecticide for resistance management (March – Dec, 2012).**Dr. O.**

P. Akinwale:
Awarded a 3-month TWAS/USM Visiting Researcher's Fellowship to the Universiti Sains Malaysia, Penang, Malaysia.

Staff movement:
(I)Dr. O.P. Akinwale was on a three-month research visit to the Universiti Sains Malaysia, Penang, Malaysia from September – December 2012

(ii) Dr. Adewale resume back in the Department in August 2012 after a 12 month sabbatical leave at the Bowen University, Iwo.

(iii) Mr. Pam Gyang is on the second year of a three-year study leave at the Tapei Medical University, Taiwan.

Dr. Adedayo Oduola resigned and left the Division in September to take a lecturership appointment at the University of Ilorin.

INSTITUTIONAL REVIEW BOARD (IRB)

MEMBERS

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Mrs. A. Z. Musa	Member
Mrs. O. A. Nwogbe	Member /Administrative Secretary
Mr. A. K. Adeneye	Member/ Asst. Administrative Secretary

NIMR-IRB's Composition

- 17 Full members including the chairman and Administrative secretary
- 2 Affiliated members
- 15 Scientists: Virologist , Biochemist, molecular biologist, Parasitologists, Paediatrian, Obstetricians and Gynecologists Community/Public Health professionals, Bio-statistician,Microbiologist, Sociologist, Librarian, Information Scientist,
- 2 non-scientists (a Lawyer and a Journalist)
- The Board meets bi- monthly
- Funding is mainly from NIMR

PROPOSALS RECEIVED IN 2013 TRAINING

Number of Proposals received: 38
Number of Proposal not approved: 32
Number of Proposals not approved : 6

TRAINING

The Nigerian Institute of Medical Research - Institutional Review Board held a two day training for its newly constituted Committee Members on Operationalizing IRB and Research Monitoring. The objective of the training was to:

- Familiarise members with the responsibilities of the Ethics Review Committee
- Build capacity for constructive protocol review
- Monitoring of research study

LIST OF CLIENT INSTITUTIONS

1. Federal Ministry of Health
2. State Ministries of Health
3. AIDS Prevention Initiative in Nigeria (APIN)
4. Population Council
5. Society for Family Health
6. ABT. Associates Inc.
7. Family Health International
8. Positive Action for Treatment Access
9. National Veterinary Research Inst. (NVRI)
10. The Initiatives for Equal Rights
11. Market Audits & Research Services Ltd.
12. C-Change/Nigeria, Academy for Educational Development (AED)
13. Institute National D'Analyse De Communication Et Des Ensembles Sociaux (Abidjan-Lagos Corridor Organization)
14. Students from various Universities in Nigeria and outside the country

CAPACITY BUILDING AND SUPPORT FOR THREE ETHICS REVIEW COMMITTEES IN NORTH CENTRAL AND SOUTH WEXTERN GEOPOLITICAL ZONES OF NIGERIA

Oyedeji KS, Ukpong M, Ezechi O, Abolarinwa T, Johnson D

Ethics review of research proposal should precede the actual research process as stated in the Helsinki guidelines. Therefore, ethics review committees (ERCs) should be constituted and perform according to four principles for ethical review, namely Independence, competence, pluralism and transparency according to the WHO's guidelines for ethics review committees. Such committees should also monitor the approved research, although worldwide there are constraints regarding time and human resources to undertake this monitoring.

Furthermore, Ethics review committees must have basic resources to enable their optimal function so as to be free of any undue influence. They must be able to develop appropriate own written Standard Operating Procedures (SOPs) as guidelines for quality decision making. Hence, it is imperative to continue to develop an integrated approach to information gathering and sharing, as well as capacity building for ethical review process and practice across the African continent. This is in an attempt to address the fundamental ethical gaps and challenges encountered in global health research due to inadequate training and infrastructures required for optimal functions of these ethics review committees.

It is in view of the above that this project attempts to address the gaps by setting out to achieve the objectives:

1. To organize a training workshop for ERC members of University of Ilorin Teaching Hospital, Ladoke Akintola University of Technology Teaching Hospital and Olabisi Onabanjo University Teaching Hospitals on protocol review and providing constructive feedbacks, research monitoring and the use of PRO-IRB software.

2. To support institutional capacity building for these three ERCs through the purchase and installation of basic computer hard and soft wares.

3.To provide a platform for networking, collaboration and promote discussion on contemporary issues and dilemmas of health research ethics among these ERCs and other local and national ethics committees through communication via internet based fora.

▪ Group photograph of Participants at the University of Ilorin Teaching Hospital HREC training

CAPACITY BUILDING TRAINING ON PROTOCOL REVIEW

The Nigerian Institute of Medical Research (NIMR) organized five day training for members of three health research ethics committee in Nigeria on how to review protocol and provide constructive feedback with funding support from the EDCTP under the project titled: “Capacity Building and Support for Three Ethics Review Committees in North Central and South Western Geopolitical Zones of Nigeria.” The training programme was designed for three ethics review committee in North Central and South Western geopolitical zones of the country. The beneficiary institutions were University of Ilorin Teaching Hospital (UITH), Ilorin, Ladoke Akintola University of Technology Teaching hospital (LAUTECHTH), Oshogbo and Olabisi Onabanjo University Teaching Hospital (OOUTH), Shagamu. The programme was held in UITH, LAUTECHTH and OOUTH between the 18th and 22nd of July 2011, 5th and 9th September 2011 and 1st to 5th December 2011 respectively, in collaboration with the institutions ethics review committees and the hospital management.

The five days training workshop strengthened the capacity of the members of the ethics review committee on how to review protocol and provide constructive feedback, it also provided infrastructural support for improved performance of the ERCs on protocol review process. The ERCs secretariats were strengthened with the supply of computer hard and software comprising of laser jet printer, coloured printer, scanners, and central processing unit, monitor, uninterrupted power supply equipment and the installation of internet facility to promote e-learning as well as

collaborations and consultations with other ERCs on the network.

The workshops were conducted using a participatory approach through the engagement of participants in plenary sessions, slide presentations, brainstorming, group discussions, case studies, and the question and answer sessions. The workshop provided a platform for the participants and the resource persons to share experience on the field and also work towards getting the three ERCs (UITH, LAUTECHTH and OOUTH) and NIMR ERC on the same page.

The workshop sessions built the knowledge and skills of the participants on various ethical issues, some of these were informed consent, basic research and clinical trials, the protocol review process and providing constructive feedbacks, good clinical practices and community engagement in research among others. The group interactions and practical sessions provided opportunity for participants to share experiences and also translate theory into practice. The programme also provided state of the art training on the use of PRO-IRB computer software for record keeping and documentation of the protocol review process in the respective ERCs secretariat.

A total of 96 participants were trained at the three centres with the segregation as shown in the table below:

Health Research Ethics committee	Number of males trained	Number of females trained	Total
University of Ilorin Teaching Hospital	24	6	30
Ladoke Akintola University of Technology Teaching Hospital	23	4	27
Olabisi Onabanjo University Teaching Hospital	27	12	39
Total	74	22	96

Participants at the Ladoke Akintola University Teaching Hospital HREC

Participants at the Olabisi Onabanjo University Teaching Hospital HREC training

The evaluation of the workshop showed that participants' knowledge of research ethics and ethics review process improved significantly as shown in UITH, LAUTECHTH and OOUTH respectively, (pre-test=46.8%, post test=73.4%, Pvalue=0.0009),(pre-test=56.9%, post-test=69.0% Pvalue=0.0001), (pre-test=56.6% post test= 66.9%, Pvalue =0.0001).

Conclusion:

The project was designed to build on the past efforts in increasing competency of ERCs in the country. These include past support by EDCTP for training of laypersons on protocol review (2010), and support for IRB establishments (2006), SIDACTION funding for training of ERCs on protocol review (2008) and research monitoring (2009), CC-AVAC support on training on community engagement (2010) and AMANET support for training of members of ERCs on the basics of ethical research conduct (2007). In a post evaluation by members of ERCs who were beneficiaries of one of the EDCTP funded trainings, one of the gaps identified was the need for institutional capacities building to enable ERCs perform better and optimally. Hence, this project was conceived to address the key issues raised mainly by the members of the three ERCs selected for this project. It is opined that aftermath of the project will produce strengthened ERCs armed with required criteria to review clinical trial protocols and in some cases the highly technical ones such as HIV vaccine trials. However, the main crux of the project is to provide training and infrastructural support for the selected three ERCs in Nigeria, which was achieved within the set timelines.

Almost all the participants (100%) admitted that the workshop addressed the set objectives. Also the programme logistics and facilitators were rated high by the participant. There was also a general recommendation that the programme should be extended to the community representatives, resident doctors and the nursing services in the hospitals.

It is imperative that the NIMR ERC would continue to mentor the three trained ERCs and provide a platform for networking among them for collaborations and promote discussion on contemporary issues and dilemmas of health research ethics in Nigeria. The trainees will also be followed up on the use of knowledge and skills gained from the workshops

Dr. (Mrs) A. Z. Musa
Head of Unit

MONITORING & EVALUATION UNIT

The Monitoring and Evaluation unit is saddles with the responsibilities such as; development and implementation of guidelines for improve research project/program development, implementation, systematic evaluation and reporting across the Institute. The Unit is also to provide information components/ guidelines for progress reports and impact-oriented institutional management. To also liaise with research project/program focal persons to provide reports on project/program stakeholders and various reporting structures at institutional, state and federal levels.

Staff of the Unit

Mrs. A.Z. Musa	Research Fellow/Biostatistician
Mrs. A.M. Adedeji	Principal Statistical Officer

MONITORING AND EVALUATION ACTIVITIES

In an attempt to develop and achieve the monitoring and evaluation (M&E) model that will provide adequate information for Key Performance Indicator tools for "Research for Health (Priority 8) in the NHSDP", we designed a framework to capture all activities and services of the institute. So far, One division and 2 units (Public Health division, Human Virology Laboratory (HVL), DOTS Clinic) were piloted with the tools developed

- Human Virology Laboratory, 2011 to June 2012 M&E assessment. Completed
- DOTS clinic, 2011 to June 2012 situation analysis. Ongoing
- Public Health Division, 2011 to June 2012 situation analysis. Ongoing

Summary of findings on – Human Virology Laboratory

HVL Mandate:
To be the foremost laboratory in Nigeria with adequate capacity for excellent diagnostic and monitoring services for STDs including HIV/AIDs as well as other pathological conditions and physiological disorders". Over the years the laboratory has been striving to meet up with this mandate. HVL is involved both in research and community diagnostics.

The M&E main objective is to measure progress with HVLs' objectives and NIMR's mandate

A review of the activities of HVL from January 2011-June 2012, the activities that generated this Monitoring report involved routine data collection for a period of 18 months. Data was collected by; Key Informant Interview with the Head of Unit, Interview with the M&E Focal Person & some Research Fellows, Interviews with Administration Officer , Store Keeper & Accountant, Informal discussions with Laboratory Technologists and On-Site Visits to achieve direct observations at service delivery points.

Key findings:

Research: A total of 31 research projects have been undertaken in the unit during the review period (24 are still on-going, 5 that were carried over from previous year had been completed and 2 new projects were initiated).

Capacity building: 8 workshops, 4 conferences and 24 seminars were attended by members of staff in the unit, 3 were outside the country (Rome, Senegal and Addis Ababa).

Dissemination: 4 publications were made in peer review journals during the review period.

Policy: One of the completed projects was packaged to the FMOH as a policy brief.

Challenges faced during collation of report:
An appreciable length of time was expended on gathering data which was due to the following reasons;
(I) The data collection tools used required data which were pooled from different official files as well as submissions of certain information from individual staff that were not documented.
(ii) HVL M&E Focal Person has a very tight official I schedule and also majority of members of Staff are not yet aware of the basic importance of M and E.

Recommendations

There is need to create awareness among members of staff on importance of M and E

· Members of Staff should be encouraged to submit progress reports of on-going research activities and trainings attended.

Research Projects Supported and Ongoing

a. Health Systems Research group on the study on "Situation Analyses of Research in the Nigerian Health System with focus on Ministries of Health, Federal Medical Centres and LGAs in some selected states in Nigeria". Completed

b.Intervention study on Non-Communicable Diseases and preventable lifestyle risk factors in three Urban Slums of Lagos State Nigeria. Completed

c.Emergency Preparedness group- Internally Displaced Persons Assessment Study. Ongoing

d. A survey on Personal History (Reproductive practice amongst Secondary School Students in Plateau State). Completed

e.Hepatitis C and Human Immunodeficiency Viruses Co-Infection in Patients in NIMR Lagos State. Ongoing

f. Mid-term review of Lagos State Strategic Plan on HIV and AID 2010-2012. Completed

g. Survival pattern of HIV and AIDs adult patients on Antiretroviral drugs in Lagos, Nigeria Ongoing

TRAINING

Internal: (Facilitated)

a. Facilitated in the consolidated GFATM round 9 training workshops on comprehensive HIV/AIDS treatment and care for secondary level health facilities organized by FMOH. 19th January – 3rd February 2012

b. A training organized by ASURI - NIMR on the Application of Basic Statistics and the use of three statistical packages; SPSS, Epi-Info and Microsoft Excel. –Oct 2012

External: (attended)

a. **Mrs. AZ Musa**. International workshop on monitoring and evaluation of Public health programs 19 – 30 March, 2012

b. **Mrs. B. Adedeji** Practical Biostatistics Course 18-22 June, 2012

Paper presented at conference

Musa AZ. First line antiretroviral treatment failure and associated risk factors among adult Nigerian living with HIV/AIDS- 4th Annual Scientific conference, NIMR Lagos November 2012

Performance Indicators

As part of Mr. President's agenda to improve the performance of the public sector, he institutionalized a regime of performance monitoring as a transparency and accountability mechanism for the Government. To this end, all sectors were expected to develop a scorecard containing smart indicators with which its performance could be measured. In addition, the Honourable Ministers were expected to prioritise from this scorecard, a set of overarching performance targets which Mr. President will use to hold them accountable.

NIMR as a parastatal under the ministry of Health was directed to come up with her own indicators (Table 1). This was finalised with the permanent secretary for Health and a performance agreement contract was signed by the Dg of NIMR alongside with other Directors and Heads of Agencies with the Honourable Minister for Health in December.

In addition the Evaluation performance analysis would be based on the following;

1. Achievements during the past Financial Year Achievements refer to any major policies, programs and projects of the Institution
2. **Planned Initiatives,** the key initiatives planned by the Institution for the preceding Financial Year.
3. **Risk Factors,** the future risks anticipated by the institution in the preceding Financial Year.

Hence our performance would be measured by the following indicators yearly.

Table 1 Key performance indicator to represent research for health (priority 8 in the National Health Strategic development plan (NHSDP))
Outcome 1: Improved quality of health care

S/N	Indicator	Activity	Timeline
1	Number of health personnel trained/retrained to improve healthcare delivery	Training of Health personnel to improve health care delivery using various National guidelines	Yearly
2	Number of health Institutions supported to improved quality of health	Mentoring of health Institutions to improve the quality of service delivery	Yearly

Outcome 2: increased access to health care

S/N	Indicator	Activity	Timeline
1	Cumulative number of clients enrolled into HIV programme disaggregated by age	Provision of accessible Comprehensive HIV Care, treatment and support	Yearly
2	Cumulative number of clients provided TB services	Provision of accessible Comprehensive TB services using National guideline	Yearly
3	Cumulative number of pregnant women reached with PMTCT services	Provision of accessible Comprehensive PMTCT Services using National guideline	Yearly

Outcome 3: Increased Health and Economic benefits through Research and Improved Utilization of Health Research Results for National development

S/N	Indicator	Activity	Timeline
1	Number of health research projects providing answers to urgent national health issues/MDGs	Execution of health research projects that will provide solutions to urgent National health issues/MDGs	Yearly
2	Number of health research findings disseminated locally and internationally	Dissemination of health research findings through publications in peer review journals and conferences	Yearly
3	Number of health research findings communicated to FMoH to influence policy	Development of policy briefs based on research findings	Yearly

This tool was also piloted on HVL for the year 2011 and the findings were (table 2); Table 2 HVL Key performance indicator to represent research for health (priority 8) in the NHSDP- Year 2011

Outcome 1: Improved quality of health care

S/N	Indicator	Activity	Timeline	Result
1	Number of health personnel trained/retrained to improve healthcare delivery	Training of Health personnel to improve health care delivery using the National guidelines	Yearly	11
2	Number of health Institutions supported to improved quality of health	Mentoring of health Institutions to improve the quality of service delivery using external quality assurance	Yearly	11

Outcome 2: Increased access to health care

S/N	Indicator	Activity	Timeline	Result
1	Cumulative number of clients enrolled into HIV/AIDS programme disaggregated by age and gender	Provision of accessible comprehensive HIV Care, treatment and support using the national guidelines	Yearly	N/A
2	Cumulative number of clients provided TB services	Provision of accessible comprehensive TB services through laboratory diagnosis including MDR-TB and DOTS	Yearly	N/A
3	Cumulative number of pregnant women who access PMTCT services	Provision of comprehensive PMTCT Services using the National PMTCT guideline	Yearly	N/A

Outcome 3: Increased Health and Economic benefits through Research and Improved Utilization of Health Research Results for National development

S/N	Indicator	Activity	Timeline	Result
1	Number of health research projects contributing to national health priorities including the heath related MDGs	Conduct of research studies that responds to National Health priorities including health related-MDGs	Yearly	1
2	Number of health research findings disseminated locally and internationally	1.Dissemination of health research findings on health related MDGs through publications in peer review journals 2. Presentation of research papers at both National and International conferences	Yearly	5 3
3	Number of health research findings communicated to FMoH to inform policy	Development of policy briefs based on research findings	Yearly	1

Mr. S. T. Abolarenwa
Deputy Director /HOU

LIBRARY & DOCUMENTATION UNIT

The Year 2012 was a singular one in the life of NIMR Library, the year played out against a backdrop of new directions for the Institute by the Board of Governor and the Director General of the Institute who realised that research library is an essential asset of a research institute, hence the Board approved the construction of a multi million naira E library building for the Institute to replace the present room to room reading arrangement in the administration building. The foundation of the library building was laid during the year and before the year ended the construction work had reached the third floor. At the rate the construction work is going the building may be ready for commissioning before the end of year 2013.

Also the Board and the Director General realising the need to keep pace with a global, dynamic, information technology environment, decided to source for a more robust and efficient internet connection through a reliable Internet Service provider that now provides both cable and wireless internet connection for the institute. The internet connection is now extended to the staff quarters via the wireless connection. With this commitment and enthusiasm of the management the library hopes to take advantage of the complex emerging digital environment to shape the library collections and services in the future.

However, The Library traditional functions of selection, acquisition, cataloguing and classification were performed during the year while the library automation still relies largely on the use of Micro CDS-ISIS software although there is a gradual transfer of the data a into customized library software (xlib).

COLLECTION DEVELOPMENT

There is no significant development in the library collection except for few local journals that were subscribed to while the international journals acquired were donation from friends of the library. Likewise books acquired were very few and they were all donated to the library.

The library subscribes to two National Dailies, The Punch and the Guardian newspaper. Articles, reports and captions that focussed on the institute were scanned and stored for use. Likewise research findings that were published in these dailies were scanned and stored for users. Apart from scanning these materials, photocopies were made and filed so that users could have access to the hard copies.

To enhance the current awareness services of the library, bibliographies on topical subject headings like Aids, Malaria, Cancer and Tuberculosis in Nigeria were updated and new subject areas were included. Also to keep the researchers in the institute abreast of developments in their fields, library users profile forms were sent to the researchers through their email addresses to enable the library provide them with information relevant to their research interests.
There is also a collection of CD-ROMs in the library containing relevant databases for users' consultation. These CD-ROMs can be accessed using computer PC or CD player with the television screen in the library. Among the available CD-ROMs in the library are the MEDLINE CD-ROMs 1966 to 2009. They are the most widely consulted databases in the library particularly by students of higher institutions that make use of the library. Being an offline version of Pubmed they can be accessed with or without the internet. The library is intends to update the MEDLINE CD-ROM collection and make it more current.

The Library registration with HINARI database provides access to full articles of some of the abstracts sourced from Medline and Pub med databases. In cases where the full articles are not available free on HINARI database the articles are sourced directly from the author or through interlibrary loan when they are willing to release them. Hopefully when the library increases its journal subscription to both print and electronic format these problem will be alleviated.

SERVICES

Apart from the traditional library services provided, other services include the following.

1. Provision of multimedia support services for meetings, seminars, trainings, workshops, conferences organised in the institute.

2. Electronic literature Searches for users. The most frequently consulted databases among the available online and offline databases were Pub med, Medline and Hinari.
3. Computer appreciation support to staff of the Institute Hardware and software troubleshooting.
4. Maintenance of the Institute Internet and Network Infrastructures jointly done with the Institute Internet Service Provider (ISP) to provide back-end troubleshooting and repairs
5. Database management of Clinic data and monthly reporting to Federal Government of Nigeria (APIN PROJECT)

6. Desktop publishing such as design of flyers, Handbills, posters, booklets, handbooks, Annual reports, newsletters and other publications.
7. Computer maintenance activities through installation of firewalls, antivirus software, filtering and content control tools
8. Monitor and control of electronic computing security environment through Internet and network access control and data protection.
9. Management of institute's website

LIST OF WORLD HEALTH ORGANISATION (WHO)' BOOKS RECEIVED IN

S/N	AUTHOR	TITLES
1	WHO 2012	Evaluation of certain Veterinary drug residues in Food
2	WHO	Family Planning: A global Handbook for Providers
3	WHO 2012	WHO Expert Committee on Leprosy
4	WHO 2011	Global Tuberculosis Control: WHO report 2011
5	WHO 2007	Global Surveillance, Prevention and Control of Chronic Respiratory Disease: A comprehensive approach.

LIST OF OTHER BOOKS RECIEVED IN 2012

S/N	AUTHOR	TITLE
1	UNAIDS	AIDS at 30 Nations the cross roads
2	NHUMAS	A Pocket handbook on ethics for researchers and members of Health Research Ethic Committees
3	NOA on Nigeria Core Value 2009	A Survey of Nigeria Core Values,
4	C.C. Okain & E.N Danland 2009	Basic Civic Education for Junior secondary Schools: Universal Basic Education Edition Bk. 1
5	C.C. Okain & E.N Danland 2009	Basic Civic Education for Primary School Book 1
6	Nat. Tect. Comm. Civil Education	Civil Education in Nigeria: A Sources Book Sept. 2006
7	NIMR 2005	Directory for Stakeholders on HIV/AIDs in Nigeria Compiled by E.O Idigbe. N. Idika etc
8	By Harvard University	Guide to regulatory affairs APIN PLUS/Harvard Pepfar
9	NIIVMHS	How to review a protocol and provide constructive feedback: A lay Person Training Manual
10	Olubunmi Adetoro	Elements of Parasitology
11	NOA 2001	A Case for National Rebirth
12	NACA	National Agency for the control of AIDS.
13	Fed. Report of Nig. 2004	National Bureau of Statistics: Nigeria foreign Trade Summary. Jan – Dec 2005
14	NIMR 2005	Nigerian Contribution to regional and Global meetings on HIV/AIDS/Statistics 1986-2005, by E.O Idigbe T.O Harry, J.A Idoko and others
15	NIMR 2011-2015	Nigerian Institute of Medical Research: A strategic plan (2011-2015)
16	NIMR.2010	Nigerian Institute of Medical Research(FMOH) Accounting Manual
17	NOA	National Orientation Agencies: Raising Integrity Standard in the Public Service
18	Universal Bristol. 2012	Postgraduate Prospectus 2012: Faculty of Engineering
19	Universal Bristol. 2012	Postgraduate Prospectus 2012: Faculty of social Science
20	Universal Bristol. 2012	Postgraduate Prospectus: Introduction
21	Fed. Rep. Nig. 2010	Report on data collection and synthesis for National Malaria Control Programme (Operation Research)
22	USAID 2010	Report on the status of the Nigerian National HIV Monitoring and Evaluation System: Assessment using 12 component system strengthen
23	NIMR	Training Manual for Nurses on the use of Antiretroviral Drugs on Nigeria (First Edition)

LIST OF PERIODICALS RECEIVED IN 2012

S/N	TITLE	Vol.	Nos.	Months	Years
1	ACTU News Letter	3	1		2011
2	AIDS	21	SUPPLY	JAN	
3	Africa Health	34	3	SEPT	2012
4	Africa Health Nigeria	32,34	3,6,	Mar/Sept	2012
5	Annals of Saudi Medicine	31,32	36,1 & 5	May/Jun, Jan, May/Sept	2011 2012
6	China Africa	3&4	Oct/Dec		2011
7	Evaluation of certain food additives and Contaminations (TRS)				
8	Federal Character Monitor			3rd quarter	2011
9	Health Reform form Nig			Mar/April	2012
10	Health Reform Newsletter			" "	" "
11	Iranian Journal of Medicine Science	36	2	June	2012
12	Journal of the Brazilian society of tropical medicine	441	Nov/Dec	6	2012
13	Journal of Hos. Medicine	22	3	July/Sept	
14	Management in Nigeria	47	2	Dec	2011
15	MediNews			June/Sept	2011
16	Nigerian Hospital Practice	9	1-2	Jan/Feb	2012
17	Nigerian Medical Practice	61	3-4	Mar/April	2012
18	Nigerian Journal of Clinical and Biochemical Research	5	1	Oct	-
19	Nigeria Journal of Gastroenterology and Hepatology.	3	1&2	June/Dec	2011
20	Nigeria Quarterly Journal of Medicine	22	2/3	April-June July-Sept	2012
21	NIMR Newsletter	3	1	Jan	2012
22	I J M S	37	1	March	2012
23	Nutrition Research Reviews	24	2	Dec	2011
24	Pharmanews	32,33	07,12	Jan-July	2010
25	Public Health Nutrition	14,15			
26	Proceedings of the Nutrition Society	70,71	4,1,3,4	Fed, Aug/Nov	2012
27	The Medical Laboratory Scientist	29	45	Jan/Mar	2011
28	The Nigerian Medical Practitioner	60,61,62	1-2, 3-6, 1-2,3 5-6	July/Aug Sept/Dec Jan/Feb May/July	2011 2011 2012 2012
29	Twas News Letter	24	1	-	2012
30	Quarterly Newsletter of the Health reform foundation of Nigeria	1&2	1	Mar/April Jun/July	2012

Alhaji A. S. Yunusazzau
Ag. Director / HOD

ADMINISTRATION DIVISION

The Administration Division during the period under review to provided support services required for the implementation of the Institute's Mandate. This involve routine administrative function such as recruitment, training and development, discipline, staff welfare matters etc. it also involve in the implementation of Government and Management policies.

REPORT OF ACTIVITIES IN 2012

In 2012 the Division carried out the following activities:

STAFF PROMOTION

51 Senior Staff promotion were recommended for the approval of the Honourable Minister of State for Health in the absence of the Governing Board under the 2012 promotion exercise. Also 16 junior staff promotion were approved by the Director
General. All promotions were with effect from 1st January, 2012

SENIOR STAFF

Alh. A. S. Yunusazzau	Ag. Director Administration
Mrs. G. O. Ihenewengwa	Chief Executive Officer
Mrs. A. E. N. Okoye	Chief Admin Officer
Mr. B. I. Ohanusi	Chief Executive Officer
Mr. N. N. Bitrus	Asst. Admin. Officer
Mr. B. N. Osuji	Principal Executive Officer I (PW)
Mr. M. I. Ezerendu	Senior Admin Officer
Miss N. A. Nneji	Asst.Executive Officer (Records)
Mrs. N. I. Akintan	Snr. Admin Officer I
Mrs. Q. M. Aderounmu	Principal Executive Officer I
Mrs. N. C. Nwofor	Principal Executive Officer II
Miss M. T. Okon	Senior Confidential Secretary
Mrs. Comfort Duker	Senior Confidential Secretary
Mrs. G. A. Charles	Senior Confidential Secretary
Mr. M. K. Idris	Senior Executive Officer
Miss P. O. Emelue	Admin Officer II
Mrs. G. P. Igbuan	Chief Secretarial Assistant
Mrs. N. N. Ekpo	Chief Secretarial Assistant
Mrs. F. J. Adeniyi	Higher Executive Officer
Mrs. T. J. Usen	Senior Secretarial Assistant I

2012 SENIOR STAFF PROMOTION

Research Fellows

S/N	Name	Designation/ Grade Level	Effective Date
1	Dr. (Mrs.) Y. A. Olukosi	Chief Research Fellow CONHESS 12	01/01/2012
2	Dr. B. A. Iwalokun	Chief Research Fellow CONHESS 12	01/01/2012
3	Dr (Mrs.) M. A. Sulyman	Senior Research Fellow CONHESS 11	01/01/2012
4	Dr. (Mrs.) F. O. Nwaokorie	Research Fellow 1 CONHESS 10	01/01/2012
5	Dr. C. O. Agomo	Research Fellow 1 CONHESS 10	01/01/2012
6	Dr (Mrs.) M. N. Nwokoye	Research Fellow 11 CONHESS 09	01/01/2012
7	Dr. C. V. Gab-Okafor	Research Fellow 11 CONHESS 09	01/01/2012
8	Mr. A. Okwuraiwe	Research Fellow 11 CONHESS 09	01/01/2012
9	Mr. B. Orok	Research Fellow 11 CONHESS 09	01/01/2012
10	Mr. O. Ajibaye	Research Fellow 11 CONHESS 09	01/01/2012
11	Mrs. A. O. Adagbada	Research Fellow 11 CONHESS 09	01/01/2012
12	Miss E. E. Afocha	Research Fellow 11 CONHESS 09	01/01/2012

MEDICAL LAB SCIENTISTS AND SCIENCE LAB. TECHNICIANS

S/N	Name	Designation/ Grade Level	Effective Date
1	Mr. S. K. Akindele	Chief Med. Lab. Scientist CONHESS 12	01/01/2012
2	Mrs. U. T. Ibasi	Chief Med. Lab. Scientist CONHESS 12	01/01/2012
3	Mrs M. A. A. Adetunji	Asst. Chief Med. Lab. Scientist CONHESS 11	01/01/2012
4	Mrs. T. Fesobi	Asst Chief Sci. Lab Technician CONHESS 12	01/01/2012
5	Mr. M. Bamidele	Asst Chief Science Lab Tech CONHESS 11	01/01/2012
6	Mrs. M. O. Akinyele	Prinp Med. Lab. Technician CONHESS 10	01/01/2012
7	Mrs. N. M. Aniedobe	Prinp Med. Lab. Technician CONHESS 10	01/01/2012
8	Mrs. I. O. Edu-Muyideen	Prinp Med. Lab. Scientist CONHESS 10	01/01/2012
9	Mrs. M. Fowora	Prinp. Med. Lab. Scientist CONHESS 10	01/01/2012
10	Mrs. N. E. Tochukwu	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
11	Mrs. S. F. Okhiku	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
12	Mr. E. O. Fasela	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
3	Mrs. C. L. Okoli	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
14	Mr. G. O. Liboro	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
15	Mr. A. A. Adesesan	Snr. Med. Lab. Scientist CONHESS 09	01/01/2012
16	Mrs. C. C. Onyeitu	Snr. Science Lab. Tech. 1 CONHESS 08	01/01/2012

NURSING OFFICERS CADRE

S/N	Name	Designation/ Grade Level	Effective Date
1	Mrs. D. D. Oladipo	Matron Grade II CONHESS 09	01/01/2012
2	Mrs. E. E. Anyasi	Matron Grade II CONHESS 09	01/01/2012

ADMIN/TECHNICALOFFICERS' CADRE

S/N	NAME	DESIGNATION/GRADE LEVEL	EFFECTIVE DATE
1	Mrs. A. E. N. Okoye	Chief Administrative Officer CONHESS 12	01/01/2012
2.	Mr. S. A. Olusoga	Chief Executive Officer (Account) CONHESS 12	01/01/2012
3.	Mr. B. I. Ohanusi	Chief Executive Officer (Admin) CONHESS 12	01/01/2012
4.	Mr. N. N. Bitrus	Asst. Chief Administrative Officer CONHESS 11	01/01/2012
5	Mr. B. O. Aina	Asst. Chief Accountant Officer CONHESS 11	01/01/2012
6.	Miss A. N. Nneji	Asst. Chief Executive Officer (Admin) CONHESS 11	01/01/2012
7	Mr. S. Emeqbualili	Principal Confidential Secretary I CONHESS 10	01/01/2012
8	Mr. L. D. Abiola	Principal Confidential Secretary I CONHESS 10	01/01/2012
9	Mrs.QM.Aderonumu	Principal Executive Officer I (Admin) CONHESS 10	01/01/2012
10	Mrs.. A. Okolie	Principal Confidential Secretary II CONHESS 09	01/01/2012
11	Mrs. C. N. Nwofor	Principal Executive Officer II CONHESSS 09	01/01/2012
12	Mrs. N. I. Akintan	Senior Admin Officer CONHESS 09	01/01/2012
13	Mr. O. Oforomeh	Principal System Analyst Prog. CONHESS 09	01/01/2012
14	Mrs. R.O.Alesinloye	Principal Executive Officer II CONHESS 09	01/01/2012
15	Mr. D. T. Johnson	Senior. Computer System Tech. CONHESS 09	01/01/2012
16.	Mrs. C. Duker	Senior Confidential Secretary CONHESS 08	01/01/2012
17	Mrs. M.A Tsambido	Chief Secretarial Assistant CONHESS 08	01/01/2012
18	Mr. M. Olatunji	Senior. Executive Officer (Accts) CONHESS 08	01/01/2012
19	Ms O.R. Awogbemi	Senior. Executive Officer (Accts) CONHESS 08	01/01/2012
20	Mrs.. G. a. Charles	Senior. Confidential Secretary CONHESS 08	01/01/2012
21	Mrs. Y. A. Oyelakin	Senior. Executive Officer (Admin) CONHESS 08	01/01/2012

JUNIOR STAFF PROMOTED /CONVERTED

S/No.	Name	Designation/ Grade Level	Effective Date
1	Mr. E.K. Akintunde	Transp. Superintendent Officer CONHESS 07	01/01/2012
2	Mr. C. Uzuh	Higher Exec. Officer (Stores) CONHESS 07	01/01/2012
3	Mrs. T.J. Usen	Senior Secretarial Asst. I CONHESS 07	01/01/2012
4	Mr. G. Udomkpa	Transp. Superintendent. Officer CONHESS 07	01/01/2012
5	Mrs. E. Robinson	Senior Social Welfare Asst I CONHESS 06	01/01/2012
6	Mrs. A. Issa	Senior Lab Tech. CONHESS 06	01/01/2012
7	Mr. V.E. Archibong	Asst. Executive Officer CONHESS 05	01/01/2012
8	Mr. E. A. Akpabio	Senior Clerical Officer CONHESS 04	01/01/2012
9	Mrs. J. Obi	Senior. Environ. Asst CONHESS 04	01/01/2012
10	Miss I.D. Akpan	Senior. Clerical Officer CONHESS 04	01/01/2012
11	Miss I. D. Udosen	Senior. Clerical Officer CONHESS 04	01/01/2012
12	Miss C. Obi	Senior. Clerical Officer CONHESS 04	01/01/2012
13	Mr. J.O. Shopitan	Senior. Clerical Officer CONHESS 04	01/01/2012
14	Mr. O.D. Airekhome	Senior. Clerical Officer CONHESS 04	01/01/2012
15	Miss A.O. Fifo	Senior. Clerical Officer CONHESS 04	01/01/2012
16	Mrs. M. A. Olowoyeye	Senior. Clerical Officer CONHESS 04	01/01/2012

CONVERSION

17	Mrs. L. Allen	Laboratory Assistant CONHESS 03	01/01/2012

TRANSFER OF SERVICE/RESIGNATION OF APPOINTMENT

(a) Dr. (Mrs) M. T. Neimogha transferred her appointment to College of Medicine Idi-Araba with effect from 4th October, 2012.
(b) Mr. A. O. Oduola resigned his appointment with NIMR to join University of Ilorin, Kwara State, with effect from 6th September, 2012.
(c) Mrs. A. O. Faneye resigned her appointment with NIMR to join the University Teaching Hospital Ibadan, Oyo State, with effect from 18th August, 2012.

NEW APPOINTMENT

New staff employed into various cadres during the period are:

Mr. D. Achanya	Snr. Lab. Technologist - CONHESS 9/1
Mr. D. Ochigbo	Procurement Officer - CONHESS 8/1
Mr. Bukar K. Musa	Procurement Officer - CONHESS 7/2
Mr. Paulinus A. Kuddi	Higher Store Officer - CONHESS 7/2
Mrs. Onyestin Alexander	Asst. Executive Officer II - CONHESS 5/1
Mr. C. A. Ojonugba	Asst Exe Officer (Accts) - CONHESS 5/1
Mr. I. M. Garba	Laboratory Technician - CONHESS 5/1
Miss Edosonwan Elikadesh	Clerical Officer - CONHESS 3/1
Mr. Raheem Adewale	Clerical Officer - CONHESS 3/1
Miss Luke Michael Uboho	Clerical Officer - CONHESS 3/1
MR. Sunmola Olusegun A	Clerical Officer - CONHESS 3/1
Mr. Adenu E. Edwin	Clerical Officer - CONHESS 3/1
Miss Adesina Basirat O.	Clerical Officer - CONHESS 3/1
Miss Juliet Odemwingie	Clerical Officer - CONHESS 3/1
Mrs. C. O. Abakpa	Clerical Officer - CONHESS 3/1
Miss B. O. Adesina	Clerical Officer - CONHESS 3/1
Mr. Elijah B. Ibrahim	Clerical Officer - CONHESS 3/1
Mr. A. Salawu	Craftsman (Electrical) - CONHESS 3/1
Mr. C. N. Odimba	Craftsman (Capent/Joinery)-CONHESS 3/1
Mr. I. Abu	Craftsman (Capent/Joinery)- CONHESS 3/1

DEATHS IN SERVICE
The Institute lost a staff, Mr. S. Adegboyega, a Chief Driver Mechanic during the year 2012.

RETIREMENT FROM SERVICE

Staff retired from the service of the Institute on the attainment of 65 years of mandatory retired age. These were:

Prof. E. O. Idigbe	Director of Research (Microbiology)	20/04/2012
Dr. P. U. Agomo	Director of Research (Biochemistry)	16/08/2012
Miss B. Chukurah	Chief Executive Officer (Admin)	07/07/2012
Mrs. C. Anyaefolu	Chief Library Officer (Library)	22/08/2012
Mr. E. Y. Ononuga	Prinp Supt. (Electrical)	30/06/2012
Mr. J. Adekoya	Foreman (Animal Colony)	27/06/2012

STAFF TRAINING AND DEVELOPMENT

During 2012 Management/Senior Staff of the Institute attended 42 Conferences/ Seminars within Nigeria and Abroad. The Institute also hosted successfully 3rd International Conference from 5th – 8th November, 2012.

NIMR STANDING COMMITTEES
The Administration Division provided services to all the standing Committees of the Institute namely:

i. Senior Management Committee
ii. Senior Staff Scientific Committee
iii. Appointment, Promotion and Disciplinary Committee Admin & Technical (Senior)
iv. Board of Trustees Committee (Pension)
v. Grant Writing & Management Committee
vi. Tenders Board Committee
vii. Research & Planning Committee of NIMR Governing Board
viii. Finance Committee
ix. Appointment, Promotion and Disciplinary Committee (Junior)
x. Housing Allocation Committee

NIMR PENSION BOARD OF TRUSTEES
The Institute Board of Trustees in 2012 met all its responsibilities to all existing Pensioners and paid all pension arrears due to its pensioners.

The Board of Trustees had 4 regular and 2 emergency meetings; carried out verification/attestation exercise for Pensioners in all the state of the Federation organised a workshop for Pensioners on life after retirement and Management retreat for B.O.T Members at Akwanga, Nasarawa State

CONCLUSION
The year 2012 was a successful year for Administration Division as it was able to perform most of it statutory function.

STAFF WELFAREGRANTS ATTRACTED TO NIMR
- Sustained conductive working environment
- Training and capacity development for staff
- Distribution of some consumable product for Christmas celebration

Mr. Shola Olagunsoye
Director / HOD

FINANCE AND ACCOUNT DIVISION

It is with great joy and heart full of praise that I put forward the activities of my Division. The year 2012 did not record any loss of staff through death; resignation or retirement, four new however, joined the Division. The year 2012 recorded a mixed feeling in terms of funding as the Institute recorded a better funding support in its overhead subvention (? 35.2m, 2011: ? 71.4m, 2012); it was rather abysmally subvented in the Capital outlay funding (? 196m, 2011: ? 47m, 2012).

The year also increased level of activities in the services rendered by the Human Virology Laboratory but activities in the Clinical Diagnostic Laboratory did not improve as compared to year 2011. Miscellaneous Income from facilities management in 2012 as (? 3.7m) was below (? 7.7m) of 2011's return; while the Manager of the 20-room Guest House performed better in year 2012 than year 2011, in terms of lease payment. The Institute did not perform badly in the area of External Grant supports from Donor Agencies; but there is still much room for improvement. I hope year 2013 will better than 2012.

FINANCE & ACCOUNT TEAM

Mr. S.R. Osgundoye	Director (F&A)	Miss O.R. Awogbemi	Higher Exec. Officer (Accts)
Mr. S. B. Kadiri	Chief Accountant	Mr. K. O. Ologwu	Asst. Exec. Officer
Mrs. T. A. Malomo	Chief Accountant	Mr. Olatunji, Michael	Higher Exe. Officer (A/C)
Mr. S. A. Olusoga	Asst. Chief Exe. Officer I (Accts)	Mr. Paulinus Abba Kudi	Higher Store Officer
Mr. I. Nwaneri	Prin. Exec. Officer 1 (Store)	Mr. N. O. Iwegbu	Higher Exec. Officer (Accts)
Mr. B.O. Aina	Prin. Accountant	Mrs. A. Adebayo	Higher Exec. Officer (Acct)
Mrs. B.O. Okafor	Prin. Exec. Officer II (Acct)	Mr. C. Uzuh	Exec. Officer (Stores)
Mrs. O. Ishola	Prin. Exec. Officer II (A/C)	Mr. A. B. A. Essien	A.E.O. (Stores)
Mr. S. Adekoya	Higher ExeC. Officer (Acct)	Mr. P.O. Olaleye	Asst. Exec. Officer (Accts.)
Miss C. Otuokpaikhian	Higher Exec. Officer (Accts)	Mr. C.A. Ojonugba	Asst. Exec. Officer (Accts.)
Mrs. M. A. Olatunji	Higher Exec. Officer (Acct)	Mr. C.G. Ochai	Asst. Exec. Officer (Accts.)
Mrs. E. O. Ajaie	Higher Exec. Officer	Mr. D. Oluwagbemi	Snr. Clerical Officer

GRANTS ATTRACTED TO NIMR 2012

(NAIRA)

PROJECT NAMES	DONOR AGENCY	INFLOW	OUTFLOW	BALANCE
NIMR APIN TB (Dr. C. Onubogu)	APIN	3,480,000.00	2,855,000.00	625,000.00
Germ Killing Efficacy Project (Dr. N. Idika)	Reckit Benkiser Nig. Ltd	3,420,560.00	3,420,560.00	0.00
Capacity Building And Support for Three Ethics Review Committees (Dr. K. Oyedeji)	European & Dev. Countries Clinical Trial Partnership (EDCTP)	1,928,485.63	1,883,496.56	44,989.07
Pharmacokinetic Project (Dr. T.S. Awolola)	EUROPEAN UNION	5,486,844.25	5,651,587.43	205,845.42
Syngenta Project (Dr. T.S. Awolola)	Syngenta	12,617,568.70	9,393,736.87	3,223,831.83
Health Education Project (Dr. N. Idika)	Flour Mills Nig. Ltd	100,000.00	100,000.00	0.00
Establishment of RECS and Capacity Building of Human Resources & Infrastructure (Mrs. N. Otuonye)	European & Dev. Countries Clinical Trial Partnership (EDCTP)	1,946,219.16	1,881,221.92	64,997.24
Evaluation of Community Participatory Process in Perinatal Care as a Strategy to Improve Maternal & Neonatal Care in Nigeria (Dr. O. Ezechi)	International Association of National Public Health Institute (IANPHI)	4,602,236.80	4,394,718.68	207,518.12
Multi-Drug Resistant TB Prevention & Control (Dr. C. Onubogu)	Institute of Human Virology	865,075.20	372,173.52	492,901.68

Engr. E.O. Adedeji
Chief Engineer / HOD

WORKS & MAITENANCE DIVISION

Works and Maintenance Division is saddled with the responsibilities of coordinating all routine maintenance of civil, electrical and building engineering activities of the Institute. In addition, also to oversees all Infrastructural Capital Projects and witnessed the under mentioned projects undertaken but directly supervised by the appointed Consultants in 2012.

A. CAPITAL PROJECTS

1. **New e-Library Building - Phase I**
   Construction of a new e-Library Building up to block works and roofing as phase 1
   - **Contractor**
     Bernas Investment Limited
   - **Consultant**
   - Messrs Crossgate Design Associates.
   - New vehicle A Toyota Hilux Double Cabin Reg. No N12 01FG as project vehicle.

2. **HVL Building Extension**
   Design Review of an existing foundation of the HVL Building Extension up to the Ground Floor. Construction to Roofing stage as at the year2012 ending by 31st December. Consultants – Crossgates Design
   - Contractor – Bernas Investment Limited
   - Consultant – Grossgate Design Associates.

3. **Re-Roofing of the Staff Quarters Block C.**
   Reinforced Concrete Works of Piers, Fabrication and Installation of steel Roof Truss awaiting Aluminum Roofing sheets cover placement as at 31st December, 2012.
   - Contractor – Bernas Investment Limited
   - Consultants – Crossgates Design Associates

4. **The Renovation & Refurbishment of Auditorium**
   Replacement of all the 300 seater capacity in June 2012 by contract award to Messrs Rhema Furniture Company.

B. ROUTINE AND MAINTENANCE SERVICES

B1. CIVIL

5. Renovation and Furnishing of the procurement office was done in June 2012.
6. Rehabilitation and servicing of the 40H.P. Rotary Water Pumping machine in June 2012 to meet the needed emergency response to the perennial flooding confronting the Institute annually.
7. Work Programming and Scheduling for Messrs Ranstojan Limited, the outsourced clearing services provider was prepared promptly by the Civil Unit of Works & Maintenance Division for use as a roster for the year 2012.
   Effective supervision, monitoring and control of the Contractor for daily cleaning of offices/Laboratories and clearing of the entire drainage networks within the NIMR premises was enforced and ensured by us quarterly throughout 2012.
8. Routine service maintenance of all faulty water supply lines and sanitary plumbing pipe networks of the Public Health and Biochemistry & Nutrition Divisions' Toilets in May 2012.
9. Concrete Pavement Construction for the Innovative Vector Control and Weather Station of the Public Health Division In June 2012.
10 Replacement of the collapsed Water Tower System with a newly fabricated one for House 5 in October 2012
11 Other sundry routine maintenance services on reported faulty plumbing, masonry, carpentry/furniture cases in the Divisional offices, Laboratories and Residence were attended to as at when due throughout the year 2012.
12 Daily routine pumping of water by the

plumbers to the various elevated water tanks from the ground reservoirs for reticulation to offices, laboratories and Residence, January – December 2012.

13 Twice weekly incineration of all generated biomedical wastes from the HVL, CDL DOT/T.B. and ARV clinics and other Laboratories throughout the year 2012.

14 Effective supervision of the 'LAWMA' regular disposal of all the loose/packaged solid wastes generated at the offices, Laboratories, Residence and Gardens throughout 2012.

B:2 ELECTRICAL UNIT

1) Maintenance Service Contracts in the electrical Units include routine servicing of the 120KVA, 150KVA, 500KVA R Generator and 500KVA Y Generator each of which was carried out by the appointed service providers under an effective supervision of the electrical unit as at when due in 2012.

- 500KVA R Gen. set
- 500KVA Y Gen set } by Jubaili Bros (Eng) Ltd.
- 120KVA Gen set
- 150KVA Gen set } by Yisau Iyiola Adeniran, Eng. Services

2) Effective supervision of DAT Investment & Company for maintenance servicing of the Priority Feeder Line Equipment, its Line accessories and extra Monitoring services on both the High Tension and Low Tension facilities for the year 2012.

3) The yearly servicing of the Transformer could not be carried out as the service proposal was being kept in view for availability of fund.

4) Re-routing of the electrical power feeder line to the Medical Compound was implemented through a contract awarded to Messrs DAT Investment & Company Limited in December 2012.

The execution of this project was effectively supervised by the electrical unit.

5) The extension of 150KVA generator as an interconnectivity to maintain constant supply to the NIMR Internet Equipment was executed in October 2012 to ensure that the system is adequately powered.

6) The maintenance services resultant to constant routine inspection, conditional maintenance, preventive maintenance to avoid breakdown of plants in the office, Laboratory and Residential Facilities were severally carried out in 2012.

7) Repair of the FS50 incinerator and three major Autoclaves for use of the Laboratories was effected by middle of the year 2012 by Emis Engineering Limited through a contract. However, service contract agreement with the same company is still in view.

8) The Coldroom that got spoilt in October 2011 was supervised for a repair in April 2012.

9) The reactivation of the 350KVA sound proof generator behind the ARV Clinic was successfully carried out in November 2012. Its relocation for use at the Main Laboratory Building Complex will soon be proposed for the management consideration.

B.3 R & A UNIT

1. Routine Servicing of all the air conditioners in the office, Laboratories and House 6 Buildings was carried out as scheduled for the year 2012 as follows:

Locations	1st Servicing	2nd Servicing
WORKS MAINTENANCE	January 2012	July 2012
T.B Laboratory	February 2012	August 2012
CDL	March 2012	
HVL	March 2012	September 2012
VCT+DT	March 2012	
Conference room	April 2012	
Transport	April 2012	October 2012
Microbiology	April 2012	
Biochemistry (Nutrition	May 2012	
Public Health	May 2012	
Ground Floor Lab. Complex	May, 2012	November.2012
Auditorium	May 2012	
House 6/Guest chalet	May 2012	
Admin. Block (Ground Floor)	June,2012	
Admin. 1st Floor	June 2012	
Admin. 2nd Floor	June 2012	December.2012
Admin. 3rd floor	June 2012	
Admin 4th Floor	June 2012	
Board Room	June 2012	
Total		

New Installations

• Two new Thermocool Deep Freezers were installed at the HVL in December 2012

• 2 new Panasonic A/cs were installed at the HVL

• One new Panasonic Split A.cs were installed in the PHD in June 2012

• Two 2HP Panasonic A.cs were installed in House 6.

• One 1.5 H.P. Panasonic A.Cs were installed in DG's Office Reception Office.

Challenges

Bulk supply of materials of such as welding kits has not been supplied for the last two years now.

B4:**TRANSPORT UNIT**

As at year 2012, the Nigerian Institute of Medical Research had 16 vehicles as follows:

1, FG79N12 Hyundai Jeep 2010 Model, purchased in 2010. The vehicle was allocated to the Chairman of Board, was serviced on 16th May 2012 and was being serviced by Hyundai Motor Company. The vehicle was in good condition.

2.The vehicle FG53N12 Toyota 4 Runner Jeep 1998 Model was purchased in 2007, allocated to the Director General, serviced on 5/7/2012 and set of brake drum replaced with the front shock absorber, repaired by Adekunle Motors. The vehicle was on the road.

3. The vehicle FG64N12, Toyota Corolla, Saloon 2002 Model, purchased in 2008. The vehicle was allocated to the Director General, serviced on 4/9/2012 with four tyres replaced with new ones on 8/6/2012 by Adekunle Motor on 26/10/2012. The timing belt with Roller flange and Adjuster and fuel pump were replaced by Onwodi. The vehicle was in good condition.

4.The vehicle FG55N12 Toyota Corolla Saloon white 2000 Model purchased in 2007 was in the pool, serviced on 24/7/2012 and 4 New tyres were replaced. Repaired by 'Onwodi' on 31/12/2002 A new battery was fixed. The vehicle was in good condition.

5.The vehicle FG56N12 Toyota Corolla Saloon grey, 2000 Model purchased in 2007 was in the pool. The Engine was overhauled on 13/12/2012 and the 4 shock absorbers were replaced with brake pads. Repair was done by Adekunle Motors. The vehicle was in good condition.

6.The vehicle FG48N12 Peugeot 406 Saloon 1998 Model purchased in 2004 was in the pool. It was serviced on 29/11/2012 with a complete set of new silencers in place. Its alternator was repaired by' Sodhamed'. The vehicle was in good condition.

7.The vehicle FG28N12 Peugeot 504 Station Wagon, 1998 Model purchased in 1998 was in the pool, serviced on 4/10/2012 with its battery and all the 4 tyres replaced with new ones. Repair was by 'Sodhamed'. The vehicle was in good condition.

8.The vehicle FG82N12, Toyota Hilux Van, 2010 Model was purchased in 2010. The vehicle was in the pool for Field Operations. It was serviced on 17/10/2012. The vehicle was in good condition.

9.The vehicle N12 01FG, Toyota Hilux Van 2011 Model was purchased in 2011 for e-Library Building Project. The vehicle was maintained by the Library Project Contractor.

10.The vehicle FG54N12, Toyota 4 Runner Jeep 1994 Model purchased in 2007 was attached to the HVL and maintained by HVL. The vehicle was in good condition.

11.The vehicle FG80N12, Toyota Camry Saloon 2010 Model purchased in 2010 was dedicated for Abuja Liaison office use and equally maintained in Abuja. It was in good condition.

12.The vehicle FG62N12, Toyota Corolla saloon 2002 Model purchased in 2008 was dedicated for Abuja Liaison office use and equally maintained in Abuja. It was in good condition.

13.The vehicle FG35N12 Peugeot 505 Station Wagon 1987 Model purchased in 2002 dedicated for Maiduguri Station use and equally maintained in Maiduguri. It was in good condition.

14.The vehicle FG7N12, Sewage Disposal Chevrolet Tanker Lorry 2001 Model was purchased in 2002. The vehicle was commercialized by a service contract awarded to contractor. The contractor however returned the vehicle to NIMR since 31/12/2011. The vehicle was not in good condition and hence has been lying fallow.

15.The vehicle FG61N12 Honda CRV Jeep was in the pool, was grounded since 2010 following a gear problem as major fault. It has been a drain to the Institute's purse. It was already boarded for the next auction sales.

16. The vehicle FG45N12 Peugeot 505 s/wagon 1989 Model purchased in 2005 was dedicated to the HVL. The vehicle was grounded since 2010 for reasons of outright engine replacement and other sundry problems. It was recommended for boarding.

Summary

The Two vehicles in 15 and 16 above were board able . One of the vehicles (item 14) needed to be repaired. The remaining thirteen vehicles were in good condition.

2012
STAFF RESEARCH PUBLICATIONS

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12. Amoo OS, Taiwo IA, Salu OB, Okwuraiwe A, Onwuamah CK, Awe M, Oforomeh O Onwujekwe DI, Ezechi OC, Audu RA. (2012) Comparison of the COBAS/Ampliprep Taqman and Amplicor HIV-1 monitor tests in Lagos, Nigeria. African Journal of Laboratory Medicine. Art. #68, 4 pages. http://dx.doi. org/10.4102/ajlm.v1i1.68 (In press).

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Staff PhD Programme

On-going in 2012

Mrs M.A Fowora	Incidence of *H.Pylori* with gastro-intestinal diseases	University of Benin
Mrs A.Z .Musa	Long-term effect of ARV drugs on HIV positive patients in Nigerian: Insights from mathematical models – 5 years review	University of Ibadan
Dr. O.C. Ezechi	The burden of premalignant lesions of the cervix in HIV positive women in south Western Nigeria	Lund University, Sweden
Mrs. J.O Okwuzu	Protozoal and Helminthic infection in HIV/AIDS patients	University of Benin
Mr. B.A Oke	Viral aetiology of jaundice in Children	University of Lagos
Mr. A.B. Orok	Studies on co-infection of Babesia and *Plasmodium* parasites	University of Lagos
Mr. O. Ajibaye	*Polymorphisms in plasmodium falciparum* apical membrane antigen 1 (AMA-1) in relation to malaria outcomes in Lagos, Nigeria.	University of Lagos
Miss N. Onyejepu	Diversity and primary drug resistance genotype of mycobacterial strains from HIV seropositive and seronegative patients in southwestern Nigeria	University of Lagos

Partnership

Below is the list of some of the partners with whom NIMR collaborates

1. African Malaria Network Trust
2. Alexander Von Humboldt, Germany
3. APIN, Nigeria
4. Centre for Disease Control, Atlanta
5. Centre for disease Control, Nigeria
6. Chevron – Nigeria
7. Coris BioConcept, Research and Development Department, Gembloux, Belgium.
8. Cruz, FIOCRUZ, Belo Horizonte, MG, Brazil.
9. Deutsche Forschungs Gemeinscaft (DFG) Germany
10. Family Health International, North Carolina, USA
11. Ford Foundation
12. European Network for Advanced Research on Malaria Transmitting Insect Control
13. European Union and Developing Countries Clinical Trial Partnership, The Haque, Netherlands.
14. GTZ, Germany
15. Harvard School of Public Health, Boston USA
16. International Association of National Public Health Institutes, Atlanta, USA.
17. International Centre for Genetic Engineering & Biotechnology (IGGEB), Italy.
18. International Foundation for Science (IFS) Sweden.
19. Instituto Venezuolano de Investigaciones (IVIC), Caracas
20. KIT Biomedical Research (Netherlands)
21. Laboratório de Imunologia Celular e Molecular, Centro de Pesquisas René Rachou, Fundação Oswaldo
22. Liverpool School of Tropical Medicine, UK
23. Lund University, Sweden
24. MacArthur Foundation
25. Medical Research Council Unit, Fajara; Banjul, The Gambia
26. Medical Research Council, UK
27. National Reference Centre for Helicobacter Freiburg, Germany
28. North Western University Chicago, USA
29. PARTEC, Germany
30. Royal Tropical Institute (Netherlands)
31. Roche Foundation Lausanne, Switzerland
32. SARETI, South Africa
33. Swiss Tropical Research Institute
34. TWAS, Italy
35. University of Cocoody, Abidjan, Ivory Coast
36. University of Maryland, Baltimore, USA
37. Vector Control Reference Unit, South Africa National Institute of Communicable Diseases, Johannesburg, South Africa.
38. West African Health Organization
39. Welcome Trust, UK
40. Wolfson Wellcome Biomedical Laboratories, Zoology Department, Natural History Museum, London, UK.
41. World Health Organization

NIGERIAN INSTITUTE OF MEDICAL RESEARCH, YABA LAGOS

Research for National Health

COMMUNIQUÉ OF THE THIRD INTERNATIONAL SCIENTIFIC CONFERENCE OF THE NIGERIAN INSTITUTE OF MEDICAL RESEARCH, YABA, LAGOS, NIGERIA

Theme: STRENGTHENING HEALTH RESEARCH CAPACITY IN AFRICA: THE CHALLENGES

Sub themes:

a. **Controlling infectious diseases through partnership**
b. **Non communicable diseases : the hidden epidemics**

PREAMBLE

The 3rd International Scientific Conference of the Nigerian Institute of Medical Research (NIMR), Yaba, Lagos, Nigeria was hosted at the auditorium, Nigerian Institute of Medical Research (NIMR), 6 Edmund Crescent, off Muritala Mohammed Way, Yaba Lagos Nigeria from the 5th to the 8th November, 2012.

Over 400 Scientists, Researchers, Clinicans, Administrators and Policy makers from the six geo-political zones of Nigeria, as well as experts from NGOs, opinion leaders, representatives of foreign governments, WHO, TDR, MRC UK, media agencies and the general public participated in the conference proceedings. The conference consisted of a mentoring programme designed to entrench the culture of health research, guest lecture, symposia, free communications, and stewardship presentations by the heads of NIMR research groups. It also featured the inaugural meeting of the Society for Mosquito Control in Nigeria (SMCN).

The Conference was chaired by Professor Nimi Dimkpa Briggs, Emeritus Professor of Obstetrics and Gynaecology and former Vice Chancellor, University of Port Harcourt, Port Harcourt, Nigeria. The special Guest and guest of Honour were The Honourable Minister of State for Health, Dr. Mohamed Ali Pate and His Excellency, Mr Babatunde Raji Fashola (SAN), the Executive Governor of Lagos State respectively. Professor Taiwo Adegboyega Adewole, the foundation provost, College of Health Sciences, Osun State University, Oshogbo presented the guest lecture titled **"Health Research: *From the Bench to the Bedside*".**

The conference agenda included a facilitated pre-conference workshop on research mentorship, during which participants brain-stormed on a semi-formal platform on challenges and barriers to research mentorship and the way forward. In the course of the conference, there were 54 presentations by researchers, seasoned experts and resource persons on critical issues relevant to the conference theme. There were also special sessions that featured symposia and stewardship presentations by heads of NIMR research groups.

At the close of the conference,

1. Participants observed with profound dismay the poor state of health and health research in Nigeria and noted with great concern the absence of a Health Research Policy in the country.
2. The conference delegates identified the multiple challenges and ineffective ways of managing malaria, tuberculosis, HIV/AIDS, maternal and infant morbidity and mortality, non-communicable diseases, natural and man-made disasters and emergencies, poverty and ignorance as serious threats to the corporate existence of Nigeria.

3. Participants also observed that non passage of the health bill and poor health funding by the three tiers of government and the private sector are contributory to the poor health indices of Nigeria.
4. It was also observed with great disappointment that several years after the Abuja declaration on health research funding, Nigeria is yet to implement the 2% budgetary allocation to health research.
5. Participants unanimously agreed that misplaced priority in government spending and policy which includes paucity of quality research addressing Nigerian health challenges, and poor utilisation of research output are the major causes of the health woes plaguing Nigeria.

RECOMMENDATIONS

After thorough deliberations on the problems aforementioned, considering their critical and urgent nature, the conference participants, unequivocally and unanimously recommend as follows;

1. There is an urgent need for the government to create an enabling environment and facilitate north-south as well as south-south collaboration for health research capacity building and strengthening in Nigeria for effective response to national health research priorities towards achieving the health-related MDGs and vision 20-2020.
2. Federal Ministry of Health should constitute a committee of all stakeholders to develop a health research policy for Nigeria.
3. The responsible agencies should as a matter of urgency facilitate training and retraining, as well as networking for effective prevention and management of emergencies and other humanitarian disasters.
4. Public Private Partnership (PPP) should be further strengthened to support and facilitate research into common health problems in Nigeria.
5. The three tiers of government as a matter of priority should implement the 2% budgetary allocation to health research and improve funding for health research toward achieving the health related MDGs and vision 20-2020.
6. NIMR is encouraged to sustain the International Conference on a three-yearly basis as an avenue to disseminate health research findings and share experiences towards entrenching culture of research and development.

Finally, the Management and Staff of NIMR, and the Conference Organizing Committee wish to express our profound gratitude to the Honourable Minister of State for Health, Dr. Mohammed Ali Pate, His Excellency, Mr. Babatunde R. Fashola (SAN), The Executive Governor of Lagos State and the conference Chairman, Emeritus Professor Nimi Dimkpa Briggs, *OON, FAS* as well as the Guest Lecturer Professor TA Adewole for their contribution to the huge success recorded by the conference.

Dr. Samson Awolola
Chairman, Central Organising Committee

Dr. Oliver C. Ezechi
Chairman, Scientific Committee

Photospeak!

NIMR @ National Education Innovations Exhibition in Abuja, November 19-21 , 2012

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2012 NIMR SCIENTIFIC CONFERENCE