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Our Science

A quarterly newsletter produced by the MRC Unit The Gambia focusing on our scientific research in health and highlighting our achievements in Africa.

04 NEWS

06 DISEASE CONTROL AND ELIMINATION

08 NUTRITION

10 VACCINES AND IMMUNITY

12 SCIENCE SUPPORT SERVICES

14 PROFILES

04



Historic moment in the pooling of forces in global health research

06



Preventing child pneumonia deaths with novel oxygen solutions study

CONTENTS

04

NEWS

06

DISEASE CONTROL AND ELIMINATION

08

NUTRITION

10

VACCINES AND IMMUNITY

12

SCIENCE SUPPORT SERVICES

14

PROFILES



Our Science: Issue 5

The launch of the West Africa Global Health Alliance, WAGHA in short, opens this issue and highlights the increasing commitment and presence of MRCG in West Africa. We are joining forces with Cheikh Anta Diop University, instituted in 1957, and the Institut de Recherche en Santé, de Surveillance Epidémiologique et de Formation (IRESSEF), inaugurated only a few weeks ago, to create a hub for medical research and training that will serve the whole West African region. WAGHA will seek to establish additional collaborations with other research institutions and universities across the region, and will focus, at least initially, on maternal and neonatal health, malaria, tuberculosis and neglected tropical diseases. WAGHA is a major strategic development for the MRC Unit The Gambia. The Disease Control & Elimination theme has chosen the Teknon project, which is about a new and affordable way to provide oxygen for severely sick children in peripheral health facilities, a potential life-saving intervention, to feature in this issue. Results are extremely encouraging and we are now discussing options for a scale up in The Gambia. The Nutrition theme reports an alarming prevalence of high blood pressure in West Kiang. This is an important study as, in the next 15-20 years, non-communicable diseases such as hypertension or diabetes will become increasingly prevalent in sub-Saharan Africa, probably with a higher burden than infectious diseases by 2030. The Unit is starting to invest on research in this area. The Vaccines and Immunity theme recently completed a study in collaboration with the Ministry of Health and Social Welfare and the World Health Organization on different ways of administering polio vaccine. It is expected that this will provide useful indications on the most efficient method for administering this vaccine. A favourable and supportive environment is essential to conduct world-class research. The research support services report on a course for the shipment of infectious substances, an area that is highly regulated, and on standard operating procedures for research contracts review with the MRC Centre in Cambridge. These two activities, shipment of samples and contract negotiation, are essential for the good functioning of the Unit and eventually for maintaining its international position as a research centre of excellence. The last section of this issue presents profiles of 5 young African researchers working within the Unit, showing our commitment to supporting talented individuals.

- Professor Umberto D'Alessandro

Historic moment in the pooling of forces in global health research

Creating a research and training hub in West Africa

The West Africa Global Health Alliance (WAGHA) was formed to create a research and training hub in West Africa to undertake complementary and synergistic work on global health with particular attention to the regional priorities in the region. The alliance seeks to address the major health issues in West Africa, including the still unacceptably high high maternal and neonatal mortality burden as well as develop talent through capacity building in West Africa.

The membership of the alliance was officially formed on Wednesday 5 October 2016, with a signed and approved Memorandum of Understanding by all members from the three member institutions

namely; Medical Research Council UK, represented by the MRC Unit The Gambia (MRCG), Institut de Recherche en Santé, de Surveillance Epidémiologique et de Formation (IRESSEF) and Université Cheikh Anta Diop (UCAD).

From 30th - 31st March 2017, the alliance held its first scientific conference at MRCG. The 2-day conference provided an international platform for members of the alliance to discuss cutting edge research that seeks to address the burden of neglected, infectious, poverty-related diseases, as well as capacity development and networking activities to support the goals of the alliance.

To establish the identity of WAGHA, the alliance formally launched and unveiled its new logo on Friday 7th April 2017 at the UCAD in Dakar, Senegal. The official launch took place during the visit of Sir John Savill, Chief Executive of the Medical Research Council (MRC) United Kingdom to MRCG and WAGHA partners in Senegal.



Logo officially unveiled by Professor John Savill, MRC UK CEO and Professor Ibrahima Thioub, UCAD Rector with the British Ambassador to Senegal in attendance.



Participants from the three member institutions during the launch and unveiling of the WAGHA logo.

During the launch, the Rector of UCAD, Prof Ibrahim Thioub pointed out that within the university the focal point of the WAGHA is the Service of Human Parasitology at the Faculty of Medicine and Odontology but that WAGHA is accessible to all researchers within the University. "It is, in fact, a project we signed up to in November 2016, for the benefit of public health research in Senegal and in the sub-region", he said.

The Chief Executive of the MRC, Professor Sir John Savill said, "Our actions must be focused on infectious diseases affecting the health of women and children".

He added that scientific research on chronic infectious diseases will also be a priority.

According to Professor Souleymane Mboup (IRESSEF), "This alliance is a historic moment in the pooling of forces in global health research. The MRCG, in view of its over 70 years of experience, is equipped with sufficient resources to facilitate our alliance research objectives."

Professor Souleymane Mboup also said, "the biggest achievement in life is to see one's dreams come true". He added that he is convinced that "WAGHA will be a success".

Prof Umberto D'Alessandro, MRCG Unit Director, welcomed the realisation of this dream, while stating, "We (the 3 institutions) have decided to join forces to increase our capacity to carry out world class research and training. We are already collaborating in several research projects and this alliance will further promote such collaboration".

Preventing child pneumonia deaths with novel oxygen solutions study

Results from the Teknon project indicated excellent performance of the solar prototype against pre-defined targets, with delivery of high quality (at least 82%) oxygen 24/7.

Deaths from pneumonia and other severe childhood illnesses can be prevented with oxygen, but supply in most healthcare facilities in low resource settings is not reliable. Oxygen cylinders are expensive and logistically awkward, while oxygen concentrators, though typically more cost-efficient, require reliable power, which is absent in many low-resource countries. The goal of this project was to develop an oxygen delivery system for use in resource-limited settings that will operate 24/7 for five years with little or no maintenance and limited or absent mains power. The ultimate aim is that the system will be widely used and consequently reduce child deaths from pneumonia and other hypoxaemic severe illnesses.

The MRC Unit The Gambia's (MRCG), Novel Oxygen Solutions Project to prevent child pneumonia deaths, was a product development project aimed at identifying optimal prototype specifications by developing and field testing a concentrator-based oxygen supply system in government health facilities. Following useful findings from initial field tests using a mains-powered prototype, a solar-powered prototype was considered an optimal unit for further testing. One solar prototype was field tested at two government health facilities in The Gambia (one each in Soma and Farafenni) and one unit was field tested for a limited time in the Pacific (Fiji).

The project was successfully completed in December 2016. Results have indicated excellent performance of the solar prototype against pre-defined targets. High quality (at least 82%) oxygen was delivered 24/7, independent of mains power, and oxygen was also available for hypoxaemic children 99% of the time. The project field work was completed in The Gambia to the planned timetable and within the awarded budget. Project set-up and initial bench tests commenced in the third quarter of 2013 with successful completion of field tests in the fourth quarter of 2016.

Dr Akram Zaman, Senior Clinical Scientist, oversaw the completion of the project as Principal Investigator, taking over from Dr Stephen Howie who transitioned from the MRCG during the course of the project. Dr Bernard Ebruke, Paediatrician, was Project Manager and responsible for coordinating the project, and liaising with project partners, Azimut360, who provided technical input and carried out development and bench tests on the prototype. On-site technical support was provided by the MRCG Biomedical Department.

Options for scaling up to a national programme in The Gambia and in the Pacific are currently being explored, together with MRC Technology. Options for production companies to take forward the final specification to

production and commercialisation are also being considered. In addition, we are also looking to engage actively with development funders to further the uptake of the project's findings. The project benefitted from strong cooperation from the Ministry of Health and Social Welfare, health staff at the participating health facilities and support from MRCG research support services. The project was funded by a grant from the MRC Developmental Pathway Funding Scheme (DPFS).



The MRCG Oxygen Project Solar Prototype installed at the AFPRC Hospital, Farafenni

High prevalence of high blood pressure found in a rural Gambian district

With over 6,000 individuals included in this study, this represents to our knowledge the largest dataset on blood pressure (BP) across a healthy rural sub-Saharan population covering all ages above 5 years.



Blood pressure recording of a study participant for the Keneba Biobank

Hypertension is the term used for pathologically raised blood pressure. It constitutes a major health issue because it can lead to heart attack, cerebrovascular accidents, chronic kidney disease and other complications. It may go undiagnosed for many years largely due to the absence of severe clinical symptoms. It is a leading cause of death worldwide especially in sub-Saharan Africa. Hypertension

can arise from several factors including kidney diseases, hormonal problems and endocrine tumours. However, there is no identifiable cause in the overwhelming majority of cases and these usually require lifetime drug treatment and lifestyle modification. Individuals of African descent are generally seen to be at a higher risk compared to Caucasians. The WHO estimates 46% of adults aged 25 years and

older in sub-Saharan Africa are living with hypertension.

There is evidence that some cases of hypertension track from childhood to adulthood. Despite this, blood pressure data on populations below the age of 18 is generally scarce. Furthermore, there is paucity of up-to-date data on hypertension and its related risk factors in The Gambia.

For the study, published in the journal *Medicine*, Dr Modou Jobe, the lead author said “We were able to describe high blood pressure in this population from the age of 5 onwards as well as to construct population-specific reference percentile by age, sex and height in those below the age of 18. Three blood pressure readings were recorded for each individual and the average of the last 2 were used in our analysis”.

Commenting further on the study, Dr Jobe explained that separate definitions were used to define high blood pressure. “In those aged 5 to <18 years, high blood pressure was defined as the average systolic blood pressure and/or diastolic blood pressure that is ≥ 95 th percentile for sex, age, and age-sex specific height z scores in our own population. For those ≥ 18 years, this was defined as SBP ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg and/or receiving treatment for hypertension in the 3 months before BP measurement and/or being diagnosed as hypertensive in MRC Keneba clinical database. Data analysis was therefore done separately for the respective age groups”.

This study was conducted within the Kiang West Longitudinal Population Study in The Gambia covering 36 villages in Kiang West district. Relevant data for these analyses primarily originated from the Keneba Biobank with blood pressure, anthropometric and haematological measures, and questionnaire data collected between May 2012 and October 2014. Demographic and clinical data were available via linkage with the Kiang West Demographic Surveillance System (KWDSS) and Keneba Electronic Medical Records System (KEMReS) databases.

“The study included a total of 6,160 individuals of whom 3,637 were aged between 5 and 18 years and 2,523 were 18 years and older. This represents to our knowledge the largest study on high blood pressure across a healthy rural sub-Saharan population covering all ages above 5 years”, Dr Jobe said.

In this rural population, surprisingly high rates of blood pressure were found. In 5 to <18-year olds, the prevalence was 8.2% and was observed to increase with weight-for-height z score (zWT-HT) and decreased with age. The prevalence in this age category was comparable in females (7.9%) and in males (8.5%). In those aged 18 years or above, the prevalence of high BP was 18.3% and was found to increase with age, diabetes and increasing body mass index. The prevalence was slightly higher in females (18.9%) than in males (16.7%).

“We also compared our blood pressure cut-off reference values in the 5 to <18-year olds and found them to be lower than the US 4th Report norms, particularly in boys. We therefore consider our constructed reference standards to be more applicable to identify individuals with high blood pressure among Gambian children and adolescents”, Dr Jobe added.

Commenting on the significance of this study, Professor Andrew Prentice, head of the Nutrition theme at the MRCG said, “although this study gives a good insight within the Kiang West population, it would be important to see if similar findings are seen in other parts of the country”.

“The Keneba Biobank, through stored biological samples, offers us a unique platform to further understand drivers of high blood pressure especially in younger age groups in Kiang West. This understanding will help us devise better population-based strategies as there is growing evidence suggesting that hypertension in adulthood has its roots earlier in life”.

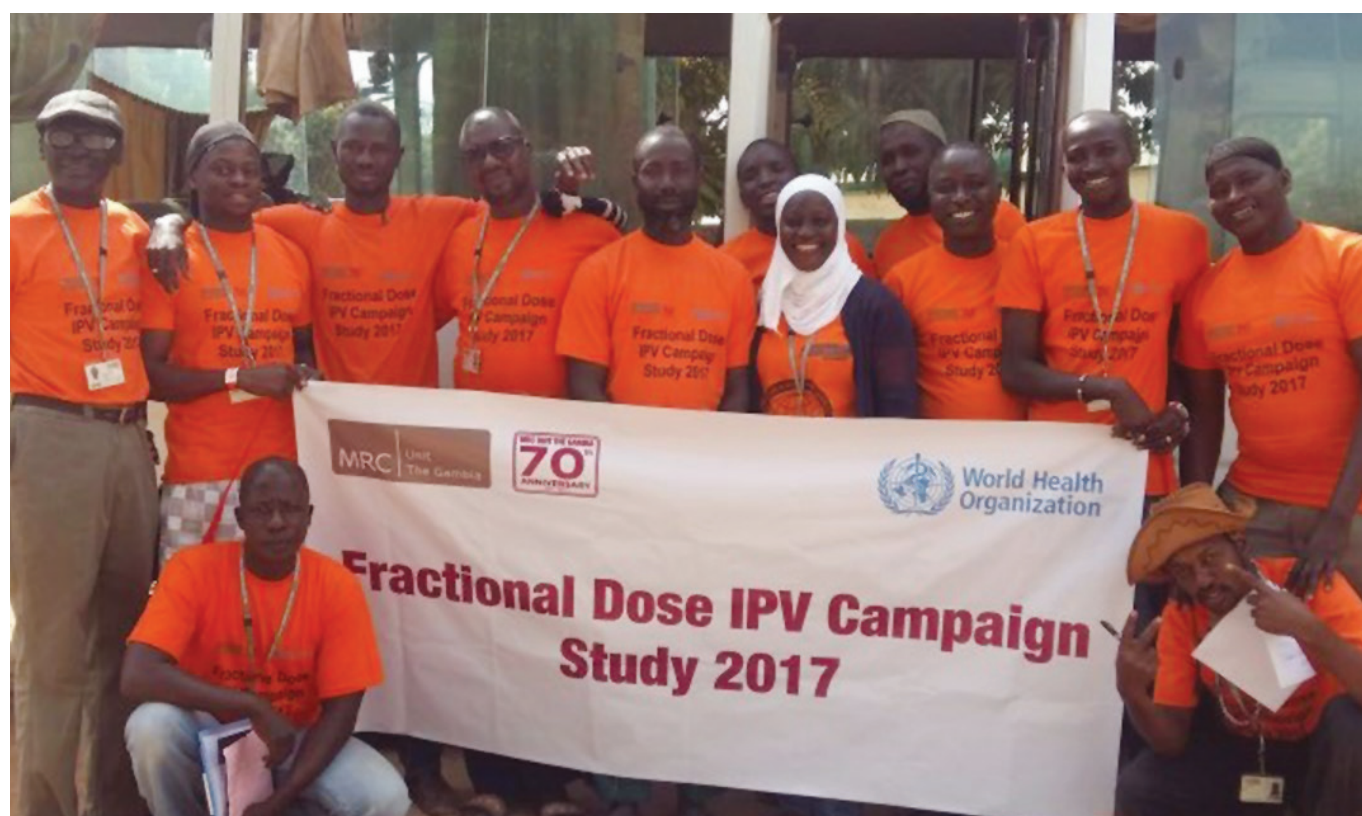
The Fractional dose inactivated poliovirus vaccine (IPV) campaign-based trial

The campaign-based trial vaccinated 2,720 infants and children intradermally in 3 days across all 6 sites

A community-based vaccination campaign trial, as part of the global effort to eradicate polio, was conducted by MRC Unit The Gambia in partnership with The Ministry of Health and Social Welfare and the WHO. The trial, which took place from September 2016 to March 2017, vaccinated 2,720 infants and children intradermally (ID) in 3 days across Bwiam, Sibanor, Bintang, Somita, Gunjur and Sanyang.

The trial compared 3 different methods of ID fractional Inactivated Poliovirus Vaccine (IPV) administration in children to assess the feasibility of using a one-fifth dose of IPV intradermal in a campaign setting for possible future outbreak response. A normal BCG needle and syringe was compared to an intradermal adapter device and a needle free jet injector. The time it took to administer each vaccine, the

number of vaccinations deliverable per hour, the number of fractional doses of IPV obtained from each vial, the size of the fluid bleb in the skin, the fluid loss onto the skin and the level of distress caused by each injection were just some of the endpoints measured. Immune response data will also be generated by the CDC laboratories in the US for later analysis by MRCG.



The MRCG team during the campaign-based trial in Somita

VACCINES AND IMMUNITY

The trial required a significant amount of coordination. Close to 100 people were involved in this trial to ensure the vaccination of 2,720 children, over 3 days across all 6 sites. This involved mainly MRCG workers, public health officers from the Ministry of Health, and community volunteers.

Coordinating field activities during the trial was very challenging as it occurred during the political impasse in The Gambia.

The provisional data which was generated during the recent 'Fractional Dose IPV Campaign-Based Trial', was

presented by Clinical Trial Coordinator and co-PI Dr Bashorun Adedapo during the 19th WHO Polio Research Committee meeting in Geneva on the 11th April 2017.



The MRCG team during the campaign-based trial in Bwiam

Enhancing the Shipment of Infectious Substances at MRC Unit The Gambia

The three-day International Air Transport Association (IATA) course at MRCG

Shipping infectious substances can be a daunting task, considering the multitude of requirements involved, such as, classification, packaging, marking, labelling, documentation, and safe handling. To ensure continued compliance with regulations for shipping infectious substances, MRC Unit The Gambia conducted a three-day International Air Transport Association (IATA) course from 23rd - 24th November 2016 at MRCG in Fajara.

The course is a requirement, approved by the United Kingdom (UK) Civil Aviation Authority and the International Civil Aviation Organisation (ICAO), for the shipment of category A and B samples by air, as MRCG regularly ships and receives samples to/from collaborators in different parts of the world.

The three-day course provided refresher training and reassessment for previously certified staff as well as the opportunity for new staff members to be trained. The training was facilitated by Nicholas Mohr, Dangerous Goods and Safety Adviser for Peter East Associates, UK. Thirteen (13) MRCG staff from Laboratory Services, Logistics and Health, Safety and Environment departments attended the training and all were successful in the subsequent assessment test required for certification.

At the end of the course, participants had gained the necessary skills to safely package potentially dangerous pathogens for shipment, correctly process the documentation, and reduce the risks of exposure to themselves and those that will encounter such shipments during transit.

The technical skills learnt from this training will also be utilised in the handling of biological sample shipments from The Unit, so as to:

- Reference the current infectious substances shipping guidelines based on the most recent IATA dangerous goods regulations manual.
- Apply the step-by-step workbook in conjunction with the current infectious substances shipping guidelines publication.
- Promote safe and efficient handling practices in the workplace.
- Facilitate shipments in compliance with the applicable regulations.



IATA air sample carriage logo and Peter East associates logo

The Implementation of a Joint Standard Operating Procedure (SOP) with the MRC Centre Cambridge Contracts team in The United Kingdom

Streamlining research contract review across council

The implementation of a joint Standard Operating Procedure (SOP) with the MRC Centre Cambridge contracts team in The United Kingdom has successfully streamlined research contracts review. This is the first joint SOP between MRC Unit The Gambia (MRCG) and the Medical Research Council Centre, Cambridge, United Kingdom and a step forward towards integrating council-wide support for researchers.

The SOP was instrumental in clarifying the responsibilities of parties involved and describing the review procedure between the local support services at MRCG, Principal Investigator's (PI) and MRC UK. This has resulted in reduced contract review times and means that projects can start earlier, samples can be transferred earlier and data can be sent earlier to our collaborators.

The SOP was facilitated by the MRCG Research Support Office (RSO) Theme Project Managers, Research Governance & Support Services Manager, Senior Contracts Manager (Cambridge) and Contracts Manager (Cambridge).

The joint SOP was developed in autumn 2016 and implemented in December 2016. In April 2017 its impact was reviewed to showcase success and share lessons learned in the process. In May 2017, feedback was provided to the Scientific Coordinating Committee (SCC) in The Gambia with preliminary data suggesting that review times have been nearly cut in half.

To enhance the SOP's effectiveness, review times will continue to be monitored and systems fine-tuned to make further efficiency gains aimed at achieving additional reductions in

review times for all MRCG's research contracts.

When asked about the recent reduction of review times and further plans for improvement, Dr Jonas Lexow, Research Governance & Support Services Manager at MRCG said, "Our researchers need to have the reassurance that their work is covered from a legal perspective and should expect a smooth contract review process. During the implementation of the new SOP we have learned that delineating responsibilities clearly and enhancing transparency are essential in delivering optimal support of our science."

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The Fight to Eliminate Malaria With Dr Joseph Okebe

Dr Joseph Okebe recently defended his PhD at University of Antwerp, Faculty of Medicine & Health Sciences, Belgium



Dr Joseph Okebe, Clinical Epidemiologist

Dr Joseph Okebe is a Clinical Epidemiologist with a strong interest in infectious diseases in childhood and a professional background in paediatrics. He recently completed his PhD from the University of Antwerp, Belgium and his thesis focused on the impact of interventions to reduce residual malaria transmission in The Gambia in the context of malaria elimination.

Dr Okebe joined the Malaria Programme of the MRC Unit The Gambia as a Research Clinician in 2005 and has grown to become a central member of the group. As a member of the Disease Control and Elimination Theme, Joseph has been involved in over eight projects, in a leading role across the country and actively contributes to scientific and grant writing.

During his PhD, Joseph Okebe gained important skills and in-depth knowledge of clinical research that are key elements for malaria elimination. Part of his research work included a randomized control trial evaluating the efficacy of Primaquine; recommended for use in low-transmission settings to reduce transmission of malaria. His supervisors were Professors Umberto D'Alessandro and Jean-Pierre Van Geertruyden.

Presently, he coordinates a cluster-randomized trial on a community-based approach to reactive treatment of asymptomatic malaria contacts to reduce parasite carriage.

He is involved with the Cochrane Infectious Diseases Group as an author and editor; producing systematic reviews that are essential for policies on health.

Dr Joseph Okebe has several peer-reviewed publications and has presented his research findings at major international conferences.

When asked about the principles of being a strong researcher, Joseph said, "I believe that a good understanding of research principles is important to asking the right questions and the approach needed to answer them. The MRCG is the place for this".

Dr Adedapo Bashorun - a Rising Star within the Vaccines and Immunity Theme

In 2014, Dr Bashorun was awarded a prestigious MRCG-funded MSc in Epidemiology at the London School of Hygiene and Tropical Medicine (LSHTM).



Dr Adedapo Olufemi Bashorun, Clinical Trial Coordinator

Dr Adedapo Olufemi Bashorun is a Clinical Trial Coordinator working in the Vaccines and Immunity Theme, at MRC Unit The Gambia (MRCG) and has a strong interest in preventive medicine. His professional background is in general medical practice and he has more than four years research experience in clinical vaccine trials. Since joining MRCG in 2011, Dr Bashorun has worked and contributed immensely to the success of multiple projects at The Unit.

Dr Bashorun first came to MRCG as a medical student on an internship from Lagos State University College of Medicine in 2006. He graduated as a medical doctor in 2007 and returned to MRCG in November 2011 as a research clinician and team leader in the nationwide Gambian survey of tuberculosis prevalence (GAMSTEP). While in The Unit, Dr Bashorun worked briefly in the Pneumonia Etiology Research for Child Health (PERCH) observational study in Basse before entering the field of clinical vaccine trials. He first worked at Faji Kunda on the Bill & Melinda Gates funded Inactivated Poliovirus Vaccine (IPV) trial before moving on to the phase 1/2 10-valent pneumococcal-conjugate-vaccine (PCV10) trial. Recently Dr Bashorun served as a co-investigator and clinical trial coordinator on the WHO funded fractional IPV (fIPV) campaign study.

According to Dr Bashorun, the fIPV trial was a short, intensive, and very challenging study conducted during

the period of the political impasse in The Gambia. During the study 3,189 under-5 year old children were recruited over three to four months in five main sites (Somita, Sibanor, Bwiam, Gunjur and Sanyang). The team subsequently vaccinated 2,720 of these children over 3 days across these sites. "This so far, has surpassed all the trials that I have been a part of, in terms of its complexity and uniqueness," he added. Given the key importance of the results generated to the global polio eradication initiative, within only a few weeks of completing the trial Dr Bashorun presented the provisional results to the WHO polio research committee at a meeting in Geneva.

When asked to comment, Ed Clarke, Head of Infant Immunology said, "Dapo has without doubt played a key role in the success of all the vaccine trials on which we have worked over the last 4 years. His exceptional ability to coordinate the activities of a very large field team were exemplified during the recent fIPV trial which involved a team of well over 100 people, working to an extremely intensive schedule. While firm when necessary, he is also both extremely well liked and respected by everyone who works with him. All these skills will certainly be needed during the phase 3 PNEUMOSIL vaccine trial on which he is the clinical trial coordinator. I am very confident that his passion, organisational and team management skills, combined with the research training he has gained during his MSc will ensure that he has a bright academic future ahead."

Lamin Sillah a Product of MRCG's Commitment to Train Young Africans to Become Scientists

Lamin Sillah is contributing to the building of a strong Genomics Lab at MRCG



Lamin Sillah, Scientific Officer, Genomics Lab

Lamin Sillah is a Scientific Officer working in the Genomics Laboratory with a strong interest in next-generation sequencing techniques and their application in infectious diseases research. He is a product of the Unit's commitment to training young Africans to become scientists. His dual skills in molecular techniques and basic bioinformatics are precisely suited to the Genomics platform.

Lamin was recruited to MRCG in 2001 as a high school graduate. In 2005, he did a certificate course in Biomedical Sciences organised in-house by the MRCG, then in 2007, proceeded to his diploma in biomedical sciences, by distance learning, with the University of Westminster.

Later he was successful in obtaining a 3 year BSc scholarship funded by the MRC Foundation (MRF), to study Biomedical Sciences at the University of Manchester. He has recently completed an MSc in Medical Microbiology at the London School of Hygiene and Tropical Medicine (LSHTM) and has now been appointed Scientific Officer at the Genomics Lab.

Lamin's MSc was a practically-oriented course, which aimed to impart skills in clinical diagnostics and in recent molecular developments in the diagnosis of bacteria and viruses. Lamin's core modules in bacteriology and virology included advanced training in molecular biology and recombinant techniques,

molecular biology research progress and applications. The course aligns with both the present and future research interests of the MRCG as it teaches the understanding and diagnosis of pathogens involved in infectious diseases with a research-oriented approach. It also incorporates significant practical lab work and the acquisition of bioinformatics skills applicable to the rapidly increasing molecular approach to biomedical research.

According to Lamin, "No one achieves anything worthwhile without the significant contribution from others." He added that he is grateful to his family for their unfailing love and to the MRCG for the opportunities they have and are providing to many aspiring African scientists in The Unit.

Lamin hopes to contribute to the building of a strong and efficient Genomics Laboratory and looks forward to undertaking a PhD which will lay a strong foundation in his future research career.

Dr Nuredin Mohammed is shaping MRC Unit The Gambia's Statistics Department

Dr Mohammed is committed to contributing more towards the bioinformatics work in The Unit.



Dr Nuredin Mohammed, Biostatistician

Dr Nuredin Mohammed joined MRCG as a Biostatistician in August 2016. Before joining The Unit, he worked as a research fellow for the National Institute for Health Research (NIHR) design services at the University of Birmingham where he completed his PhD training. His thesis looked into the potential acute health effects of air pollution in time series studies in relation to daily changes and short-term exposure patterns.

After leaving the University, he was offered an Honorary Research Fellowship (HRFs) and collaborates with scientists with diverse interests including occupational and environmental epidemiology and analysing large data

sets such as the UK Biobank data. He has also supervised postgraduate students.

Nuredin is not new to The Unit. He spent his Tropical Epidemiology Group (TEG) / London School of Hygiene and Tropical Medicine (LSHTM) fellowship at MRCG in 2010 after completing an MSc in Medical Statistics at the LSHTM. Previously he qualified in statistics from Addis Ababa University and worked for the Central Statistics Office in Ethiopia.

His Biostatistician role at The Unit involves helping scientists in the design, analysis and preparation of scientific reports for clinical, epidemiological and laboratory-based studies. In addition, he contributes to the development of research proposals/ protocols by providing statistical expertise and leads statistics training for staff and postgraduate students based in The Unit.

Dr Mohammed is involved in various studies including clinical trials and cohort studies such as the Iron Hydroxide Adipate Tartrate (IHAT) trial, Influenza Vaccine Immunogenicity and Associations With the Nasopharyngeal Microbiome Among Children in the Gambia (NASIMMUNE) trial and the Pneumococcal Surveillance Project (PSP).

Providing statistics training for staff and students was one of the priorities when Nuredin joined the statistics department. Together with Dr David Jeffries and other colleagues, he has organised and

run seven training sessions. Each session was a day and half long and required considerable preparation including writing the necessary course materials and setting up the statistics software. The course reviewed basic concepts and covered common analytical methods in statistics with practical demonstrations using Genestat and Minitab packages.

The training sessions were run in all three main MRCG stations including Fajara, Basse and Keneba. The course received excellent reviews from more than 55 participants who attended so far and additional topics will be covered in the future. Sitting in the higher degrees committee, Nuredin also provides guidance to PhD students on the relevant statistics training they may need as part their studentship.

Nuredin is interested in the application of statistical / mathematical methods in medical research and committed to spend some of his time in training staff and students. He also enjoys programming and plans to contribute more towards the bioinformatics work of The Unit.

Commenting on Dr Mohammed, Dr David Jeffries, Statistics Manager said, "Nuredin brings important research skills based on longitudinal data to the unit. Additionally being a relatively recent post-doc he is in a good position to take a leadership role in the training of master's and PhD students and sit on the higher degrees committee."

Dr Modou Jobe aims to understand the link between metabolic problems and cardiovascular diseases

Dr Jobe is a promising Clinician-Scientist involved in numerous on-going and planned studies (MEDiUM, RiboBP and PRIMORDIAL in submission).



Dr Modou Jobe, Clinician-Scientist, Nutrition Theme

Dr Jobe's research interests are in the epidemiology and prevention of cardiovascular disease, especially in developing countries. He is seeking to understand the link between metabolic problems like obesity and insulin resistance, and the development of cardiovascular diseases. His current project, a randomised placebo-controlled trial, is a recall-by-genotype study which seeks to investigate the effect of riboflavin supplementation on blood pressure and possible effect modification by MTHFR C677T genotype.

Dr Jobe joined the MRCG as a Wellcome Trust Masters Fellow in Public Health and Tropical Medicine in September 2014 under the supervision of Professor Andrew Prentice to undertake an 18-month research project to investigate which of several mechanisms represents the most likely route(s) by which metabolic endotoxaemia leads to insulin resistance and diabetes.

He was one of the earliest cohort of doctors to emerge from the University of The Gambia (UTG) medical school. Subsequently, he went on to obtain a Diplôme d'Études Spécialisées (DES) de Cardiologie (Postgraduate Specialist Diploma in Cardiology) at Université Cheikh Anta Diop in Dakar, Senegal. He has also obtained an MSc in Epidemiology from the London School of Hygiene and Tropical Medicine.

Dr Jobe is currently coordinating the non-communicable diseases (NCD) task force of the West African Global Health Alliance (WAGHA). He is bringing together a large team of professionals working in diverse areas and hoping to improve prevention and care in the developing world through high quality basic and translational research.

He has several peer-reviewed publications and has presented his research findings at major international conferences.

Leading health research in West Africa to save lives and improve health across the world

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