



Annual Report 2014

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FOREWORD



Unit Director,
Professor Umberto D'Alessandro

I am happy to inform that the Unit has done extremely well in this challenging year. The year 2014 has been one of change, with the integration of the Nutrition group headed by Professor Andrew Prentice within the Unit, and the merging of the Child Survival Theme into the Disease Control and Elimination Theme. We also reviewed our research activities and finalised our Quinquennial plan, which now covers the period 2016-2021. It is our intention to build on past achievements and to contribute, over the next 5 years, to the post-2015 sustainable development agenda by producing the evidence base to improve health in West Africa and beyond. Besides continuing to contribute to the control/elimination of infectious diseases of public health importance in West Africa and sub-Saharan Africa, we want to address the unacceptably high burden of maternal and neonatal mortality. The integration of the Nutrition group as a research Theme in the Unit offers fantastic opportunities for interacting with the other two Themes and dealing with nutrition-related diseases.

Non-communicable diseases (NCD) (cardiovascular diseases, mental illnesses, trauma, cancer, and diabetes) are now major sources of morbidity and mortality in sub-Saharan Africa, and they will probably overtake infectious diseases by 2030. For this reason, we plan to promote and strengthen research on NCD associated with infections.

We have been able to secure competitive grants, according to our established target and to produce, between April 2014 and March 2015, the highest number of scientific publications (157) over the last 10 years. These achievements have been possible thanks to the high quality and commitment of the MRC Unit, The Gambia staff, scientists and support staff alike, excellent laboratory facilities and easy access to the field, excellent clinical services, rigorous ethical procedures and ability to deliver GCP-compliant clinical trials.

Our relations with the Gambian Ministry of Health and national control programmes are excellent as our contribution to health research, healthcare provision and training within the country remains substantial. I would also like to mention our contribution to the efforts deployed by the Ministry of Health to prepare the country to deal with the risk of the Ebola epidemic that unfortunately is still ongoing in Guinea and Sierra Leone. We have participated since its beginning to the National Ebola Virus Disease Task Force, trained health workers on the use of personal protection equipment and management of patients, set up a diagnostic lab and an isolation ward in our clinical services.

Our commitment to capacity building and training of young scientists has continued. We would like to invest more in early-career scientists and mentor them towards becoming independent and world-class researchers. Overall, we would like to create a stimulating and favourable environment for exchanging and developing ideas and for the optimal implementation of research at the highest possible quality. In addition, we will increase our network of collaborations in West Africa. We are already carrying out several multi-country research projects. Besides these, we will try to develop more profound collaborative links with sister institutions in the West African Region, with exchange of staff, trainees, technical expertise, etc.

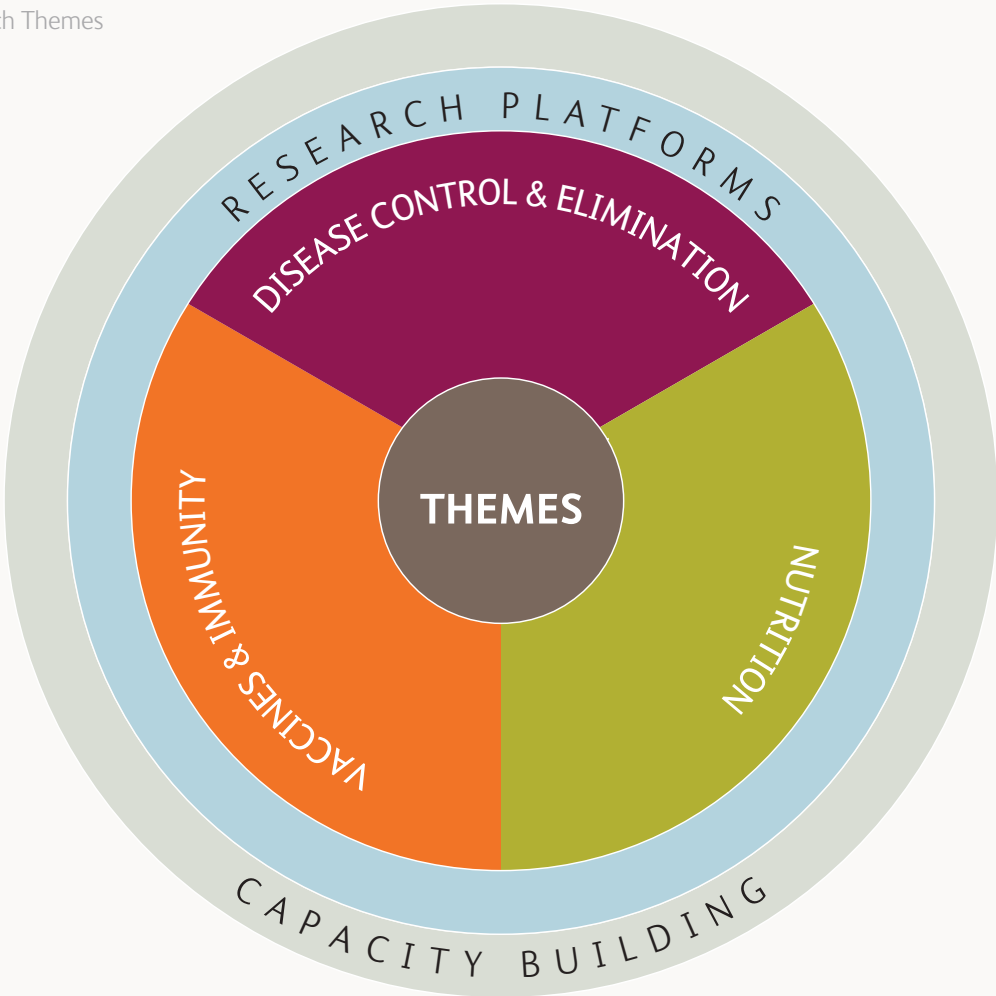
Over the last 68 years, the Unit has tackled major infectious diseases of global public health importance in sub-Saharan Africa. Its research output has been used to implement interventions that have had (and continue to have) a major impact on childhood mortality and morbidity, not only in The Gambia but also in other sub-Saharan African countries. Examples are the Unit's pioneering work on insecticide-treated bed nets, vaccines against *Haemophilus influenzae* type b and hepatitis B, prenatal dietary supplementation, pneumococcal conjugate vaccines, azithromycin mass administration against trachoma, and seasonal malaria chemoprevention. Current and future achievements need to be communicated efficiently to all stakeholders, including the Gambian people. I believe it is important to promote scientific research as a major contributor to development. In the next few months, we will revise and strengthen our communication strategy and activities so that as many people as possible are informed of the Unit's ongoing activities.

In conclusion, we should be proud of what has been achieved in 2014 and I would like to thank all the staff for their support and contribution.

A handwritten signature in black ink, appearing to read 'U. D'Alessandro'.

The MRC Unit, The Gambia works to a vision of “leading scientific research to save lives and improve health across the developing world”. We continuously monitor our progress, productivity and the quality of output to enhance both impact and learning. This report gives a summary of key outputs and outcomes as well as highlights of the year 2014.

Figure 1:
Research Themes



The Unit now has three Themes; Disease Control and Elimination, Nutrition and Vaccines and Immunity

GRANTS AND FUNDERS

Science funding is now obtained through competitively peer reviewed sources. The Unit's work has continued to attract international reputation and funding. In 2014, the Unit won 10 new grants with a cumulative budget of over £6million. Income target for the financial year has continued to be surpassed as detailed in Figure 2. Funding had been achieved from various donors as indicated in Figure 3. Showing top ten donors for 2014

HIGHLIGHTS OF MAJOR GRANTS WON

PROJECT	LEADER	DESCRIPTION
PCV 10 vaccine Trial	Dr Ed Clarke, Professor Beate Kampmann	This grant was awarded by PATH. It is a Phase1/2 trial assessing the safety, tolerability and immunogenicity of the PCV 10 vaccine. The trial is taking place at the Jammeh Foundation for Peace Hospital.
Rota Virus Effectiveness Study	Dr Jahangir Hossain	With the successful introduction of the Rota Virus vaccine into the routine immunisation schedule in The Gambia, this multi-centre trial will be assessing the effectiveness of the vaccine and its impact on diarrhoea. The study takes place in Basse.
Improved Housing	Professor Steve Lindsay, Professor Umberto D'Alessandro, Dr Margaret Pinder	This study in The Gambia is looking at providing improvements on the housing of rural Gambia as a malaria control strategy. Quite an innovative study which is attracting a great level of attention. The study takes place in Basse.

Figure 2:
Unit Attraction of Funds

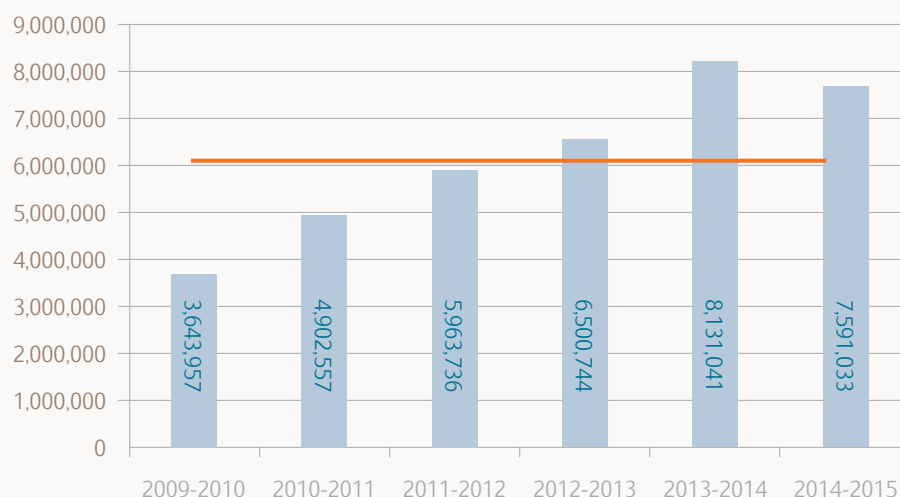
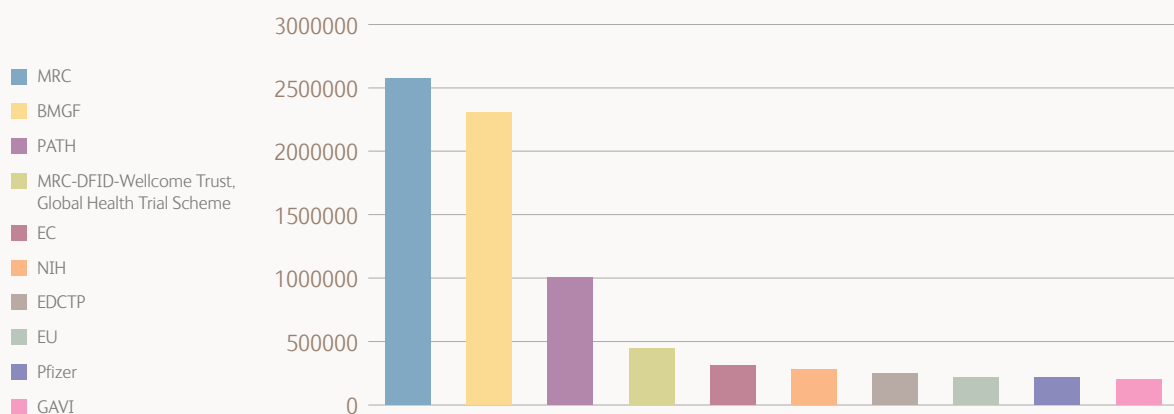


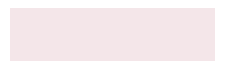
Figure 3:
2014-2015 Donor Profile



RESEARCH THEMES



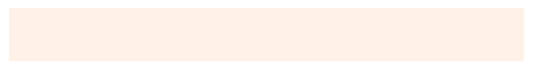
DISEASE CONTROL & ELIMINATION



NUTRITION



VACCINES & IMMUNITY



DISEASE CONTROL & ELIMINATION

SCIENTIFIC STRATEGY



Theme Leader & Unit Director,
Professor Umberto D'Alessandro

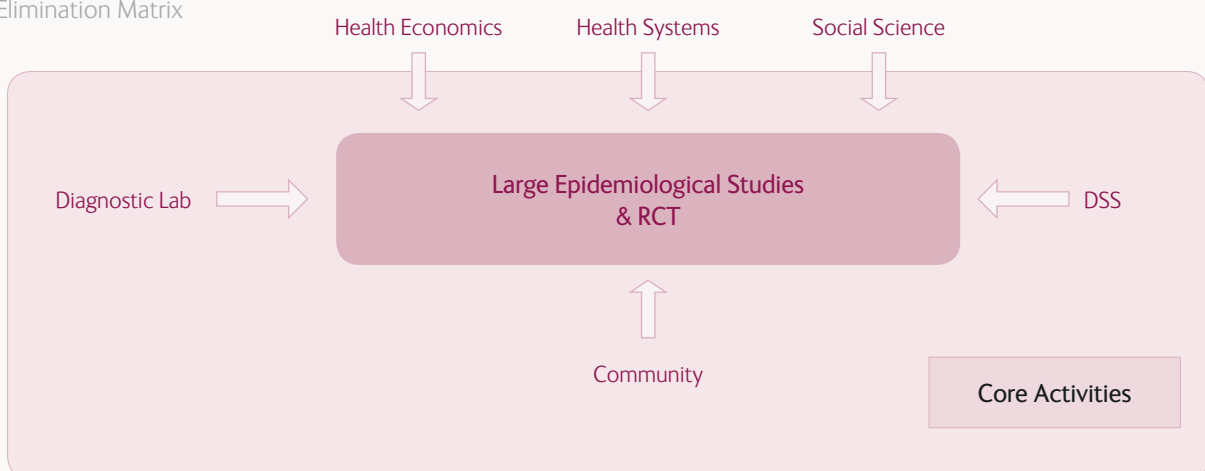


Theme Co-ordinator,
Dr Anna Roca

Disease Control and Elimination (DCE) scientific strategy focuses on investigating the interactions between hosts, pathogens and vectors; and evaluating interventions aimed at interrupting transmission and/or reducing the disease burden.

The multidisciplinary DCE approach comprises a large epidemiological component combined with strong laboratory (mainly diagnosis) support. Whenever possible, the core component of epidemiology and laboratory sciences is complemented, by social sciences, health system and health economic research components with the aim of prompt translation into practice.

Figure 4:
Disease Control and Elimination Matrix



Interactions between disciplines within the DCE Theme. RCT=Randomized Clinical Trials.

RESEARCH ACHIEVEMENTS

RESEARCH ACTIVITY	ACHIEVEMENT
Malaria	A new grant proposal with the Global Health Trials Scheme was obtained in 2014. The RooPfs Study aims at assessing whether improved housing reduces further the burden of clinical malaria where coverage of Long Lasting Insecticidal Nets (LLIN) is high.
Bacterial Infections	The PregnAnZI trial aims at determining the efficacy of azithromycin given to women in labour in preventing bacterial carriage in the neonate. By the end of 2014, trial participants had been recruited and follow up finished. Results proved that the intervention halves bacterial infection in the babies (a necessary step for disease) and the mothers during the entire neonatal period (Roca et al under review) and at the same time decreases clinical episodes of infection in both babies and mothers for at least 8 weeks.
Hepatitis B	The follow up of the Gambia Hepatitis Intervention Study (GHIS) is reaching an end. The main goal of this study, which has been active for more than 30 years, is to evaluate the effectiveness of infant hepatitis B immunisation in preventing chronic liver disease later in life. The PROLIFICA project (Prevention of liver fibrosis and cancer in Africa), funded by the European Union Seventh Framework Programme (FP7) and supported by the MRC UK, has recruited approximately 150 patients that need oral Tenofovir treatment. The cohort follow up is ongoing.
Trachoma and Tuberculosis	The nationwide TB prevalence survey, funded by the UN Global Fund showed that the TB prevalence in The Gambia is four times lower than the WHO estimates with evidence of clustering (Adetifa et al., submitted). The Trachoma group (externally lead) can estimate the transmission of infection through antibodies now that Trachoma has been virtually eliminated from The Gambia.

SEVERAL MALARIA STUDIES CONTINUE FROM THE PREVIOUS YEAR

MALARIA STUDY	SUMMARY
MRC Programme Grant of Malaria transmission dynamics (MRC UK funded)	In 2014, mass drug administration was completed, followed by monthly sampling and passive detection during the transmission season. In parallel, entomological and social science components (human population movements) have been carried out.
Infant malaria (MMV Study)	The project on the burden of malaria in infants under 6 months funded by Medicine for Malaria Venture has been recently published (Ceesay et al 2015).
PRINOGAM Trial	(Primaquine's gametocytocidal efficacy in malaria asymptomatic carriers treated with dihydroartemisinin-piperaquine), funded by the Global Health Trial Scheme, finalised recruitment in 2014 and data analysis is ongoing. Trial results are expected by the end of 2015.
The Multicentre COSMIC	(Community-based scheduled screening and treatment of malaria in pregnancy for improved maternal and infant health: a cluster-randomized trial), funded by the EU, aims at bringing health services closer to where women live. Participant recruitment and laboratory analysis (placental slides) are ongoing.
ICEMR Study	(International Centers of Excellence for Malaria Research) is a multi-country project with different components, including: (i) the epidemiology of malaria and its vectors pre and post transmission season; (ii) understanding host acquired immunity and factors that impact on malaria pathology; and (iii) characterizing drug and insecticide resistance for the parasite and vector populations. Laboratory analysis of these components is ongoing.

RESEARCH PROJECT ACHIEVEMENTS FROM THE FORMER “CHILD SURVIVAL THEME”

RESEARCH PROJECT	ACHIEVEMENT
Haemophilus influenzae type b (Hib) surveillance	Following the resurgence of invasive Hib disease cases in the Eastern region of The Gambia in 2011-13, a surveillance of Hib meningitis covering the whole Western Region was initiated in 2014. The results of this study will help determine whether a booster dose of Hib vaccine will be required in The Gambia and other countries in Africa.
Pneumococcal Surveillance Project (PSP)	The surveillance to determine the impact of the introduction of Pneumococcal Vaccine (PCV) in The Gambia is ongoing. Preliminary results shows that following the introduction of PCV7 (2009) and PCV13 (2011) there has been substantial reduction of PCV7 type invasive pneumococcal disease and radiological pneumonia in children 2-23 months of age. The surveillance will continue for assessing the indirect impact in older children and adults.
Vaccine Impact of Diarrhoea in Africa (VIDA)	Following the evidence generated by the Global Enteric Multicenter Study (GEMS) that five pathogens (including rotavirus) are responsible for most of the burden of moderate-to-severe diarrhoea (MSD), The Gambia introduced rotavirus vaccine in 2013. VIDA is a multi-country study conducted in three sites in sub-Saharan Africa, aiming at assessing the effectiveness of rotavirus vaccine against MSD. The study will measure the impact of the introduction of the vaccine on the incidence of MSD, its aetiology and adverse clinical consequences.
Novel Oxygen Solutions to Prevent Child Pneumonia Deaths	The aim of the project is to develop and field-test robust oxygen delivery systems for developing countries. The project is currently focused on bench testing and demonstrating success in the field of selected prototypes for the solar system.
EUCLIDS	(European Union Childhood Life-threatening Infectious Disease Study) assesses the genetic basis of meningococcal and other life-threatening bacterial infections during childhood. The study has been actively engaged at various hospitals including the MRC and EFSTH wards and is progressing well with recruitment.

FELLOWSHIPS FROM THEME MEMBERS IN 2014

INSTITUTION	FELLOW
West African Fellowship	Dr Antonie Claesens
EDCTP master's fellowship	Dr Ngoizi Moneke
Imperial College Fellowship	Dr Gibril Ndow

OUTLOOK FOR 2015

After an excellent year, we have now many challenges ahead. An important one is maintaining high rates of success in attracting competitive grants and maintaining the increasing trend of gaining pre and post-doctoral fellowships. Very important is the smooth integration of key staff and projects previously included in the Child Survival Theme. We believe that with them we have become more balanced in terms of the pathogens included in our portfolio (malaria, bacterial and viral pathogens) and we have spanned the scope of our research from surveillance to impact. During the coming years we expect to broaden our work with a major focus on maternal and neonatal health, with novel ideas as well as the participation to international consortia. Very importantly, we have to ensure diffusion of our results.

NUTRITION

SCIENTIFIC STRATEGY



Theme Leader, Nutrition
Professor Andrew Prentice

The nutritional challenges of poorer people in sub-Saharan Africa and beyond are many and complex. Our strategy is to focus on areas where there is both a high global burden of disease and a tractable research agenda that could lead to transformative interventions for mothers and children.

RESEARCH ACHIEVEMENTS

The MRC International Nutrition Group (MRC ING) (based at LSHTM and MRC Keneba) achieved a successful quinquennial review at the end of 2013 and a supplementary council award for epigenetics in 2014. During this process ING became fully integrated into MRC Unit The Gambia. This transition will encourage greater collaborative linkages and a wider geographical reach for nutrition studies than the former concentration on Keneba. Professor Prentice has joined the Leadership Board and now heads the Nutrition Theme.

The Nutrition Theme had many significant achievements in 2014 but perhaps the most notable was the publication in *Nature Communications* of first-in-human demonstration that maternal nutritional status at the time of conception affects the epigenome of the baby with likely lifelong implications across a broad range of health outcomes. This work, led by Paula Dominguez-Salas and Branwen Hennig in collaboration with colleagues from around the world, exploited the natural experiment created by the wet/dry season divide in rural Gambia that affects the foods consumed. Their paper achieved worldwide media coverage and remains in the 99.9 percentile of impact for *Nature* journals.

The large ENID (Early Nutrition and Immune Development) Trial completed the final collection point for the main trial at the beginning of 2015. This Randomised Controlled Trial (RCT) of pre-natal dietary supplementation has primary immune outcomes in the infants but has also become a scaffold on which numerous additional studies have been built: ENID Growth, ENID Placenta, ENID Bone, ENID Breast-milk bioactives and others. Among publications starting to emerge from ENID we have reported that aflatoxin exposure in pregnancy has a measurable impact on the infant epigenome especially in regard to the IGF axis that regulates growth.

Another major co-authored publication in *Nature Communications* led by colleagues at the University of North Carolina has made important progress in explaining why iron supplementation increases children's susceptibility to *Plasmodium falciparum* malaria. The results indicate a transient susceptibility due to the parasites greater avidity for, and growth in, reticulocytes and young red blood cells. The implications of this transient increase in risk are that iron supplementation should be given under the cover of antimalarials.

The HYPO-G study led by Sarah Prentice investigated the hypothesis that administration of *Bacillus Calmette–Guérin* (BCG) vaccination on the day of birth protects against neonatal infections by eliciting a hepcidin-mediated hypoferremia. The study found no evidence for a differential response in vaccinated or unvaccinated babies but importantly showed that all babies undergo a profound hypoferremic response immediately post-partum.

INTERNATIONAL COLLABORATIONS

Nutrition Theme studies out of MRCG are characterised by multiple international collaborations. This is typified by our recently-awarded MRC grant to interrogate the functional consequences of loss of imprinting at the immune-regulatory/tumour suppressor locus VTRNA2-1 which involves collaborators from the Universities of Baylor College of Medicine, Harvard, Galveston, British Columbia, North Carolina, Cornell, Cambridge and Luxembourg.

OUTLOOK FOR 2015

We have been extremely fortunate that our epigenetic research exploiting the season-of-conception model in Keneba has given us high visibility in the field of epigenetics and promises further breakthroughs in 2015 and beyond. It is our conviction that nutritionally-modifiable stochastic variations in how the methylome is established in the very early embryo may provide clues to the etiology of numerous developmental aberrations. This points to a potentially major breakthrough whereby improving the diets of women before they conceive a baby could yield broadspectrum and lifelong health benefits. Pursuing this question is our major target for 2015.

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Dominguez-Salas et al (2014) Maternal nutrition at conception modulates DNA methylation of human metastable epialleles. *Nature Communications*. DOI 10.1038/ncomms 4746.

Hernandez-Vargas H, Castelino J, Silver MJ, Dominguez-Salas P, Cros MP, Durand G, Calvez-Kelm FL, Prentice AM, Wild CP, Moore SE, Hennig BJ, Herceg Z, Gong YY, Routledge MN. Exposure to aflatoxin B1 in utero is associated with DNA methylation in white blood cells of infants in The Gambia. *Int J Epidemiol*. 2015. pii: dyv027.

Clark et al (2014) Host iron status and iron supplementation mediate susceptibility to erythrocytic stage *Plasmodium falciparum*. *Nature Communications*. DOI 10.1038/ncomms 5446.

Prentice et al (2015) The effect of BCG on iron metabolism in the early neonatal period: a randomized controlled trial in Gambian neonates. *Vaccine* 33: 2963-7.

VACCINES & IMMUNITY

SCIENTIFIC STRATEGY



Theme Leader,
Vaccines & Immunity,
Professor Beate Kampmann

The Vaccines & Immunity (VI) Theme works towards understanding of the ontogeny of immunity to inform the design of vaccines and maximise their impact. We continue to develop our portfolio of discovery and delivery science and projects around this ambition.

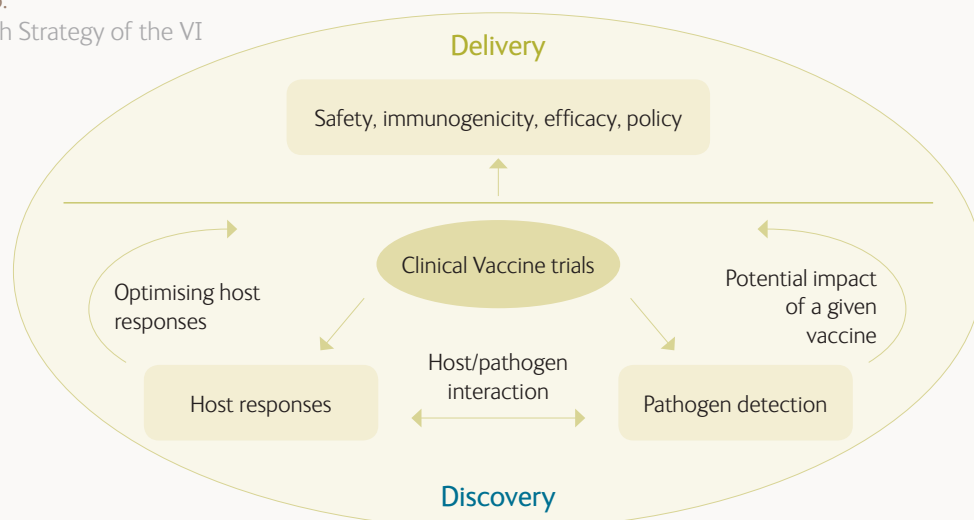
Using the core support structures and the diversity of skills of the leading investigators within the Theme, we place the following questions at the centre of our work:

- What kind of immune responses should vaccines elicit to induce maximal protection?
- Which vaccines are safe, immunogenic and effective in the long term in resource poor settings and how are they best used within the EPI program?

Through laboratory science and clinical trials we aim to contribute to the evidence based development and delivery of vaccines.

Clinical trials of existing and novel vaccines and longitudinal observational cohort studies, including entire households and mother/infant pairs serve as a platform to investigate host responses in individuals of different ages and to dissect the interactions between host and pathogen in the context of vaccination and natural infection.

Figure 5:
Research Strategy of the VI
Theme



RESEARCH ACHIEVEMENTS

The Vaccines & Immunity Theme has continued to competitively attract and deliver an impressive portfolio of clinical vaccine trials that includes those sponsored and/or funded by the MRC Unit The Gambia, by other academic institutions (e.g. University of Oxford), by not-for-profit organisations (BMGF and PATH), and by commercial vaccine manufacturers such as GSK Biologicals and Pfizer. The trials range in scale from small, first in children, phase 1 trials (HIV, TB, malaria) with fewer than 100 subjects, through to large phase 3/4 studies enrolling 1,500+ infants (polio).

Accompanying laboratory work has included measurements of serological endpoints as well as cell-mediated immunoassays via ELISpot and multicolour flow cytometry. We also carried out the first clinical trial of a protein-based pneumococcal vaccine in 1,320 participants, with safety and immunogenicity as primary endpoints. We have determined the longevity of the immune responses following low-cost conjugated vaccine against meningococcus A (MenAfriVac) five years after the primary vaccination and showed that serological responses were dependent on pre-existing antibody titres, indicating the need for vaccination in infancy and a possible booster dose. This vaccine is now introduced into the EPI schedule in The Gambia.

The Vaccines & Immunity Theme undertook a series of translational and more fundamental immunological studies aiming at understanding the development of the immune system in infancy, particularly in the context of bacterial colonization, for example with Group B streptococci or pneumococci and infectious diseases. This includes the effect of the bacterial colonisation of the nasopharynx in the first months of life on an infant's immune development, and the interaction between the microbiota in the nasopharynx and the immune system.

Our TB research focuses on the identification of correlates of protection in adults and children in order to ultimately inform TB vaccine design. Several promising biomarkers have been derived from cytokine, metabolomics and transcriptomic signatures generated from the well characterised individuals available through the Tuberculosis Case-Contact (TBCC) platform. A biosignature in adults able to distinguish between active TB and other respiratory diseases and in the context of HIV infection has been published and the patent has already been filed and the childhood biosignature is undergoing evaluation at present. The evaluation of novel diagnostics is important in the context of understanding protective immunity for vaccine development, as reliable diagnostic tools are needed during the conduct of TB vaccine trials.

IMPACT OF OUR RESEARCH AND COLLABORATIONS

Vaccines & Immunity research output continues to have a major impact on both vaccine and TB-related public health policies. Vaccine studies conducted by MRCG continue to inform policy makers' vaccine deployment strategies; for example, the MenAfriVac study confirmed the safety and immunogenicity of this vaccine, which was introduced by the Government of The Gambia into the vaccine schedule in late 2013. A large GAVI-endorsed trial on 13-valent conjugated pneumococcal vaccine, single-dose preparation versus a new multi-vial preparation, sponsored by Pfizer, is now completed and will lead to licensure of the new formulation in the very near future. Similarly, the results of a trial studying the potential interference of intramuscular polio vaccine (IPV) with EPI vaccines given to over 1,500 nine-month-old Gambian infants via routine and alternative delivery devices has been reported to the Strategic Advisory Group of Experts (SAGE) committee to provide essential information for the polio endgame decisions. As a result of the childhood TB research program, the notifications of childhood TB by the National Leprosy and Tuberculosis Programme (NLTP) have increased from 4.3% to 6.8% nationally and our TB researchers are directly contributing to shaping up the next application to the Global Fund and National TB program in collaboration with the NLTP. The evaluation of TB diagnostics at the MRCG has contributed to the WHO guidelines for use of these assays in resource-poor settings.

OUTLOOK FOR 2015

Our new clinical trials in 2015 will include immunisations given to pregnant women, which we consider a potentially very useful tool to protect newborn babies through the gift of antibody from their mothers. We still need to make a bigger impact on neonatal illness and this might be one way to achieve it.

We will also expand our good collaborations with the National TB Program to deliver a teaching intervention for childhood TB, which will go beyond the Greater Banjul area. As always, we do require the link to state-of-the-art technologies and platforms, particularly in molecular methods and data analysis in order to stay at the top of our game and we look forward to the MRC support for our ambitions.

PLATFORMS AND RESEARCH SERVICES



EDWARD FRANCIS SMALL TEACHING HOSPITAL 

WEST AFRICA COLLABORATION 

HEALTH & DEMOGRAPHIC SURVEILLANCE 

CLINICAL TRIAL SUPPORT 

CLINICAL SERVICES 

LABORATORY SERVICES 



EDWARD FRANCIS SMALL TEACHING HOSPITAL PLATFORM



Head of Paediatrics
Dr Kalifa Bojang.

The Edward Francis Small Teaching Hospital, is the main referral hospital in the country and it functions as a main teaching base for the School of Medicine and Allied Health Sciences of The University of The Gambia. The paediatric unit has 93 beds and admits about 4000 patients annually with bed occupancy of over 130% during the rainy season. Major causes for admission include severe malaria, acute respiratory infection, malnutrition, septicaemia, meningitis, and gastroenteritis.

SCIENTIFIC FOCUS

MRC Unit, The Gambia contributes to the development of effective means of prevention, diagnosis and management of diseases responsible for significant morbidity and mortality in the paediatric population, by carrying out research aimed at developing new diagnostic, preventive and therapeutic tools, and understanding the disease burden.

CAPACITY BUILDING

The Paediatric Department provides training for student nurses, medical students, house officers and postgraduate doctors. EFSTH is now a site for the primary exams for the Diploma of fellowship of West African College of Physicians.

THE SCHOOL OF MEDICINE AND ALLIED HEALTH SCIENCES

The School of Medicine and Allied Health Sciences was established in 1999 as one of constituents Colleges of the University of The Gambia and remains the country's only Medical school (<http://www.utg.gm>). Medical and nursing students spend part of their clinical training at the MRC Unit, The Gambia ward and MRC Unit, The Gambia staff teach at the Medical School. There are now 8 locally trained medical graduates working on the MRC Unit, The Gambia ward on various research projects.

RESEARCH PROJECT ACHIEVEMENTS

RESEARCH PROJECT	ACHIEVEMENT
European Union Childhood Life Threatening Infectious Diseases Genetics Study (EUCLIDS)	The EUCLIDS project aims to identify genes controlling the susceptibility, severity and outcome of life-threatening infection, as well as to identify genes controlling the success or failure of immunisation. In addition, the study will provide information on the aetiology of invasive bacterial disease among children admitted to health facilities in the study area. Findings from this study will better inform early antibiotic treatment in children with severe febrile illness in The Gambia
Aetiological agents and risk factors for neonatal sepsis in The Gambia	Sepsis is one of the leading causes of newborn morbidity and mortality in The Gambia. Most babies are treated symptomatically and without full laboratory diagnostics. This project aims to characterise the microbiological spectrum of neonatal sepsis in The Gambia using molecular techniques, and evaluate factors associated with infection and death among admitted neonates with clinically defined sepsis in order to better inform prevention and treatment.
Infective endocarditis in developing countries, a prospective, observational, multicentre study	Infective endocarditis (IE) is a rare but severe disease that still carries high mortality rates approaching 30% at 1 year. Diagnostic capacities have improved with the advent of broad range Polymerase chain reaction (PCR) for bacteria and fungi and three-dimensional transoesophageal echocardiography. However, data from Africa is scarce. Thus, we propose a multicentre and multinational survey to provide epidemiological data on IE in low- and middle-income countries, the clinical and microbiological characteristics of the disease, describe diagnostic and therapeutic treatment options that are currently offered, and measure its impact in terms of morbidity and mortality in low-resourced settings
Haemophilus Influenzae Type B Surveillance	The Paediatric Unit is one of the sites for surveillance of Haemophilus influenzae type b (Hib) disease. The project aims to assess the long-term effect of routine conjugate Hib vaccination in The Gambia.



Edward Francis Small Teaching Hospital

WEST AFRICA COLLABORATION



Senior Scientist,
West Africa Collaboration,
Dr Assan Jaye

The major capacity-strengthening grants targeting sub-regional network programs and collaborative research initiated by MRC Unit, The Gambia came to an end by December 2014.

MRC Unit, The Gambia became the hub for health research training in the sub-region and the presence of WAC at the laboratory of Bacteriology-Virology of Cheikh Anta Diop University (LBV-UCAD) in Senegal permitted the shared experience between the two institutions to administrate and coordinate research consortia that enabled health research trainings, multi-site collaborative research and clinical trials.

Some of these programs that lasted for 4 years, e.g. EDCTP-funded WANETAM (West African Node of Excellence in clinical trial for TB, HIV and Malaria) and IDRC/GHRI-funded WAPHIR (West African Platform for HIV Intervention Research) supported the following:

COLLABORATION ACHIEVEMENTS

Various short-term trainings to improve and develop relevant research skills at especially weaker institutions within the network (that include from Guinea Bissau, Mali, Burkina Faso, Benin, Nigeria, Ghana etc).

Strengthened institutional infrastructure such as West African Platform for HIV Intervention Research (WAPHIR) SQL server at LBV-UCAD that amalgamated the regional HIV database system, an item-tracking bio-bank system, Disease-specific Molecular Diagnostic platforms and development of a clinical trial unit at LBV-UCAD. The WAPHIR database structure is now supporting other non-HIV projects and clinical trials.

Limited joint research activities that supported the capacity strengthening, including postgraduate training and post-doc fellowships; the HIV specific research that benefited from such support are HIV phase I vaccine trials in Guinea Bissau; studies of neurological impact of HIV-2 in the region; Evaluation of TB MVA85A vaccination in healthy and HIV-infected adults; Genetic and epigenetic determinant of Progression in HIV-2; NK recall responses in HIV at-risk population and the morbidity and mortality of ART-naïve HIV-1 adults in the WAPHIR cohort.

REGIONAL IMPACT

The recent completion of sample collections and analyses from HIV infected adults in Guinea Bissau and from HIV sero-discordant couples in Dakar for the final arm of the Natural Killer (NK) project, indicative of the regional collaborative effort in HIV research. Though the WAC research activities are mainly focused on HIV research, the collaboration and implementation of various capacity building programs opened up further networking opportunities in the region and beyond and the MRC Unit, The Gambia has several additional research collaborative links.

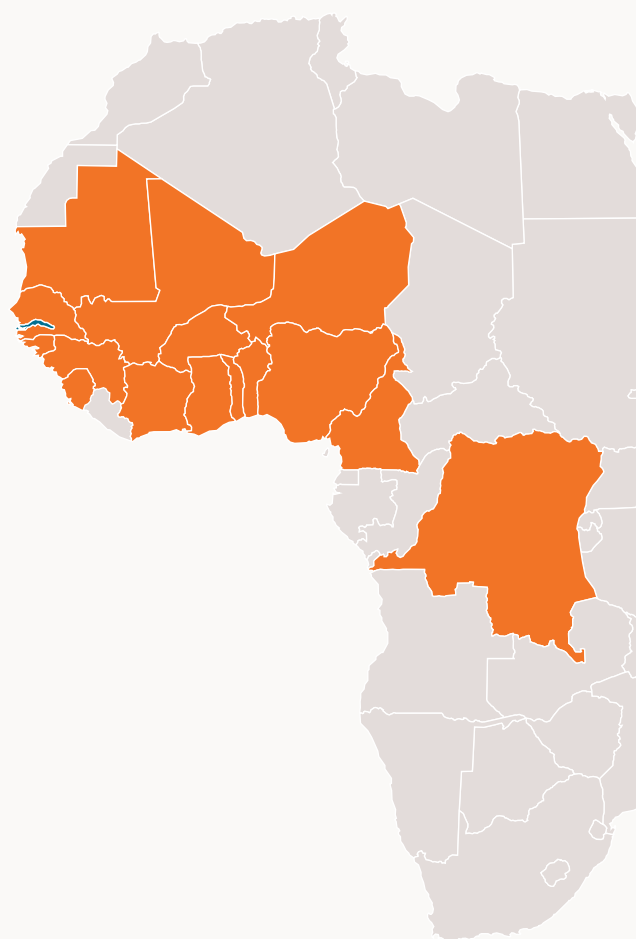
The Presence of MRCG at LBV-UCAD has provided the bases to build on our regional research collaborative initiative that will enable MRCG research output to attain a greater regional impact. The WAC Initiative will be consolidated in a form that will allow MRC Unit, The Gambia continue to lead research in the sub-region and drive specific health research partnerships with West African research groups according to their disease-research areas of strength.

NETWORKING

WAPHIR was given the privilege to organize the second synchronicity meeting of the Canadian-African partnership on capacity building in HIV prevention and intervention research named “Afri-Can Forum-2”, which was held in Johannesburg, South Africa in the beginning of 2015. This meeting was chaired by MRC Unit, The Gambia’s Dr Assan Jaye and was attended by over 130 participants from 9 GHIRI-funded HIV prevention and research consortia in Africa. Presentations delivered by MRC Scientists during the program included ‘Leadership development skills’ (Peter Dukes and Assan Jaye) and ‘Ethics and Regulatory Review Process’ (Mohammed Afolabi and Vivat Thomas-Njie). The Gambia Unit once more demonstrated its leading role and commitment to influencing regional research collaboration and networking.

The WAPHIR HIV research team participated in the MRC Unit, The Gambia poster demonstration during the Scientific Advisory Board (SAB) meeting in March 2015 to showcase some of the HIV research that were presented in the Afri-Can Forum-2; these displays included: “Natural Killer Cell recall responses to HIV-1 peptides in exposed but uninfected subjects are associated with peripheral CXCR6+ NK cell subsets” by Dr Moustapha Mbow; “Development of a quantitative HIV-1 and HIV-2 real-time PCR (qRT-PCR) viral load assay” by Dr Moussa Thiam; “HIV-1 virological failure and drug resistance mutations at 12 and 24 months of first-line anti-retroviral treatment in Senegal” by Dr Nafissatou Leye; “Development of HIV Bio-bank resource management to support clinical trial and intervention research: WAPHIR Experience” by Dr Moussa Thiam; and “Development of the West Africa HIV Platform database unification and infrastructure: The WAPHIR Experience” by Mr Gilleh Thomas.

Figure 6:
West Africa Platform Map



PLATFORM

PROJECT	COUNTRIES	FUNDER
WANETAM	Burkina Faso, Ghana, Guinea Bissau, Mali, Nigeria, Senegal;	EDCTP
WANETAM PLUS	Burkina Faso, Ghana, Guinea Bissau, Mali, Nigeria, Senegal, Benin, DRC	EDCTP
WAPHIR	Guinea Bissau and Senegal	EDCTP
PNEUMOWAR	Niger, Nigeria, Benin, Togo, Ghana, Ivory Coast, Cameroon, Sierra Leone, DRC, Senegal	
WANEAM	Mali, Burkina Faso, Guinea Conakry	EDCTP
Infant Malaria	Guinea Conakry, Benin	MMV
COSMIC:	Benin, Burkina Faso	EU
PROLIFICA	Senegal, Nigeria	EU

HEALTH & DEMOGRAPHIC SURVEILLANCE



The Farafenni and Basse Health and Demographic Surveillance Systems continue to prospectively monitor demographic and health event and outcomes in their respective populations of about 53,000 and 176,000. With a view to adding value to the data generated by the systems, especially after it has been demonstrated that neonatal mortality has become a key public health concern in the wake of the recent drastic decline in the mortality of older children.

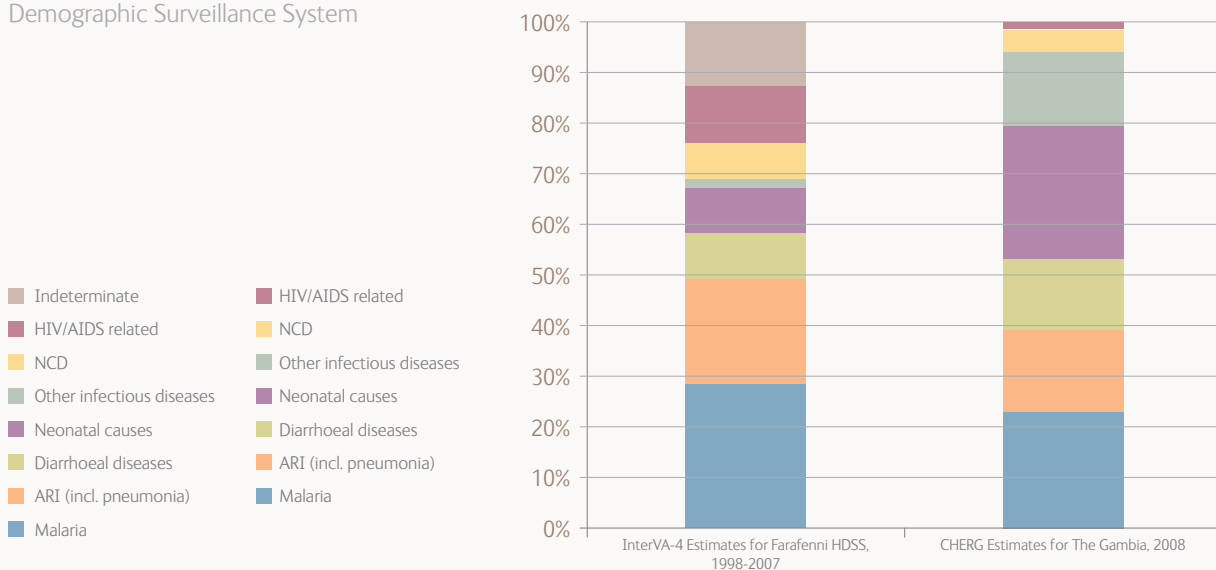
Demographer,
Dr Momodou Jasseh

A new module was incorporated into the surveillance process from January 2014 to solicit information on child health, and specifically within the perinatal period, i.e. just before and after birth. These include birth details – place of birth, professional assistance at delivery and type of delivery; birth weight; time of initiation of breastfeeding; and Intermittent Preventive Treatment in pregnancy (IPTp) uptake by mothers during pregnancy. These variables will undoubtedly enhance our understanding of the risk factors associated with neonatal and infant mortality.

For the 2014 birth cohort of a little under 6,000 in Basse, over half (53%) were born at home; and 43% in a health centre or clinic. Traditional birth attendants were in charge of 44% of the deliveries, and closely followed by Midwife attendants at 35%. Almost one in every 5 deliveries was assisted by a relative, mothers-in-law in most cases. Half the children born were weighed at birth; and almost all of them (96%) began breastfeeding on the first day of life.

Such detailed data on the circumstances of birth have never been available at the community level prior to this undertaking. They will be incorporated into more detailed analyses, especially with respect to mortality, to ascertain the extent to which the circumstances surrounding the birth of a child determines survival within the first month or year of life.

Figure 7:
Causes of death at Farafenni Health & Demographic Surveillance System



CLINICAL TRIAL SUPPORT



Clinical Trials Coordinator,
Vivat Thomas-Njie

STRATEGIC FOCUS

The Clinical Trials Support Office (CTSO) works with MRC Unit, The Gambia researchers and external collaborators to ensure that their clinical trials are conducted to the highest ethical and quality standards, including Good Clinical Practice (GCP). This is achieved through a range of support activities from protocol review, regulatory approvals, process development, risk assessments and clinical trial monitoring of both clinical trials sponsored by MRC Unit, The Gambia and external sponsors.

2014 IMPACT FACTORS

In 2014, key activities of CTSO were supporting the successful delivery of two MRC-sponsored clinical trials: IPV and PregnAnZI. These trials were coordinated by the MRC Unit, The Gambia at Fajara and recruited participants from the Jammeh Foundation for Peace Hospital as well as Sukuta and Fajikunda health facilities.

With direct support activities for clinical trials ongoing, the office also expanded its training programme for clinical trial support staff at MRC Unit, The Gambia. Seminars and workshops on GCP and good research practice were delivered to consolidate regulatory compliance of staff.

The CTSO has also continued driving the integration of best research practice by developing two new MRC Unit, The Gambia policies describing the roles and responsibilities of staff in MRC-funded and externally sponsored clinical trials. Departmental objectives and processes for both scenarios were subsequently adapted which was important since GCP guidelines require clear delineation of responsibilities of the sponsor and the investigator. The implementation of the new policies was a key achievement to fulfil GCP requirements and to safeguard investigators from critical findings during audits and inspections.

ACHIEVEMENTS IN 2014

The MRC sponsored IPV trial was externally audited against industry standards and there were no critical findings which highlights that CTSO-supported research at the MRC Unit, The Gambia meets international expectations, including GCP.

The two MRC sponsored clinical trials IPV and PregnAnZI were completed successfully.

The office successfully conducted a total of three GCP & Ethics courses, with a total number of 105 research staff trained. The office also conducted monitoring training which was attended by 15 members of staff.

The experience of CTSO in supporting complex research has resulted in other research institutions in the sub-region to request for GCP training and advice from the CTSO to enable their institutions to meet sponsor and investigator requirements.

CLINICAL SERVICES DEPARTMENT



Head of Clinical Services,
Dr Suzanne Anderson

The priority of the clinical services department is to provide clinical care for staff, study participants and the Gambian public, with over 50,000 out-patient visits and 1200 in-patient admissions in 2014.

A flexible and skilled workforce ensures that the department is able to support and manage a wide range of healthcare issues and respond to the many different clinical challenges that study participants may also present.

Over the last twelve months we have provided clinical support for several different studies including the Gambia Hepatitis Intervention and Prolifica Studies, Pregnanzi and a number of vaccine trials. This has required us to manage sick neonates, provide palliative care for hepatocellular cancer sufferers and evaluate infants and children with potential vaccine related, adverse events.

RESEARCH

The Unit has led on two research studies: the EUCLIDS study: an EU-funded multi-site study of life-threatening infections in childhood with extensive microbiological and molecular diagnostic work-up of febrile children;

The Malaria PK study hosted on the CSD ward in collaboration with the DCE theme. This was a multi-site trial evaluating a dispersible formulation of dihydroartemisinin-piperazine for infants with uncomplicated malaria. The MRCG was the first site in Africa to obtain all regulatory approvals and to start patient recruitment..

OPERATIONS STRATEGY

Following a successful capital bid in 2012/13 we successfully established a digital x-ray system within the CSD radiology department in 2014. This has reduced the requirement for expensive consumables and provides us with the ability to produce high quality, easily stored digital images. This is an essential requirement for both the research TB platform as well as for patient management in the CSD.

A Hepatitis B vaccination catch-up campaign commenced in July 2014 for all staff unimmunised and at occupational risk of Hepatitis B exposure. Nearly 900 doses of vaccines have been administered to-date with serological testing for immunity due to commence in June 2015.

Developing our ETC: on March 25th 2014 the first of five Ebola Virus Disease (EVD) suspect cases was admitted to the isolation rooms on the MRC CSD ward, Fajara. From this time onwards, in addition to providing clinical care for staff, study participants and the general public, the main focus of work for the CSD in 2014 was developing an Ebola preparedness plan and setting up the Ebola Treatment Centre (ETC). Over the subsequent year, in response to the threat of EVD, we created a semi-permanent ETC, with capacity for 6 suspect and 10 confirmed EVD cases.

Over 50 nurses, medical staff, cleaners and transport personnel have received, and continue to receive, regular training in the use of Personal Protective Equipment (PPE).

Capacity for accepting Ebola suspects at Keneba and Basse field stations has also been set up. SOPs for the use of PPE, transport of EVD suspects, collection of blood samples for EVD testing, cleaning of rooms and vehicles and disposal of contaminated waste have been developed.

Together with senior staff from other core platforms, we participated in Ebola preparedness training drills with WHO, CDC and Gambian MoH officials. Our designated Ebola doctor, Ogochukwu Ofordile, attended a CDC run Ebola training course in Atlanta, Georgia, and participated actively in MoH training as well as representing the MRC on the Gambia Ebola Task Force and Case Management Committees. Our senior Ebola nurse, Gibril Bass, responsible for staff training, attended an MSF Ebola training course in Belgium.

As of December 31 2014, the MRC ETC was the only Gambian centre ready to receive both Ebola suspects and confirmed cases for treatment. And while the disease is still active in the West African sub-region the CSD continues to be vigilant for EVD suspects and maintains a high level of preparedness for the identification and management of cases..

CAPACITY DEVELOPMENT

A key role of the Department is contributing to healthcare capacity development:

TRAINING

The CSD continues to contribute to both undergraduate and postgraduate training of nurses and doctors. University of The Gambia medical students now come on 10 week junior and senior paediatric attachments to the CSD and tutor groups have been set up for all students with senior research clinicians.

University of Swansea global health students also come on attachment and this year the numbers increased to 20, including medical, nursing and midwifery students.

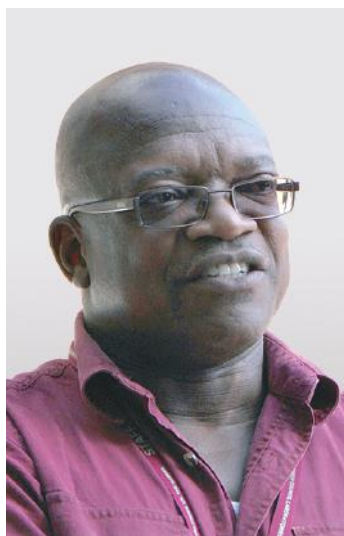
POSTGRADUATE

Continuation of Internship programme with Eward Francis Small Teaching Hospital and the University of the Gambia Medical School with two graduates completing three month internship posts – paediatrics and internal medicine.

TRAINEES

NAME	FUNDER	PROGRAMME	INSTITUTION
Dr Fatou Secka Research Clinician EUCLIDS	ESPID	Hot Topics in Infection and Immunity Course	Keble College, Oxford
Ms Rahmatulai Maane Radiographer CSD	MRF	MSc in Echocardiography	Imperial College London
Dr Cukwuemeka Onwuchekwa Medical Officer CSD	MRC	Distance Learning MSc Epidemiology	LSHTM
Dr Ogochukwu Ofordile Medical Officer CSD	Self-funded	Ebola Training Workshop	CDC Atlanta

LABORATORY SERVICES



Head of Laboratory Services,
Dr Davis Nwakanma

During 2014, the Laboratory Services Department continued to ensure the provision of high quality laboratory support to research projects at MRC Unit, The Gambia through various platform laboratories and also to the Clinical Services Department, for patient care. However, the hallmark of our activities for the year, was the rigorous preparation for assessment of the laboratories towards accreditation to ISO 15189:2012 standards.

This standard is now widely accepted as the benchmark of quality for medical laboratories and a guarantee that diagnostic services provided by an accredited facility conforms to internationally accepted standard of quality. Although some of our laboratories already have GCLP certification, the attainment of ISO15189 accreditation would be a formal recognition of the high quality of diagnostic service provided by our laboratories. It will increase the level of confidence in our facility by Principal Investigators and Clinicians and likely ensure competitive advantage for the Unit in securing research funding. Working with the Quality department, training sessions, mock evaluations and vigorous oversight by the quality steering group were undertaken, leading to a high level of confidence and preparedness for an assessment visit by the Kenya Accreditation Service (KENAS) in 2015.

Another major area of activity was the establishment of capacity for laboratory diagnosis of The Ebola virus, at MRC Unit, The Gambia, following the outbreak of Ebola epidemic in the sub-region. The admission of a number of suspected cases at the MRC clinic in Fajara, in the first quarter of 2014, flagged up the urgent need for in-country capacity for Ebola diagnosis. Following training with Public Health England (PHE) and consultation with Pasteur Institute, Dakar, the Laboratory Services Department was able to establish the RT-PCR diagnostic assay for Ebola within the Unit. The Ebola Diagnostic Laboratory (EDL) is equipped with containment level 3 biological safety cabinet, redesigned workflow, diagnostic equipment and necessary PPEs (personal protective equipment) within the Category 3 facility in the Greenwood laboratories.

Standard Operating Procedures (SOPs) covering all processes from sample reception to result dissemination and waste disposal have been developed and implemented. A number of training drills have been successfully conducted and the laboratory is ready to provide diagnostic support to the MRC Unit, The Gambia clinic and other treatment centres in the country.

OPERATIONS AND OUR COMMUNITY

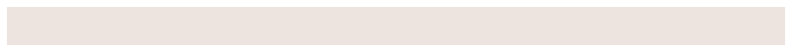
PARTNERSHIPS



LEARNING & DEVELOPMENT



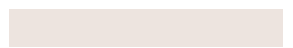
PEOPLE & RESOURCES



RECOGNITION AWARD 2014



COMMUNITY & GOVERNMENT ENGAGEMENT



PUBLICATIONS



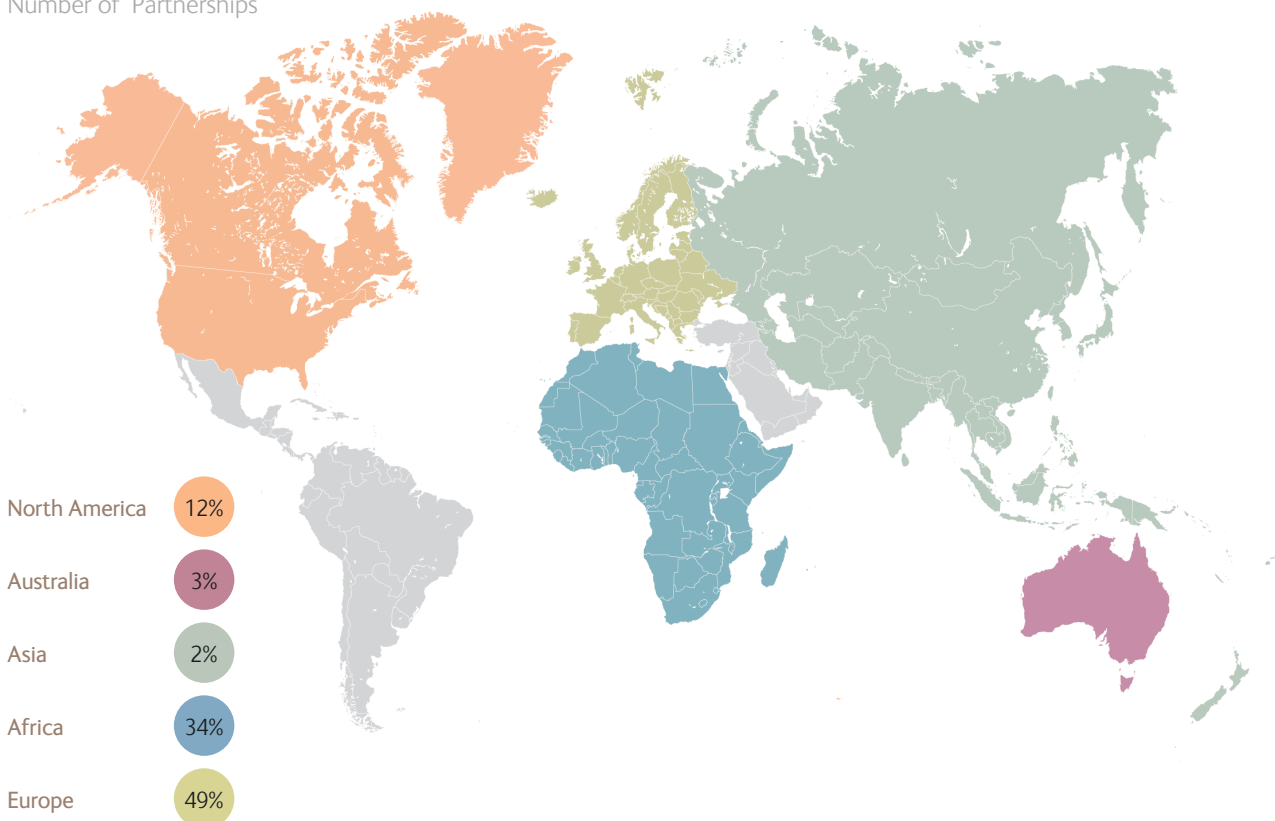
PARTNERSHIPS

In 2014 there were 45 active grants. The Unit prides itself with the strong collaboration and partnerships that it has with regards to scientific funding. Over the many years strong relationships have been built and nurtured with all major stakeholders, The Gambian Government and health care institutions, the Gambian people, the donor community and the scientific peer community.

INTERNATIONAL PARTNERSHIPS

Internationally the Unit had over 106 project partnerships indicating the strong collaborative links in our research. About 50% and 34% of these collaborations were with institutes in Europe and Africa.

Figure 8:
Number of Partnerships



PARTNERSHIP WITH THE GAMBIA GOVERNMENT

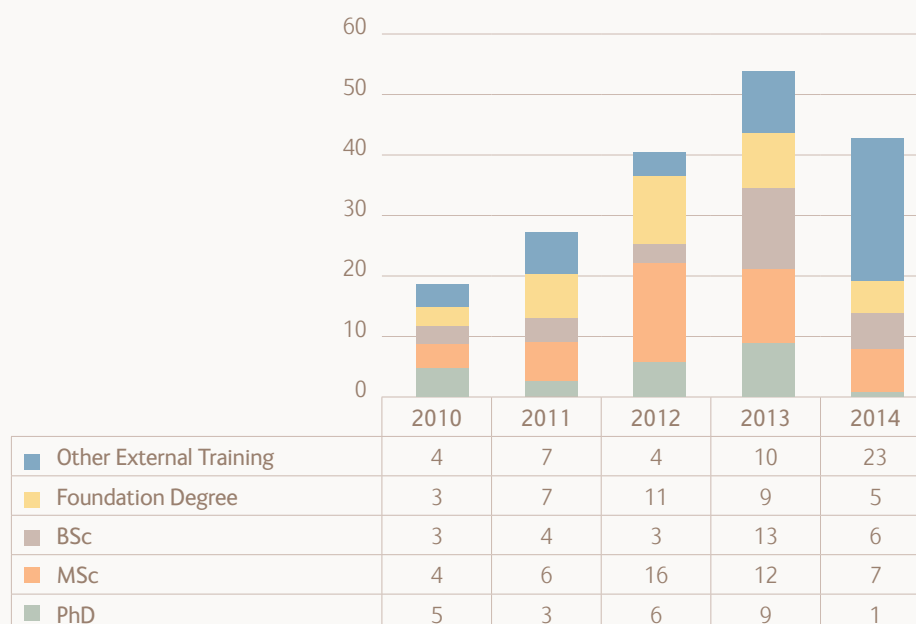
The Unit has a strong research partnership with The Gambia Government. We have Unit research being conducted in over 20 health facilities in the country. These range from the Edward Francis Small Teaching Hospital in Banjul to small health facilities in Koina. A highlight of the local partnerships has been the work at the Jammeh Foundation for Peace Hospital. The Unit has a minimum of 50 staff based at the hospital. Building on work from 2013, the Unit has helped provide essential equipment, capacity building and a symbiotic relationship that has successfully seen the commencement and implementation of several projects.

PROJECT	LEADER	FUNDER	DESCRIPTION
The Inactivated Polio Vaccine (IPV) Clinical Trial	Dr Ed Clarke	Bill and Melinda Gates Foundation	Community sensitisation, recruitment and follow up of toddlers was done in close collaboration between the MRC Unit, The Gambia field staff and the public health officers working under the hospital. Recruitment targets were met in record time. IPV vaccine is now routinely introduced into the EPI schedule of The Gambia.
PregnAnZI	Dr Anna Roca	MRC	<p>The study aimed to determine the impact of one dose of Azithromycin given during labour on a newborn's nasopharyngeal bacterial carriage.</p> <p>Pregnant women were sensitised during their antenatal visits at the JFPH by MRC Unit, The Gambia field staffs. Field activities for this project required close collaboration between the MRC Unit, The Gambia employed nurses and the mid-wives working at the hospital. A total of 829 pregnant women were successfully recruited and enrolled into the study.</p>
GAMI - Group-B Streptococcus (GBS)	Dr Kirsty Le Doare	Wellcome Trust, Royal College of Physicians, Thrasher Research Fund	Is a bacterium which is often carried by healthy women and in a very small percentage can cause death and sickness in babies. The illness could be prevented by giving a vaccine to pregnant women. The idea of vaccinating the mother is so that she can pass on the protection (antibody) during the pregnancy to the baby. A vaccine is currently being developed, however the Gambian Mothers and Infants (GAMI) project in the Gambia aims to identify the types of GBS most common in the Gambia in order to know if the vaccine being produced can be used well in this setting. Pregnant women were sensitised and enrolled into the study again with strong collaboration between hospital midwives and MRC Unit, The Gambia nurses as samples were collected during labour.

LEARNING AND DEVELOPMENT

Career development and training are paramount to achieving the mission of the Unit in producing science of the highest quality, which has strong local, regional and international recognition, making an impeccable impact on health locally and globally. A number of our departments have highlighted a strong record of internal training and capacity-building, many of which derived locally and from regional partners. In addition, the MRC Unit the Gambia more than doubled the number of staff funded for external training from 2010 to 2014.

Figure 9:
Number of Training Starts



In 2014, we had 122 external/academic trainees in the following categories; 26 PhD, 29 Masters, 13 BSc, 27 Foundation degrees and 27 other professional trainings. Most undertake distance learning with practical work at the Unit; five are registered with the Open University, five with the London School of Hygiene and Tropical Medicine, three with the Institute of Tropical Medicine, Antwerp, Belgium, and the rest with other research-intensive Universities overseas. Five of our PhD students are full-time residents overseas – 2 at Aberdeen, Edinburgh, The Sanger Institute and The University of Melbourne.

**BELOW IS THE NUMBER OF EXTERNALLY COMPLETED TRAININGS,
DELIVERED BETWEEN APRIL 2010 AND DECEMBER 2014**

TRAINING TYPE	MALES	FEMALES	TOTAL	% FEMALES
PhDs	17	6	21	29
MScs	19	5	24	21
BScs	19	13	32	41
Foundation Degrees	20	5	25	20
Other Professional	31	12	43	28
TOTAL	104	41	145	28

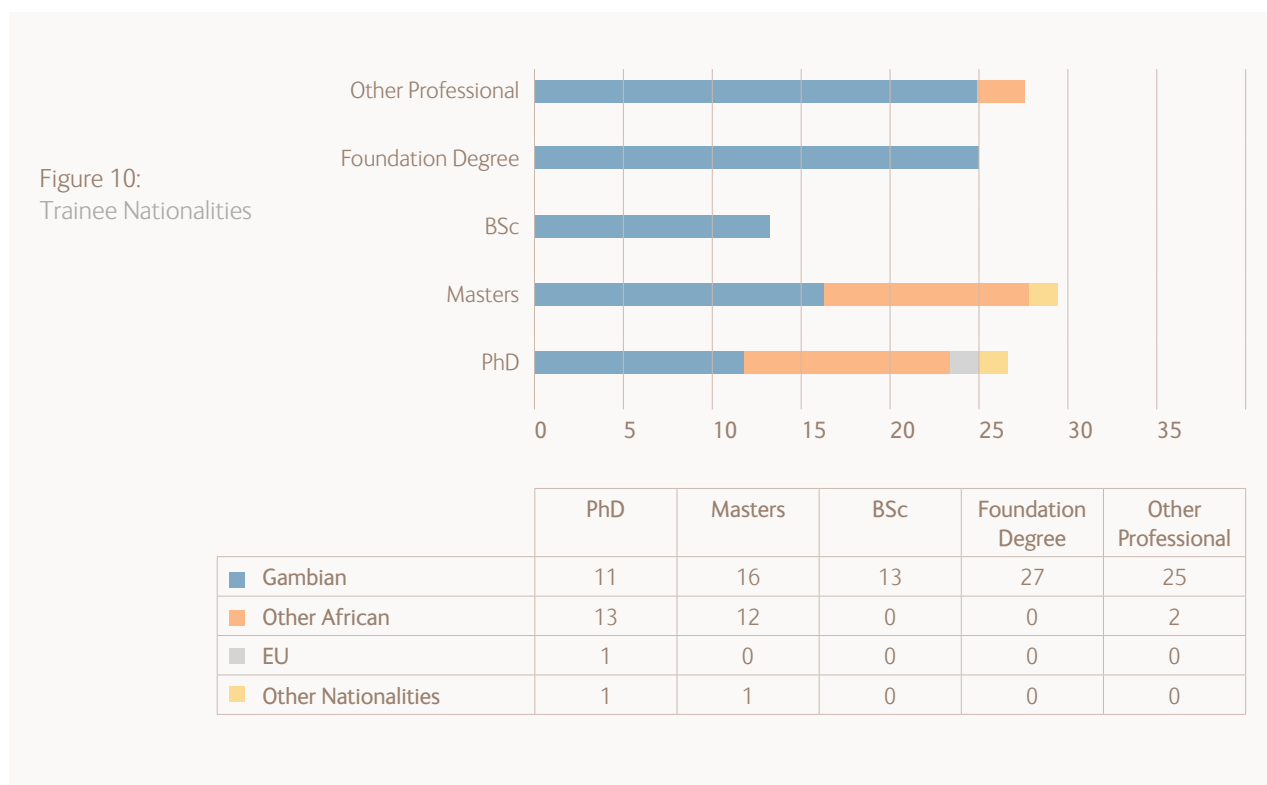
The percentage of female trainees (28%) is lower than the male trainees (72%, December 2014). PhD and MSc together represent 31% of all trainees. The large majority took ≥4 years to complete PhD training.

The year started with 122 trainees, which increased substantially over the period 2010-2014. Overall, 51% of the trainees who started were supported by the MRC Unit Gambia’s central and departmental training budget whilst the remaining ones have been on external funding.

Gambians represent the large majority of trainees, and for some degrees they are the only nationality represented and most trainees complete their studies.

Trainees (n=122) by nationality and type of training (2014)

The Unit’s Higher Degrees Committee, established in compliance with the Open University requirements of MRC Unit The Gambia as an Affiliated Research Centre, continually review and follow up with the challenges that our research degree PhD and MPhil students face whilst progressing through their studies.



PEOPLE AND RESOURCES

OPERATIONS STRATEGY AND IMPACT FACTORS ACHIEVED IN 2014



Director of Operations,
Joan Vives Tomas

At an operational level, we have succeeded in streamlining our logistic chain with a 27% stock reduction, introduced desktop virtualisation to provide a more robust IT system in relation to data security and reduced the overall electricity consumption by up to 75%. Staff have been proactively involved in the implementation of our Health and Safety plan and setting the fundamentals for our Wellbeing programme aimed at improving the overall quality of life for staff.

2014 has been a challenging year for the Unit. The Unit has initiated the ISO accreditation process, the introduction of Oracle and MSD MRP system have both reshaped how things are done, bringing more control but adding new administrative layers. Of course having a new Director of Operations means a new Unit vision and therefore a new Operations organogram. We have also been faced with EVD epidemic in the region. In summary, it has been a year where the Operations team professionalism has been tested and proven to be excellent and committed to the Unit vision and mission.

The new funding structure initiated in 2010 forced the Operations Department to adapt to the new reality. The new funding scheme - science fully externally funded and the platform only partially funded – changed completely how the Unit was managed, and at the end of the day how the Unit is seen by internal and external stakeholders. Fortunately, uncertainties have been counter-balanced by the immediate success of our scientists attracting funds, proving that the new model was the right one to follow.

This year and due to the consolidation of the new funding model, operations responsibilities have grown and new departments have been created, the Unit has now a separate Procurement Department, Logistics Department and a Finance Department with no increase in staff numbers which ensured a clear segregation of duties and a strong service oriented Logistics Department.

In 2014 we also initiated a process to better define the operations role within the Unit. Data Management and Statistics became directly line managed by the Unit Director and Biomedical Engineering line managed by the Head of Laboratory Services. The departments under Operations now are: Finance, Human Resources, Procurement, Logistics and Transport, Security and Research Continuity, Basse and Keneba Field Station Operations and Administration, Information Technology, Health, Safety and the Environment and Facilities.

The Unit also has gone through the difficult, but at the end successful introduction of Oracle and MS Dynamics, both Enterprise Resource Planning (ERP) systems that provide more transparency and ensure the integrated management of resources. Although not fully appreciated by all, the new system allowed the Unit to have in 2014 the best audit result ever.

During the 2009-2013 period the Unit has had three different Director of Operations and two different Heads of Finance. Continuity and progress through the business plan was ensured by midline managers, which demonstrates the importance of talent retention at this level of management, and the importance of recruiting and retaining Gambian Nationals if capabilities are available in the country. This is a policy that we are and will follow. We have initiated this year a midline manager training scheme and funded 3 MBAs .

Our operations currently provide support for research activities performed in more than 10 health units (from hospitals to health centres) and more than 60 villages spread in an area more than 400 km wide. The variety of tasks performed include managing and installing server rooms, digging boreholes and septic pits, ensuring the logistic chain of reagents and recruiting qualified and experienced staff from Cleaners to Post-docs. The geographical dispersion and the wide scope of responsibilities requires intra/inter-departmental coordination and joint programs to ensure consistency in management.

2015 should see the consolidation of management schemes initiated in 2014 as MRC and Me, the Unit Wellbeing program and the Living salary scheme.

RECOGNITION AWARD 2014



Muhammed receiving his award from MRC CEO, Professor Sir John Savill in London.



Dr Dora Pereira being awarded the prize by Dragons' Den judge Richard Farleigh and RSC Chief Executive Robert Parker (credit: MPP image creation / RSC)

AWARD LIST

DR MUHAMMED AFOLABI

2014 MRC CEO commendation award as a runner-up award in the category of 'Driving Change' recognising the significant contributions of his PhD studies

DORA PEREIRA

2014 Royal Society of Chemistry Emerging Technologies Competition

ANN PRENTICE

2014 Honorary Degree award of Doctor of the University of Surrey

VICKIE BRAITHWAITE

2014 Vitamin D and Human Health: from the gamete to the grave, Queen Mary University of London, New Investigator Award

2014 British Council Fluoride Workshop, Brazil, Travel Award

SHARON FULTON

2014 European Nutrition Leadership Programme Bursary

GEORGIA BI Long Lasting Insecticidal NetsG

2014 Newnham College Travel Grant for Developing World Fund

ANDREW PRENTICE

2014 IACON-SENC Award for Excellence in Nutrition Science and Development for Africa, presented at III WCPHN in Gran Canaria

COMMUNITY AND GOVERNMENT ENGAGEMENT

The focus for 2014 was to further strengthen trust with the Gambia Government, the community and local stakeholders. To achieve our desired objectives, we embarked on various activities to promote inclusion.

WORK WITH THE LOCAL MEDIA

The Unit Director and the Community Relations Officer held a radio programme at Star FM. This was well received helping to increase the Unit's awareness scope as Star FM is one of the top three radio stations in The Gambia. While on the programme, The Unit Director took questions from listeners with his answers translated into local languages by the Community Relations Officer.

WORK WITH OTHER PARTNERS

MRC Unit, The Gambia's increased participation in fostering better community relations by working with non-governmental organisations, hospitals and Divisional Health Teams. Project leaders are constantly engaged to ensure that community involvement is ensured at set up, during and after implementation.

COMMUNITY OUTREACH AND AWARENESS PROGRAMMES IN SCHOOLS

We have a strong desire to build science and research development in the country. This is enhanced through:

Support of local educational institutions such as the University of The Gambia and working closely with the School of Public Health on major public health issues which forms an important part of our interplay with the Gambian Government.

School visit was conducted to facilitate communication with the communities as well as build science capacity at the school level. Twenty five schools visited the Unit during the course of 2014. During the school visits, students gain first-hand knowledge on the research work we do, to help them share the message with their communities.



Community sensitisation in Jalang Banta



Community sensitisation in Jalang Banta

COMMUNITY ACTIVITIES

ACTIVITY	COMMUNITY
The Meningococcal Vaccine Project results feedback meeting	Dampha Kunda in URR
The TB community outreach programmes	Kombo Madiana
The Sibanor Open Day feedback sessions	Sibanor

STRONG COOPERATION BETWEEN THE GAMBIA GOVERNMENT AND MRC

Most projects implemented are done in strong collaboration with Government partners. This has generated mutual partnerships in implementation, capacity building, resource sharing and optimisation. Such strong partnerships are evident at the Jammeh Foundation for Peace teaching Hospital, Edward Francis Small Teaching Hospital, etc. In addition we provide relevant health departments with training.



Honourable Dr Omar Sey, Minister of Health and Social Welfare and Professor Umberto D'Alessandro, Unit Director during the handing over ceremony of equipment to The Gambia Government

PUBLICATIONS

Through peer reviewed publications, we continue to communicate, inform the collective knowledge base and validate the quality of our research. The publication output has shown a steady progress since the beginning of the Quinquennial in 2010. In 2014/15 the Unit published its highest number of publications with 157. It is anticipated that this trend will continue.

Figure 12:
Unit Publications Time Series

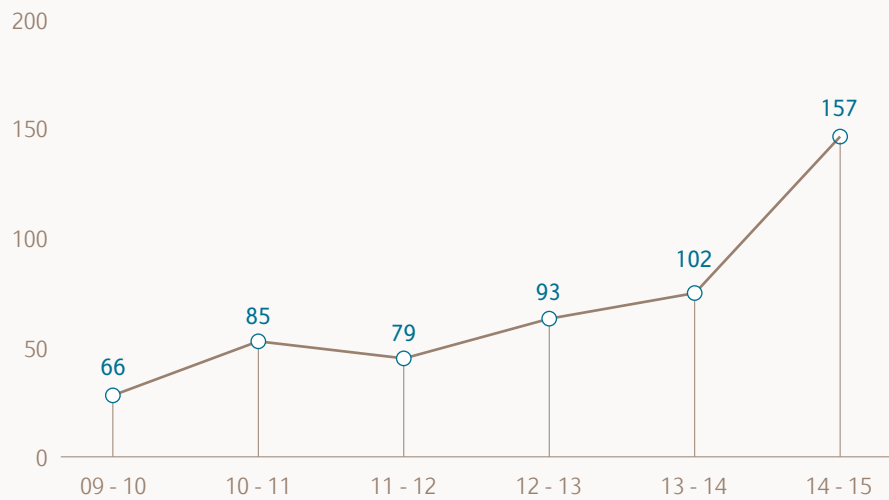
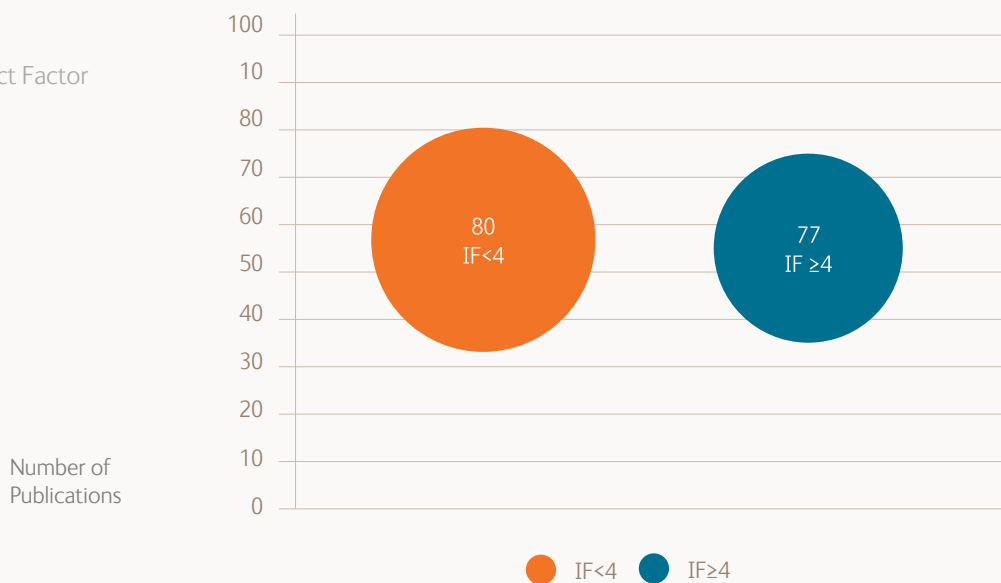


Figure 13:
Publications Impact Factor



There has been an increased number of publications published in high impact factor journals. Over 49% publications for the year had been in journals with greater than 4 Impact (IF).

INFLUENCING POLICIES AND PRACTICES

It is the ultimate aim that our work should be reflected in policies and practices of health care. In 2014, the Unit concluded the nationwide survey of Tuberculosis GAMSTEP project, funded by the Global Fund. It is one of the numerous signs of the extremely good collaborative relationship between MRC Unit, The Gambia and The Government of the Gambia, more specifically the Ministry of Health and Social Welfare (MOHSW), the National Leprosy and Tuberculosis Programme and other partners. The survey is a major breakthrough in the control of tuberculosis in the Gambia. The results have shown that although TB continues to be a major public health problem in The Gambia, the true burden is approximately four times less than the current 2010 WHO estimates. Findings from the study have informed the global fund performance indicators for the country as well as programmatic shifts for the National TB control Programme.

THE SPRAYING AND NETS TOWARDS MALARIA ELIMINATION (SANTE) PROJECT

The SANTE study, a large scale intervention study carried out together with the Gambian National Malaria Control Programme (NMCP), was successfully finalized, analysed and published in a high impact journal (Lancet) at the end of 2014.

The main result was that in a cohort of 8000 children living in 80 clusters of rural villages, malaria was similar in children with insecticide treated bed nets (Long Lasting Insecticidal Nets) alone compared to those with Long Lasting Insecticidal Nets plus spraying the inside walls with insecticide (DDT). So if Long Lasting Insecticidal Nets coverage can be maintained at the WHO recommended level of 80% there is no need to conduct IRS, at least in areas with moderate malaria transmission.

These results have been presented by MRC Unit, The Gambia staff and National Malaria Control Programme staff in high impact meetings in Atlanta, Durban and UK. In addition, we have presented and discussed the results with Roll Back Malaria, The Global Fund, the Gambian Ministry of Health in Banjul and in Basse, Upper River Region (URR) and the villagers who participated in the study.



SANTE study indoor residual spray



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