

Conclusion Engaging the youth in bio-banking was regarded as an important step. Therefore, with careful considerations, youth can be engaged to demystify health research and bio-banking through well-tailored and suited engagement strategies.

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PA-682 OVERCOMING DIVERSE CHALLENGES ASSOCIATED WITH INNOVATIVE MULTICOUNTRY COLLABORATIVE INITIATIVES: THE KENYAN EXPERIENCE OF THE PREV_PKDL PROJECT

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Background The EDCTP-funded PREV_PKDL project was designed to: i) advance the clinical development of a vaccine for prevention of visceral leishmaniasis (VL)/post kala azar dermal leishmaniasis (PKDL) and ii) to gain a greater understanding of the immune determinants of treatment outcome, using multidimensional, multiparameter phenotyping of patient cohorts recruited across the countries of the Leishmaniasis East Africa Platform (LEAP; Ethiopia, Kenya, Sudan and Uganda). Central to the latter objective was the establishment of a distributed Center of Excellence in Flow Cytometry across the collaborating sites (Ethiopia, Kenya, Sudan Uganda and UK).

Methods Accomplishing the project objectives required acquisition of specialised equipment (CytoFLEX LX Cytometer), sourcing and validation of custom antibody panels, specialised training of flow cytometry managers, and renovation of space to develop a Flow Cytometry Laboratory. Study approvals were obtained for implementation at Kimalel and Chemolingot subcounty hospitals in Baringo County.

Results Multifaceted challenges were numerous, including delays in laboratory allocation and renovation, UK VISA issues precluding travel of the flow manager, supply chain delays occasioned by government requirements, late arrival of equipment, relocation of personnel and equipment from initial study site to current site, in-country insecurity and an ongoing curfew in the study area due to cattle rustling. Despite these challenges, the study has been initiated and high quality immunological data obtained from 24% of the target sample size. In addition, six *Leishmania* isolates have been obtained from splenic aspirates of VL patients enrolled as part of a nested collaboration that seeks to understand how parasite genotype affects clinical status and treatment response.

Conclusion Developing the capacity to conduct in depth immune phenotyping of patients enrolled in clinical studies in East Africa faces many hurdles that can be overcome by perseverance and a common objective.

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PA-684 STRENGTHENING NATIONAL ETHICS COMMITTEES IN WEST AND CENTRAL FRANCOPHONE AFRICA: PROGRESS, CHALLENGES, AND PERSPECTIVES

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Background National Ethics Committees (NECs) are critically required to ensure rigorous and ethically sound health research. In Francophone Africa, in spite of a rise in the bulk of clinical and biomedical research, and the fact that the region is highly vulnerable to emerging infectious diseases, NECs have not reached the institutional maturity of their counterparts in Anglophone Africa. To address these challenges, the Cameroon Bioethics Initiative (CAMBIN) received funding for strengthening the capacity of NECs in four Francophone African countries: Cameroon, Chad, Mali and Niger.

Methods Through the project called “Strengthening National Ethics Committees in West and Central Francophone Africa (SNECFA)”, CAMBIN supported NEC members (1) to write/update their Standard Operating Procedures (SOPs) for the review of research protocols during routine and emergency health situations; (2) register/renew their Federal Wide Assurance number (FWA); (3) develop and/or revise Training and Resources in Research Ethics Evaluation (TRREE) national supplement for their country; (4) disseminate the SOPs and TRREE national supplements and (5) draft a collaboration plan (Mali with Niger and Cameroon with Chad).

Results CAMBIN provided customized training programmes for NEC members. The four NECs have developed their SOPs following the WHO guidelines and are currently using them for the review of research protocols. They all have an active FWA registration – improving their international visibility. The NECs are developing and/or updating their TRREE national supplements. Finally, a groundwork for knowledge sharing, exchange of ideas and good practice between the NECs has been created through the development of two (Mali/Niger and Cameroon/Chad) collaboration plans.

Conclusion The capacity of NECs in Cameroon, Chad, Mali and Niger is being strengthened. The dissemination of the SOPs and the TRREE national supplements within the scientific community will further boost their national and international visibility. Collaboration plans will be implemented in the coming months.

PA-690 WOMEN'S EMPOWERMENT AND UPTAKE OF SULFADOXINE-PYRIMETHAMINE FOR INTERMITTENT PREVENTIVE TREATMENT OF MALARIA DURING PREGNANCY: RESULTS FROM A CROSS-SECTIONAL SURVEY IN THE LAKE ENDEMIC REGION, KENYA

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Background Malaria in pregnancy remains a major public health problem in endemic areas of the sub-Saharan African (SSA) region. However, there is limited understanding of the role of women empowerment in using Sulfadoxine-Pyrimethamine for intermittent preventive treatment of malaria during pregnancy (IPTp-SP) in the SSA region. This study examines the association between women empowerment indicators and optimal uptake of IPTp-SP (3 or more doses) in the Lake endemic region of Kenya.

Methods We used data from a cross-sectional baseline survey of 3154 women aged 15–49 years in Kisumu and Migori Counties who had a live birth in the last two years prior to the study. Data were collected between June to August 2021. We conducted a descriptive analysis to show the distribution of respondents by key background characteristics, and bivariate and multivariate logistic regression to examine statistically significant associations between women empowerment measures (decision-making power, control of assets, education, and employment status) and optimal uptake of IPTp-SP.

Results Of the 3154 surveyed women, 1505 (47.7%) received optimal IPTp-SP dose during their last pregnancy. The Odds for optimal use of IPTp-SP increased among women who had: high decision-making autonomy (AOR=1.31; CI=1.10 – 1.58); 4 or more ANC visits (AOR=3.18; CI=2.64 – 3.84); interacted with a healthcare provider about IPTp (AOR=1.47; CI=1.27 – 1.71); and high knowledge of approaches to prevent malaria in pregnancy (AOR=1.99; CI=1.62 – 2.45).

Conclusion The study findings suggest that maternal health interventions should focus on less empowered women (i.e. women with less decision-making autonomy), women with limited ANC visits and interaction with a healthcare provider, and those with limited knowledge of approaches to prevent malaria in pregnancy because they are less likely to achieve optimal use of IPTp-SP dose during pregnancy.

PA-693

RECOVERY OF FULL SUSCEPTIBILITY TO DELTAMETHRIN OF RESISTANT MOSQUITOES AFTER PRE-EXPOSURE TO PIRERONYL BUTOXIDE: A CALL FOR THE USE OF SECOND GENERATION NETS IN GABON

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Background Bed nets are the main tools used in vector control of malaria. However, insecticide resistance is a looming threat on their efficacy and the gains obtained over the years. Thus, a better understanding of the resistance profile of vectors is a prerequisite towards the implementation of vector control measures adapted to local settings. We therefore aimed to evaluate the resistance of mosquitoes to various insecticides and the effect of the synergist piperonyl butoxide (PBO) on pyrethroid resistance.

Methods *Anopheles gambiae* s.l. larvae were collected in Lambaréné and reared until adult emergence. The susceptibility of adult mosquitoes to deltamethrin, permethrin, bendiocarb and malathion was tested using the WHO protocol with additional testing performed for permethrin and deltamethrin with mosquitoes pre-exposed to PBO.

Results *An. gambiae* s.l. mosquitoes were resistant to permethrin 0.75% and deltamethrin 0.05% with mortalities of 11% and 72% respectively, after 24 hours. Resistance to permethrin was of high intensity with mortality of 47% with permethrin 3.75% and 88% with permethrin 7.5%. The combination PBO+permethrin 0.75% resulted in a 4-fold increase in mortality to 44%. The intensity of resistance to deltamethrin is considered moderate with a mortality with deltamethrin 2.5% of 86% in the tests performed. The combination PBO+deltamethrin 0.05% resulted in a complete recovery of susceptibility with a mortality of 100%. Finally, mosquitoes were resistant to bendiocarb and susceptible to malathion with mortalities of 75% and 100% respectively.

Conclusion The results obtained in this study confirm the high intensity of resistance of *Anopheles* to pyrethroids. However, the improvements observed with the use of PBO in terms of mortality rates suggest that second generation bed nets which are impregnated with PBO could be useful tools for vector control. These results also allow us to consider the use of malathion in combination with other insecticides to mitigate resistance.

PA-698

BABIES BORN TO MOTHERS WITH ACTIVE TUBERCULOSIS (TB) HAVE REDUCED IGG TETANUS AND DIPHTHERIA VACCINES RESPONSES AND INCREASED IL-17 PRODUCTION

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Background Babies born to mothers with active TB (ATB) are at risk of poor clinical outcomes like low birth weight however, little is known about their vaccine responses. We hypothesised that these babies have reduced responses to vaccines compared to babies born to TB-free mothers.

The objectives of this study were i) to determine IgG responses to: BCG, measles, tetanus, and diphtheria vaccines and ii) to determine TB-specific cytokine responses using QuantiFERON (QFT) plasma.

Methods A longitudinal case-control study; baby-cases (born to mothers with bacteriologically confirmed ATB) and baby-controls (born to mothers without ATB). Quantitative IgG-specific BCG, diphtheria, tetanus, and measles ELISA assays were performed on infant plasma harvested from heparinised venous blood collected on first encounter after birth (month 0), at month 3 and month 6 following immunisation as per the Uganda routine immunisation schedule for children under 1 year. Luminex (5-plex) assay for TB-specific cytokines: IL-17/IL17A, IFN- γ , TNF- α , IL-2 and GM-CSF was also performed on baby QFT plasma. Prism was used for statistical analysis, and $P < 0.05$ was considered statistically significant after performing the Mann-Whitney U-test. Data was expressed as medians and interquartile ranges. Fold changes were computed by dividing medians of cases by medians of controls.

Results Fold change analysis revealed that cases had a 0.15-fold decrease in diphtheria antibodies and a 0.69-fold decrease