PO 8538 **STRENGTHENING SOCIAL STRATEGIES TO ENGAGE SUB-SAHARAN AFRICAN SOCIETIES TO VALUE CLINICAL RESEARCH: THE EXPERIENCE IN CONDUCTING CLINICAL TRIALS IN LAMBARÉNÉ**

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10.1136/bmjgh-2019-EDC.133

Background Over the last two decades, clinical research activities have increased significantly in sub-Saharan Africa but societal engagement to make research socially and economically valuable is limited. Thus, engaging communities when designing clinical research and promoting social impacts of research are becoming key objectives among stakeholders involved in clinical research in sub-Saharan Africa. However, there is a need to define concepts and indicators to assess the strength of community engagement as well as the social impacts of clinical research.

Here, we hypothesised that the social meanings of willingness to participate and compliance to clinical trial procedures are relevant indicators to assess community engagement.

Methods We conducted a retrospective, prospective case study of clinical trials conducted in CERMEL between 1995 and 2017. We performed a social meaning framework analysis of the following processes: protocol design, ethical and regulatory clearance, informed consent and medical study procedures. We identified the social meanings of each procedure according to the involvement of social components (actors, ideas, communication strategies).

Results A total of 42 clinical trials were identified in the ClinicalTrials.gov and Pan-African Clinical Trials Registry databases and confirmed by the top management of CERMEL. Between 1995 and 2004, there was little social meaning connected to trial procedures. This period was associated with poor compliance to study procedures. Between 2005 and 2017, compliance to study procedures improved. Detailed results will be presented during the meeting.

Conclusion The rise in willingness to participate in clinical research and improved compliance with study procedures were associated with the introduction of social components to medical procedures. Both indicators may be relevant to assess the strength of community engagement.

PO 8542 **CLINICAL ILLNESS AND OUTCOMES IN NIGERIAN CHILDREN WITH PERSISTENT EARLY-APPEARING ANAEMIA FOLLOWING ARTEMISININ-BASED COMBINATION TREATMENTS OF UNCOMPLICATED PLASMODIUM FALCIPARUM MALARIA**

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10.1136/bmjgh-2019-EDC.134

Background Early-appearing anaemia (EAA) is not uncommon in malarious children following artemisinin-based combination treatments (ACTs) of uncomplicated infections and it may become persistent (PEAA). There is little evaluation of the

factors contributing to and the kinetics of the resolution of haemoglobin deficit characteristic of ACT-related PEAA.

Methods PEAA was defined as haemoglobin concentration <10 g/dL for at least 1 week after treatment initiation with artemether-lumefantrine (AL), artesunate-amodiaquine (ASAQ) or dihydroartemisinin-piperaquine (DP) in malarious children with haemoglobin ≥10 g/dL pre-treatment. Drug-attributable fall in haemoglobin (DAFHB) was defined as the difference between pre-treatment and the lowest recorded haemoglobin value in the first week after treatment initiation. Stepwise multiple logistic regression model was used to evaluate independent predictors of PEAA. Time course of deficits in haemoglobin from baseline was used to estimate the disposition kinetics of haemoglobin deficits using a one compartment model.

Results Asymptomatic PEAA occurred in 46 of 540 children. A duration of illness ≤3 days before presentation, haemoglobin <11.7 g/dL pre-treatment and 8.3 g/dL 1 day after treatment initiation. DAFHB ≥2 g/dL and treatment with DP independently predicted PEAA. Time to 90% reduction in haemoglobin deficit was significantly longer in AL-treated children compared with other treatments. Declines in haemoglobin deficits were monoexponential with the following overall estimated parameters: C_{max} 2.6 g/dL (95% CI 2.3–2.9), T_{max} 3.2 days (95% CI 2.2–4.1), AUC 31.9 g.dL⁻¹.day (95% CI 25–38.8), K_{el} 0.3 day⁻¹ (95% CI 0.3–0.4), t_{1/2} 3.9 days (95% CI 2.6–5.1), CL_p 0.6 L.day⁻¹ (95% CI 0.5–0.7), and V_d 2.4 L (95% CI 1.7–3). Overall, mean anaemia recovery time of 17.9 days (95% CI 15.5–20.2, n=39) was equivalent to 5 multiples of half-time of haemoglobin deficit on Bland-Altman analysis. Eight children, after recovery from PEAA progressed to asymptomatic late-appearing anaemia (LAA).

Conclusion Asymptomatic PEAA, which may progress to LAA, is not uncommon in young children following ACTs. Its occurrence, and progression to LAA, may have implications for case management and control efforts for ACT-related anaemia in sub-Saharan Africa.

PO 8544 **USE OF XPERT MTB/RIF ASSAY AND FDA MICROSCOPY RELATIVE TO MONTHLY CULTURES IN MONITORING MULTIDRUG-RESISTANT TUBERCULOSIS PATIENTS IN BAMAKO, MALI**

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10.1136/bmjgh-2019-EDC.135

Introduction Xpert MTB/RIF assay is used extensively for the detection of rifampicin-resistant TB (RR-TB). RR-TB treatment monitoring is culture-based, although, in resource-limited settings, access to TB culture is poor. Alternative methods are needed. We therefore conducted a pilot study to determine

the performance of fluorescein di-acetate FDA vital staining, a microscopy-based test that shows viable bacilli, and Xpert threshold cycle value (Ct) changes when assessing culture conversion at the end of the intensive phase of RR-TB treatment.

Methods Between December 2015 and April 2018, we prospectively followed patients with RR-TB during the 6-month intensive phase of a 21-month standardised WHO treatment regimen. Sputum was collected and tested monthly with Auramine, FDA, Xpert MTB/RIF, and culture (Manual MGIT). Culture was considered to have converted to negative when two consecutive cultures, taken at least 30 days apart, were negative, including at least one culture between 4–6 months of treatment.

Results Forty-one patients were included in this study, 80% were male and 7% were HIV-co-infected. Conversion could not be assessed in 12 (29%) patients. Among the remaining 29 patients, 9 (31%) converted, and 11 (38%) did not convert. All 9 who converted on culture had a negative FDA, and most (6) had a Ct trend that showed a reduction of excreted DNA (increasing Ct trend). Three of these were still positive on Auramine (excretion of dead bacilli?). Of 11 patients with positive cultures, 8 tested negative on FDA, 5 tested 'MTB not detected' on Xpert MTB/RIF, and another 2 showed a reduction of excreted DNA.

Conclusion Results from culture, FDA, and Xpert MTB/RIF provide similar results among converters but contrasting results among non-converters. Longer follow-up time is needed to assess the value of these tests to predict treatment outcome.

PO 8549 ACHIEVING THE THIRD '90' AMONG KEY POPULATIONS THROUGH A DIFFERENTIATED CARE MODEL

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10.1136/bmjgh-2019-EDC.136

Background Partners in Health and Development in Africa (PHDA) is an HIV/STI research centre that serves both female and male sex workers in Nairobi. PHDA offers HIV/STI care and treatment, and prevention services to approximately 27,400 female sex workers and 1600 men who have sex with men. Currently, the organisation has 2384 HIV-positive female and male sex workers who access HIV care and treatment services within PHDA. We realised HIV viral suppression of our clients was at 78%, and therefore we came up with a strategy to reach at least 90% viral suppression.

Methods Patients who were virally suppressed, had their scheduled clinic visits reduced to twice annually, while viraemic clients visited the facility at least twice a month for directly observed therapy of ARVs. Clients who were non-viraemic (champions) and willing to participate in support groups were selected through simple random sampling to join the viraemic clients support groups. The champions encouraged the viraemic peers on the importance of adhering to treatment to gain viral suppression and reduce time spent at the facilities. Challenges and successes were also shared. This was done for a minimum of three consecutive months and graduation done upon viral suppression.

Results Eighty-eight per cent (88%; 2117/2384) of the total positives were bled for viral loads within the year; 78.3% (1658/2117) had viral suppression and 459/2117 had viral loads (VL) above 1000 copies per ml of blood. After attending the joint support groups with documented good adherence for at least three consecutive months, clients were bled for a repeat VL count, of which 84% (386/459) had suppressed. This increased the overall viral suppression from 78.3% to 93.8% (2044/2177). There was 73% risk of being viraemic if not attending a support group.

Conclusion Differentiated care clients can work with viraemic clients to increase community viral load suppression.

PO 8550 NATURE AND PREVALENCE OF MULTI-MORBIDITY IN FISHING COMMUNITIES ON LAKE VICTORIA, KENYA

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10.1136/bmjgh-2019-EDC.137

Introduction Multimorbidity, coexistence of two or more chronic conditions, is becoming more common across different demographic groups in sub-Saharan Africa. We investigate the nature and prevalence of multimorbidity in fishing communities on Lake Victoria in Kenya.

Methods We conducted a cross-sectional survey enrolling 679 participants in the fishing communities to establish the prevalence of HIV and non-communicable diseases (NCDs) and associated risk factors. The NCDs targeted included diabetes mellitus detected by random blood glucose (RBG) and kidney dysfunction detected by serum creatinine level and proteinuria. Hypertension was defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg. Diabetes mellitus was defined as RBG > 7.8 mmol/L and renal dysfunction was defined as estimated glomerular filtration rate (eGFR) < 60 mL/min or proteinuria. HIV was tested using rapid Determine assays and reactive results confirmed with UniGold assays. Additionally, participants were determined as having the condition if they reported being on medication for the condition. We analysed the results using descriptive statistics and used Chi-square test to discern if there were statistically significant differences by gender.

Results Overall, HIV prevalence was 36% while 15%, 12% and 8% of the participants were suspected to have kidney dysfunction, hypertension and diabetes mellitus, respectively. Overall, 12% of the participants had multimorbidity. The most common multimorbidity among those with any of the four chronic conditions was HIV and kidney dysfunction (29%), followed by hypertension and kidney dysfunction (22%), HIV and hypertension (20%), HIV and diabetes (18%), diabetes and kidney disease (6%) and, lastly, diabetes and hypertension (5%). Apart from HIV, we observed no statistically significant gender differences for any of the NCDs or various multimorbidity conditions.

Conclusion These fishing communities have a high burden of both HIV and NCDs resulting in high prevalence of different multimorbidities.