

PO 8569 INNOVATIVE DOMESTIC FINANCING FOR HEALTH RESEARCH & DEVELOPMENT IN THE EAST AFRICAN COMMUNITY

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Background Access to domestic financial resources is a prerequisite for strengthening health research and development (R&D). Therefore, the East African Health Research Commission (EAHRC) commissioned a study to assess the financial needs of the East African Community (EAC) region and propose innovative domestic financing mechanisms for R and D in East Africa.

Methods This study used a four-pronged approach as follows: a desk review of secondary data, followed by a survey to collect quantitative data from health R&D organisations and relevant ministries, followed by key informant interviews and, finally, a validation workshop. The study used 2014–2015 as the baseline year.

Results Only 51 out of 160 organisations responded to the survey. Using triangulation of desk reviews, national budgets documents and reported organisational budgets, the annual investment in health R&D in the EAC is estimated at USD 301.71 million of which 86% is financed from external sources. The share of health R&D financing in the GDP and health budget stood at 0.21% and 1.27% respectively, while the share of domestic financing of health R&D to GDP was as low as 0.03%

The innovative domestic financing options suggested included: allocation of 10% of the USD 560 million of the sin-taxes collected; taxing 1% of the estimated USD 3 billion from inward remittances; fundraising for at least 2.5% of the USD 18.67 private sector investment in corporate social responsibility; issuing social impact bonds and the EAC Health Research Fund with an estimated annual performance of USD 20 million.

Conclusion In order to sustain health R&D investments in EAC, the EAHRC proposes to develop a 10 year domestic financing roadmap using a strategic mix of tax- and non-tax-based innovations.

PO 8571 CYTOKINE PROFILE IN ASYMPTOMATIC SCHOOL CHILDREN CO-INFECTED WITH HELMINTHS AND PLASMODIUM FALCIPARUM IN IBADAN, SOUTH-WEST NIGERIA

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Background Intestinal helminths and malaria are among the most prevalent infectious diseases in the tropics. The effect of co-infections on immune response is not clearly understood. We therefore investigated the immune response profile in children with and without symptoms.

Methods A total of 78 afebrile school children (20 helminth/malaria-co-infected, 17 helminth-infected, 19 malaria-infected and 22 uninfected) and 75 febrile children (14 helminth/malaria-co-infected, 16 helminth-infected, 20 malaria-infected

and 25 uninfected) were recruited into the study. Helminths were screened using Kato Katz method while malaria parasite screening was done using Giemsa-stained thick blood films. Circulating TNF- α , IFN- γ , IL-1, IL-10 and IL-6 concentrations were assessed by ELISA from serum samples. Data were analysed using analysis of variance.

Results Among the afebrile school children, IL-10 was significantly increased in helminth-infected children compared with helminth/malaria-co-infected, malaria-infected and uninfected groups ($p < 0.05$). IFN- γ was significantly elevated in malaria and malaria/helminth-co-infection relative to helminth alone ($p < 0.05$). IL-1 level was significantly higher in single infection of helminth and malaria relative to co-infection and the uninfected groups ($p < 0.05$). An insignificant difference was observed for IL-6 and TNF- α concentrations across all the four groups while among febrile children. IL-6 was significantly increased among helminth alone and helminth/malaria-co-infection relative to malaria-infected group ($p < 0.05$). IL-10 was significantly elevated in co-infected group compared with helminth- or malaria-infected group while TNF- α was significantly increased in helminth and helminth-malaria co-infection compared with uninfected or malaria-infected group ($p < 0.05$). IFN- γ level was insignificant in the infection groups relative to uninfected group ($p < 0.05$); IL-1 level similar across the groups.

Conclusion Helminth infection seems to upregulate the Th2 immune response among children with symptomatic uncomplicated malaria while there were no significant changes in Th immune response among afebrile children.

PO 8572 CAUSES OF HOSPITALISATION AND MORTALITY IN CHILDREN UNDER 5 YEARS OLD, NATIONAL HOSPITAL OF GUINEA-BISSAU, 2015–2017

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Background Studying the causes of hospitalisation is useful to understand the profile of illness and identify the most effective interventions. Guinea-Bissau was projected to reduce the under-5 mortality rate from 200 to 80/1000 live births (2005–2015); and the causes of the deaths were attributed: neonatal, pneumonia, malaria and diarrhea. In 2014 the mortality rate was 55/1000 live births in Guinea-Bissau, and malaria, diarrhea and respiratory infection were the main causes of illness. The present study aims to describe the main causes of hospitalisation and death in children under 5 years in the paediatric clinic of the ‘Simão Mendes’ National Hospital.

Method Descriptive and retrospective study, with search of data from health care records. STATA and Microsoft Excel programmes were used for data analysis and cleaning. Cases defined as: children under 5 years of age, diagnosed from 2015 to 2017.

Results In 17,250 cases of hospitalisation, the overall lethality rate for 2015–2017 was calculated at 7.5%. There was an increase in the lethality rate (10.8%) in 2017. Among the main causes of hospitalisation were gastrointestinal infection (26.9%), malaria (23%), respiratory infection (17.6%) and septicemia (16.1%). Septicemia is the disease with the highest lethality rate during these three years (18%), the case fatality rate due to gastrointestinal infection in 2017 (7.7%) was

double compared with 2015 and 2016; 19% of deaths occurred for those who lived far from hospital (>40 km).

Conclusion 2017 had fewer hospitalisation cases and is the year with the highest lethality rate. Gastrointestinal infection and malaria were the main causes of hospitalisation. The rate of lethality from diarrhoea and septicaemia has increased significantly and with worse outcome in those living far from Bissau.

PO 8573 RESEARCH, MENTORSHIP AND SUSTAINABLE DEVELOPMENT: IS RETIREMENT AGE A HURDLE TO RESEARCH SUSTAINABILITY IN AFRICA?

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Background Retirement age in most of sub-Saharan Africa is between 55 and 60 years, even in academic and research institutions. There is no mechanism to retain even the few most experienced and outstanding among them. There is evidence that institutions retaining experienced researchers access better large research grants.

Methods We conducted literature review and shared views and experiences among peer research scientists

Results Most African scientists obtain their first degrees aged 25–30 years. Economic needs compounded with work experience requirements for PhD studies delay their research career development such that most PhD graduates are 40–50 years of age. However, unlike in the developed world where the majority acquire their PhDs in their late 20's or early 30's, there is no mechanism to retain them longer at work to maximise their contributions to scientific developments. Instead, African scientists are forced to retire young at 60 years of age. On the contrary, developed countries scientists graduate earlier, work longer and have retention mechanisms even after retirement. African countries do not consider retaining even the few who have demonstrated outstanding performance. Consequently, outstanding research scientists retire at the time when they are needed most. They seek and get jobs abroad or in externally owned projects (brain drain). Their decade or so of work, generates more resources abroad, depriving Africa of resource generating capacity. Secondly, retiring at the height of their performance is economically counterproductive. Thirdly, this affects negatively the career development of young scientists for lack of experienced supervisors and mentors.

Conclusion Africa must rethink the retirement age of its research scientists and create incentives to retain outstanding research scientists who reach retirement age. This is urgently needed to stop brain drain, contribute to economic

development, and accelerate ongoing efforts to build sustainable research capacity and mentorship programmes in Africa.

PO 8574 LESSONS FROM ENGAGING AND TRAINING PRIVATE AND FAITH-BASED HEALTH FACILITIES FOR THE USE OF MALARIA RAPID DIAGNOSTIC TESTS IN CAMEROON

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Background Bespoke community engagement is critical for success of any intervention. Lessons learned from engaging and training private and faith-based health facility professionals (grouped as informal health professionals [IHPs]) in Cameroon could streamline training and community engagement activities of networks like ALERRT and PANDORA. With the aim of establishing a system for monitoring malaria RDT accuracy in Cameroon, and supported by a WHO/TDR Impact grant, we tested the hypothesis that training IHPs to use follow-up visits and telephone/online support will improve their ability to perform RDT by 80%. This will also improve access to accurate malaria diagnosis and treatment in the communities served by the IHPs.

Methods We conducted a baseline survey to map target informal health facilities (GPS location, staffing, training on RDT) and challenges through focus group discussions and group questionnaires. We then organised rotation classroom for a three-day enhanced training on early diagnosis and prompt, effective treatment of malaria.

Results We found that though informal health facilities constitute approximately 30% of the country's health system capacity, IHPs were seldom included in regional RDTs training by the National Malaria Control Programme. Also, some IHPs had limited training to deliver health care services and were not registered with the Ministry of Health. Started as common initiative groups, IHPs constitute major access points for health care within communities and could be major players for community engagement within Cameroon as a sizeable population relies on them for accessible care.

Conclusion Our method is a feasible and cost-effective health worker-based approach for training and community engagement, which can help ALERRT to anticipate community preparedness for outbreaks in Cameroon and beyond.

PO 8575 EVOLUTION OF MALARIA MORBIDITY IN TWO VILLAGES IN KOROGWE, TANZANIA

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Background The malaria burden has decreased significantly in recent years in sub-Saharan Africa due to targeted interventions aimed at parasites and vectors. However, studies have