ABSTRACT

2ND LEISHMANIASIS EAST AFRICA PLATFORM SCIENTIFIC CONFERENCE

Theme: Scientific Innovation and Access for Leishmaniasis Management

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ABSTRACTS

ORAL PRESENTATIONS

WORLD HEALTH ORGANIZATION NEGLECTED TROPICAL DISEASES/LEISHMANIASIS AND SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES (TDR)

"Prospects of visceral leishmaniasis elimination in Eastern Africa: applicable lessons drawn from South East Asia elimination initiative"

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Eastern Africa is currently the largest focus for visceral leishmaniasis (VL) after the success of the Kala azar elimination program (KEP) in South East Asia. This vector borne disease caused by the parasite Leishmania donovani, causes death, economic loss, and family impoverishment, as it mostly affects the young male population and children in this area. The KEP in South East Asia, initiated in 2005, following the memorandum of understanding among the main affected countries (Bangladesh, India, and Nepal) facilitated by WHO, has achieved to bring down cases from 32,000 to less than 3,000 in 2020.

Some of the enabling factors contributing to the success of the KEP in SEA region, have been, at policy level, strong political commitment, technical inputs from Regional Technical Advisory Group (RTAG) of WHO, dedicated workforce within the robust VL national control programmes, dedicated domestic funding and experienced local research institutions and VL scientists, evidence-based strategies guided by operational research. The WHO, TDR and international community support have contributed enormously to the triumph of the KEP, reinforcing the coordination and collaboration mechanisms in countries and assisting in the generation and uptake of research findings into program.
There are many lessons from the KEP in SEA that VL programs in Eastern Africa can benefit from with due consideration of specific characteristics of the region. The disease in this geographical region has a different vector (mainly P. orientalis with P. martini in southern parts of Ethiopia) and although it affects mostly humans, animals have been incriminated as reservoirs in some areas. The VL control program in Eastern Africa has shown some progress over the last ten years. Control program strategies and common guidelines among countries are currently in place. Rapid tests are used at field level and complicated cases are referred to hospitals where medical staff are continuously trained in the high endemic areas. New

combination therapies and promising new compounds with better schemes are in the pipeline for the coming years.

One of the most important drawbacks of the VL control program in Eastern Africa has been interrupted funding from the VL donor community, as frequently other priorities are taking the funds committed to this neglected disease. The newly released WHO neglected tropical diseases (NTD) roadmap 2021-2030 has put the new global elimination target as a public health problem defined as <1% case fatality rate (CFR) for primary VL cases and gives us the framework to work towards VL elimination in Eastern Africa.

A new research platform has been created to support the post-elimination era of the KEP in SEA and this is the right time to take this as an opportunity and expand the support to the VL new elimination program in East Africa.

THE GLOBAL VECTOR HUB - BUILDING ENTOMOLOGICAL CAPACITY WORLDWIDE AND IMPROVING EPIDEMIC PREPAREDNESS

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The Global Vector Hub (GVH) is an exciting new online platform currently under development at the London School of Hygiene & Tropical Medicine (LSHTM), focusing on control of arthropod disease vectors globally. An early beta version was launched in summer 2020 in the context of the COVID-19 pandemic to address the urgent need for accurate and up-to-date information and resources on vector-borne diseases and vector control interventions. Following on from this success, a full version will be released in September 2021.

The aims of the GVH are to assist in capacity building for vector control globally, establish a community of practice for vector control interventions, and enable stakeholders to make evidence-based decisions. The main audiences of the GVH are public health officials, vector control agents and vector researchers.

The GVH consists of a community-led, online, open-access resource to provide comprehensive information on vector control and vector biology. This includes geo-tagged entomological data (including abundance data, surveillance for insecticide resistance, and pathogens vectored) and epidemiological data, a searchable registry and worldwide network of vector researchers and vector controllers, and a comprehensive resource database of training and educational materials, vector control guidelines and research tools. In addition,

the Special Programme for Research and Training in Tropical Diseases (TDR) and the Global Vector Hub have developed a web-based global directory of medical entomology courses as a new resource for strengthening the capacity of scientists combating neglected tropical diseases and other vector-borne diseases. The directory currently lists a total of 126 medical entomology courses offered both on-campus and through distance learning in 32 countries across all WHO regions, covering seven languages. The freely available directory was developed in collaboration with the GVH and ARCTEC at LSHTM, following the mapping of courses available globally. WHO's Department of Control of Neglected Tropical Diseases and the WHO Global Malaria Programme have also reviewed the directory and provided recommendations. For each course, session dates, course outline, fees, language of instruction and responsible managers are listed.

We are also planning to include versions in Spanish, French and Portuguese as soon as possible. You can learn more about the GVH (and register) here: https://globalvectorhub.lshtm.ac.uk/

The GVH will engage with and transform collaborations between individuals and groups of stakeholders with interests in global vector-borne disease control, with active discussion forums open to the GVH users to ensure lessons are learned, knowledge gaps are identified, and impact is demonstrated and shared in every region.

***Keywords:** Vector control; vector research; capacity building; community of practice; epidemic preparedness.*

DEVELOPMENT OF A DIAGNOSTIC RULE FOR IDENTIFYING A SUSPECTED CASE OF POST-TREATMENT RELAPSE: AN INDIVIDUAL PARTICIPANT DATA META-ANALYSIS USING THE IDDO VISCERAL LEISHMANIASIS DATA PLATFORM

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In clinical trials of visceral leishmaniasis (VL), patients who achieve initial cure at the end of the treatment period are usually followed-up for at least six months. During the post-treatment follow-up, patients are clinically suspected of relapse if they have a recurrence of one or more signs and symptoms of VL such as anaemia, fever, or palpable large spleen. Patients with a high index of suspicion undergo invasive procedure of collecting tissue aspirates from bone marrow or lymph node for parasitological confirmation. Such invasive

examination of tissue aspirates have safety concern and are costly. A validated diagnostic rule to identify patients suspected of relapse might reduce the number of invasive examinations.

This study intends to describe the preliminary assessment of the feasibility of developing an algorithm based diagnostic rule to identify patients suspected of relapse using the data hosted at Infectious Diseases Data Observatory (IDDO) VL data platform.

The openly available inventory list of the clinical studies hosted at the IDDO VL data platform were accessed on June 2021 (https://www.iddo.org/vl/data-sharing/accessing- data). The IDDO VL data platform currently hosts data from 43 VL clinical studies with individual participant data on more than 8,000 patients. Studies that defined relapse using parasitological confirmation and followed-up patients for at least 6 months were identified. A sample size calculation was performed to assess the minimum number of patients required for development of a diagnostic rule using "pmsampsize library" in R software allowing for event rate, model performance, and number of potential predictors.

Fifteen studies (treating 5,166 patients) hosted at the IDDO VL data platform had at least 6 months of post treatment follow-up and defined relapse based on demonstration of parasite in the tissue aspirates. The number of relapses were clearly reported in 13 studies (4,726 patients) with a total of 211 parasitologically confirmed cases of relapse detected during the post-treatment follow-up. The median proportion of relapse was 4.0% [range: 0.8% - 11.9%]; the pooled proportion of relapse using random effects meta-analysis was 4.0% [95% confidence interval: 2.6% to 6.0%]. If 20 predictors are considered for model development with model R-squared assumed at 0.15, sample size calculation indicated requiring at least 1,265 patients for reliably developing a diagnostic algorithm.

The IDDO VL platform hosts a critical mass of data from clinical trials that can be used for development of a diagnostic algorithm for defining suspected case of relapse. Efforts are currently underway to seek access to the individual participant data from the 15 eligible studies for developing the diagnostic algorithm. Preliminary results and progress on the modelling effort will be presented.

Keywords: Visceral Leishmaniasis, relapse, parasitology, clinical prediction rules, prognostic modelling, data platform, individual participant data meta-analysis

INVESTIGATION OF THE INTERACTIONS OF SOME ANTI-LEISHMANIAL NATURAL COMPOUNDS WITH POTENTIAL PROTEIN TARGETS: AN IN-SILICO APPROACH

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The neglected tropical disease (NTD), leishmaniasis, represents a significant health burden in large parts of the world, threatening almost 350 million people worldwide with about 2 million new cases reported annually. A detrimental feature of the NTDs such as leishmaniasis is their ability to promote poverty because of the toll on child development, pregnancy outcome, and worker efficiency. Current therapeutics for treating leishmaniasis fall short with regards to efficacy and target specificity. Many plant-derived compounds have been evaluated for their anti-leishmanial activities in vitro – some with very promising activities. However, their molecular targets are unknown, and this derails efforts towards rational optimization of some of these compounds into drug leads.

To evaluate the binding affinity and explore the molecular interactions of fifteen (15) plant- based anti-leishmanial compounds with two validated targets of the Leishmania parasite, trypanothione reductase, and pteridine reductase using in silico techniques.

The crystal structures of the protein targets were retrieved from the Protein Data Bank. A library of compounds was built based on their reported anti-leishmanial activity. Validation of docking protocol was carried out before docking. Molecular docking was used to examine the nature and strength of the predominant binding mode(s) of the compounds to the proteins whereas the SwissADME webserver was used to predict the drug-likeness of the compounds.

The selected natural products bound to the trypanothione reductase and pteridine reductase 1 with binding energies ranging from -9.0 to -4.2 and -10.4 to -4.8 kcal/mol respectively. Pristimerin and ismailin established strong interactions with key amino acid residues needed for inhibition in pteridine reductase 1 (Phe113, Tyr194, and Asp181) and trypanothione reductase (His461 and Glu466) respectively. The drug-likeness model predicted scores between -1.14 to 0.66 indicating that these compounds are fairly drug-like Hence these fifteen (15) natural products induce their anti-leishmanial activity by targeting trypanothione reductase or pteridine reductase 1 or both. Along the line of anti-leishmaniasis drug discovery, this study could solve the problem of target specificity and promote the optimization of these natural products into potential lead compounds.

Keywords: Molecular docking, Leishmaniasis, in-silico, binding affinity, drug-likenes

CAPPARIS SPINOSA INHIBITS LEISHMANIA MAJOR PROMASTIGOTE AND AMASTIGOTE GROWTH THROUGH INDUCTION OF NITRIC OXIDE PRODUCTION

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Capparis spinosa is an aromatic plant, rich in active compounds such as flavonoids, which have been reported to have a wide range of biological activities, including antioxidant and anti-inflammatory effects. Cutaneous leishmaniasis (CL) is an infectious disease caused by various Leishmania species and remains a major public health problem in Morocco. Its zoonotic form caused by Leishmania major (L. major) is the most prevalent in this country. The parasite life-cycle involves two stages: the promastigote insect stage and the amastigote vertebrate stage. Moreover, the first line treatment of CL is based on pentavalent antimonials, but present several limitations including high cost, toxicity, and therapeutic failure. In this regard, the search for antileishmanial bioactive substances as a therapy option for this disease is crucial.

The purpose of this study was to analyze the phytochemical components of C. spinosa aerial part and to evaluate their in vitro activity against L. major promastigote and amastigote growth.
C. spinosa plant was collected from Ras El Ain (Settat, Morocco), in February 2017. Aqueous and methanolic extracts were prepared and total polyphenol and flavonoid contents were determined by colorimetric assays. The antioxidant activity was determined by the Reducing Power assay and DPPH test. The effect of methanolic and aqueous extract was assessed on the L. major promastigote (MHOM/ MA/ 2017/ Z41) amastigote form using MTT assay and Trypan blue exclusion method. The nitric oxide (NO) production was investigated through the measurement of nitrites concentrations in murine peritoneal macrophages supernatant, by Griess method. The significance of the results was calculated using one-way ANOVA analysis of variance with Tukey's post-hoc test for multiple comparisons was implemented using GraphPad Prism version 8.0.

Our results showed that C. spinosa extracts contained polyphenols and flavonoids at varying concentrations. The methanolic extract showed a higher content of total polyphenols and flavonoids (21.235 ± 1.08 mg EAG/g, 9.01 ± 0.2 mg QE/g, respectively) compared to the aqueous extract (15.95 ± 0.4 mg EAG/g, 7.97 ± 0.9 mg QE/g). The methanolic extract showed higher antioxidant activity in both tests, Reducing Power and DPPH (EC50: 0.31 and 7.69 mg/ml, respectively) compared to the aqueous extract (1.87 and 12.95mg/ml, respectively). Both extracts significantly inhibited ($P < 0.001$) promastigotes and amastigotes growth in vitro, in a dose-dependent way. The percentage of inhibition of methanolic and aqueous extract ranged respectively from 58% and 22% to 76% and 72%.

The IC50 value for methanolic and aqueous extract on promastigote form was 25µg/ml and 100µg/ml, respectively, while for amastigote form was 25µg/ml and 50µg/ml. Both extracts induced NO production by macrophages in a dose-dependent way with no toxic effect on murine macrophages.

The methanolic extract presented the highest concentrations of polyphenols and flavonoids compounds as well as an important antioxidant activity. Furthermore, the methanolic and aqueous extract showed promising leishmanicidal activity in vitro on the promastigote and amastigote form of L. major through the induction of NO production. This plant might be a significant source for the treatment of leishmaniasis in humans. Further studies are in progress to enlarge the assays on more strains and investigate the mechanisms underlying its activity in vitro and in vivo.

Key words: Capparis spinosa, antioxidant, leishmanicidal, Leishmania major, promastigotes, amastigotes, NO production.

IMMUNOLOGICAL DETERMINANTS OF CHRONIC VISCERAL LEISHMANIASIS IN HIV-COINFECTED PATIENTS

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Even after apparent parasitological and virological suppression, a significant proportion of HIV-coinfected visceral leishmaniasis (VL) patients exhibit a persistent disease course characterized by frequent VL relapse. This chronic condition becomes progressively harder to treat after every recurrent relapse. Although a low CD4+ T cell count and chronic immune activation-associated CD8+ T cell exhaustion have both been associated with predisposition for VL development after Leishmania infection, little is known on the immunological characteristics underlying recurrent relapses.

We characterized the phenotype and evolution of the cell-mediated immune response in the blood of HIV patients across the (chronic) VL disease course with conventional targeted as well as unbiased methods.

The study was embedded in a recruited cohort of >500 HIV patients in North-West Ethiopia that was followed at 3 monthly intervals (PreLeisH cohort at the Abdurafi Health Centre and Gondar Leishmaniasis Research and Treatment Centre). The first 24 HIV patients that developed VL between 2017 and 2019 were included in this study and monitored for disease

relapses. Symptomatic VL-HIV patients received AmBisome (total of 30 mg/kg) and miltefosine (100 mg/day) for 28 days. The symptomatic VL-HIV patients were divided into a primary VL-HIV group with no VL history and no relapse episode during post-treatment follow-up (pVL-HIV), a historic VL-HIV group with VL history prior to study onset and no subsequent relapse after treatment within the study duration (hVL-HIV), and a chronic VL- HIV group with VL history and frequent disease relapse during the study (cVL-HIV). These patient groups were compared against both a selection of 20 asymptomatic Leishmania- infected HIV patients and 20 non-Leishmania-infected HIV patients. Circulating (NK)T cell subsets were phenotyped with 10-parameter flow cytometry on cryopreserved PBMCs that were collected at regular intervals during the study duration. PBMCs of two patients of each disease group (n=10) were selected for simultaneous single-cell RNA sequencing and T cell receptor profiling.

All 24 symptomatic VL-HIV patients (pVL-HIV n=5, hVL-HIV n=6, cVL-HIV n=13) were male and 96% was on antiretroviral therapy. Patients were followed for a median of 6 (IQR: 3-6) months before first study treatment and 12 (IQR: 6-17) months after first study treatment. The hVL-HIV and cVL-HIV groups had a median of 2 (IQR: 1.25-5.75) and 2 (IQR: 1-8) episodes of VL at baseline, respectively. However, following antileishmanial treatment during our study, the cVL-HIV group had a median of 2 (IQR: 1-2) relapses while the hVL-HIV patients exhibited successful long-term cure (>1y). The expression of general cellular functionality markers of (NK)T cell subsets (CD107, IFNγ) and the expression of CD4+/CD8+ T cell-associated activation, differentiation and regulatory markers (CD57, KLRG1, LAG3, PD-1, TIM3, TIGIT and CD95) were compared between patient groups. In the cVL-HIV patients, a higher and persistent expression of the exhaustion markers PD-1, LAG3, TIM3, and TIGIT was observed on CD8+ T cells compared to the other groups. Cured pVL-HIV and hVL-HIV patients, but not cVL-HIV patients, showed decreased LAG3 and TIM3 expression after treatment. Unbiased single-cell RNA sequencing on a total of 22.367 sequenced cells to an average depth of 5247 reads/cell and 1619 genes/cell confirmed these findings at the transcriptional level. Furthermore, it demonstrated that CD4+ T cells exhibited a more activated and cytotoxic profile in the pVL-HIV patients than in the cVL-HIV patients. Antileishmanial treatment further stimulated this cytotoxic CD4+ T cell gene expression profile in pVL-HIV patients but not in the cVL-HIV patients. In addition, we observed a decreased number of CD14+ monocytes in cVL-HIV patients as compared to the other groups. In the antigen-presenting cells (APC) of cVL-HIV patients, only four genes were differentially expressed between the beginning and end of treatment, compared to 332 genes in pVL-HIV patients. Several of these genes were functionally important, including HLA gene variants, for which upregulation was observed in the APC of the pVL-HIV group at the end of treatment. Finally, we observed a hyperreactive clonal expansion in both CD4+ and CD8+ T effector memory cells at the end of treatment in the successfully treated pVL-HIV patients.

Our preliminary data suggests that functional cytotoxic cell profiles are crucial in VL-HIV-coinfected patients to compensate for the HIV-driven loss in CD4+ T cell functionality. The finalized analyses will shed light on the cellular profile and importance of patient immune responses underpinning chronic VL disease. Our comprehensive immunological survey aims

to generate insights that can be directly wheeled to improve patient management and treatment of VL-HIV patients.

Key words: Visceral Leishmaniasis; HIV; VL-HIV; Chronic VL-HIV; Relapse VL HIV; Immunology; Cellular immunity; Single-cell RNA sequencing; Flow Cytometry; T cell receptor profiling.

EFFECTS OF COVID-19 ON ACTIVITIES ON VISCERAL LEISHMANIASIS IN UGANDA

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Covid-19 (SARS-CoV-2) was first reported from Wuhan Province in China in December 2019. The disease was later declared a pandemic by WHO in March 2020. In Uganda, the first case of Covid-19 was reported in the same month. A total country lockdown to contain the virus spread was instituted for 60 days from April to May 2020. A second lockdown was instituted for 42 days from June to July 2021. Apart from limited knowledge about the disease coupled with mortality and morbidity, panic, uncertainty, psychosocial issues, job losses, prolonged closure of schools among others, Covid-19 has had impact on the management and control of visceral leishmaniasis VL, and other diseases including neglected tropical diseases (NTD).

Visceral leishmaniasis (VL) is caused by a protozoan parasite L.donovani. It is a poverty related disease and is fatal if left untreated. The disease is endemic in the northeastern part of Uganda, Karamoja subregion. Amudat hospital serves a population of about 200,000 people and is located in the endemic focus of VL. It is the only hospital dedicated for the treatment for VL in Uganda. It also serves as a research and training centre for VL. Our aim was to determine the impact of Covid-19 pandemic on VL management, research and training programmes of VL in Uganda. This would enable proper planning for VL activities in the Covid-19 era.

Information and data on management of VL patients was collected from Amudat hospital records from 2018 to 2021 coupled with personal discussions with hospital staff.

Since the emergence of the pandemic, no case of VL/Covid-19 coinfection has been reported in Amudat hospital, although some patients and staff in the hospital tested positive for Covid-19. Interestingly, the overall number of patients attending the Outpatient department were not markedly reduced during the covid-19 compared to pre-covid period. However, there was a slight increase in the number of VL cases from an average of 93 in the pre-covid-19 (2018 and 2019) compared to 133 cases confirmed and managed during Covid-19 period (2020). Active case finding for VL is conducted routinely at

Amudat site, however the increase could be partly attributed to intense tracing and screening of VL cases from communities of the index VL cases admitted at the Hospital which had just been started at the time of lock-down. Follow-up of some participants on a VL clinical trial (DNDi-MILT/PM-01-VL) was delayed for some participants from Kenya due to border closure at that time. Monitoring visits for the same trial had to be conducted by zoom links. The links were most times unstable and inaudible because of remoteness of Amudat. The yearly training visits to Amudat, by students from the London School of Tropical Medicine and Hygiene pursuing diploma courses were also cancelled. Our local students could also not travel to the field because of restrictions on inter-district travel.

There was no significant impact of Covid-19 on the number of patients attending the Outpatient Department. Of interest was the slight increase in the number of VL cases recorded during Covid-19 pandemic compared to pre-covid. This could partly be explained by intense tracing and screening of VL cases from communities of the index VL cases admitted at the Hospital which had just been started at the time of lock-down. More evidence need to be gathered over time to come up with conclusive evidence on the effect of Covid-19 on VL. Generally, some of the positive aspects of the pandemic to the hospital included increased hygiene and public health awareness among the staff and communities and donation of additional pieces of equipment and medicines for patient management.

KEY TOOLS TO RAISE FUNDS FOR PROJECTS AND ORGANISATIONS IN AFRICA

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Obtaining funds for projects and organizations is a demanding task with many challenges, especially in times of global health and economic crisis. Now more than ever, research organizations need to master the fundraising methods, techniques and tools to ensure their projects come to fruition. The presentation will cover several essential. The topics presented are aimed at African leaders seeking funding for their projects and organizations.
This presentation aims to answer the following questions: 1. What are the different types of funding for my organization or project? 2. How can I identify the donors who provide funds in my country and sector? 3. Where can I search for calls for proposals? 4. How can I increase my chances of being funded? 5. Steps to start fundraising for my organization today.
The Covid-19 pandemic presents both challenges and opportunities to organizations seeking to raise funds for their projects. Fundraising efforts have multiplied in a fast-changing global environment, and it is essential that organizations possess the necessary knowledge to benefit from the funding opportunities offered.

Keywords: Africa, donors, fundraising, proposals, funding, projects

POSTER PRESENTATIONS

LEISHMANIASIS INFECTION AMONG THE MIGRANT POPULATION OF EUROPE: A SYSTEMATIC REVIEW

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The launch of the second World Health Organization (WHO) Neglected Tropical Disease Roadmap 2021-2030 has highlighted the burden that parasitic infections such as leishmaniasis can place on individuals and populations. The call from the roadmap to end this neglect to attain Sustainable Development Goal 3 is a global one and given increasing population mobility through travel and migration, it is important to consider low and non-endemic countries as part of this call.

To systematically identify and synthesise evidence on the burden, epidemiology and clinical features and outcomes of leishmaniasis infection in international migrants to WHO Europe. A systematic review of literature published after 1st January 2000 was undertaken in accordance with PRISMA guidelines. The inclusion criteria were defined as international migrants of all ages residing in countries within WHO Europe with a diagnosis of cutaneous (CL), mucocutaneous (MCL) or visceral leishmaniasis (VL). We searched Medline, Embase, Global Health, Web of Science and Scopus databases and the reference lists of any included systematic reviews were also screened to check for additional articles to be included. Data on clinical features and epidemiology were extracted independently by two reviewers, cross-checked for consistency and analysed thematically.

In total, 87 papers were included in the review. Data from 7,546 migrants originating from 56 countries across five continents (Europe, Asia, North and South America and Africa) who had migrated to 16 countries in WHO Europe were included. Demographic data were available for 7196/7546 (95.4%) patients: 4,398 were male (58.3%) and 2,798 were female (37.1%) with age range seven months to 95 years. There were 4170 cases of CL, 23 cases of MCL and 372 cases of VL were presented. The form of leishmaniasis was not defined in 2981 cases. The most common causative organisms were Leishmania tropica in CL patients and Leishmania infantum in VL patients. Time from symptom onset to diagnosis among CL patients ranged from two weeks to 32 months. A range of post-treatment sequelae in CL and MCL patients was described, including significant scarring, post inflammatory hyper- and hypopigmentation and soft palate thickening causing dysphagia. Among the 415 migrants whose clinical outcomes were reported, there were 13 deaths (3.13%), 12 VL patients and one CL patient.

The results of this review demonstrate that leishmaniasis remains a significant cause of morbidity and mortality among the migrant population in Europe. Clinicians should give

early consideration to the diagnosis of leishmaniasis when reviewing migrants who have travelled from or through endemic regions of the world, as well as immunocompromised patients including those living with HIV. Timely diagnosis of leishmaniasis may improve clinical outcomes and decrease mortality and morbidity rates among this cohort. Increasing clinical outreach services in refugee camps and detention centres may also provide more timely access to healthcare for this cohort which may also improve clinical outcomes.

Keywords: Leishmaniasis, migrant, migration, neglected tropical disease, epidemiology, Europe

EPIDEMIOLOGY OF VISCERAL LEISHMANIASIS IN KENYA, JUNE-DECEMBER 2020

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Visceral Leishmaniasis (VL), also known as kala-azar, is caused by a protozoal parasite of the Leishmania donovani complex. Globally, the disease causes mortality rates as high as 95% within 2 years if left untreated. In Kenya, the disease is endemic in more than 20 sub-counties within the arid and semi-arid regions. Kenya seeks to achieve a 60% reduction in morbidity and mortality attributable to VL by 2025. Improved case management is crucial in order to improve treatment outcomes and achieve this objective. Treatment in Kenya is by co-administration of sodium stibogluconate and paramomycin to reduce morbidity and mortality.

We describe the treatment of cases that have been reported in the endemic sub-counties in the country by the Ministry of Health with assistance from ASCEND. We retrospectively reviewed aggregate data entered into the Division of Vector Borne and Neglected Tropical Disease (DVBNTD) Kenya Health Information System (KHIS) platform for the period June-December 2020. Data on the number of male and female clients treated, cured and those with treatment failure after completing treatment with the prescribed antibiotics were analysed.

A total of 454 cases were treated for visceral leishmaniasis, males contributing 323 (71%) of the cases. Cure rates for females was 97% (127/131) and for males 96% (310/323). Turkana county had 198 (43.6%) cases, Kitui had 86 (18.9%), Garissa had 66 (14.5%), Wajir had 56 (12.3%), Baringo had 27 (5.9%), Marsabit had 18 (3.9%) and Isiolo had 8 (1.7%) cases. Turkana Central Sub County contributed 102 (22.5%) of all cases treated, followed by Mwingi Central with 86 (19%). All sub counties had 100% cure rate except Loima (77.1%), Mwingi Central (94.2%), Turkana Central (97.1%) and Turkana West (98.2%) in Turkana and Kitui Counties. The month of October 2020 accounted for 116 (25.5%) of the

cases treated with July 2020 having 30 (6.6%) cases treated.

Males were generally more affected by the disease and had a lower cure rate compared to females. Turkana county had a higher burden of disease and treatment failure and should be prioritised in preventive and case management interventions.

Keywords: Leishmaniasis, Visceral, Case Management, Morbidity, Treatment failure

LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY IMPROVES THE DIAGNOSIS OF CUTANEOUS LEISHMANIASIS DUE TO LEISHMANIA AETHIOPICA: A PRELIMINARY FINDING

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Cutaneous leishmaniasis (CL) is a public-health problem in several highland areas of Ethiopia. Current diagnosis is based on microscopic examination of Giemsa's stained smears from skin scrapings or fine needle aspirates. However, its sensitivity is in general low, variable and examiner dependent. There is no data on the utility of loop-mediated isothermal amplification (LAMP) assay for CL diagnosis due to L. aethiopica.
In this prospective study, 26 CL cases were examined by microscopy and the LAMP assay. LAMP targets the 18S rRNA gene and the kDNA minicircles the Leishmania genome. We determined whether the algorithm of microscopy plus the commercially available Loopamp Leishmania Detection Kit (Eiken Chemical Co., Japan) improved the diagnosis of CL compared to microscopy only.

Of all the CL cases, 18 [69.2% (95% CI: 48.21-85.67)] were positive by microscopy only. When LAMP was added in addition to microscopy, an additional 4/8 (50%) microscopy-negative cases were positive by the LAMP assay; thus increasing the positivity rate to 84.6 (95% CI: 65.13-95.64).
The findings demonstrate, for the first time, that LAMP improved the diagnosis of CL due to L. aethiopica. Using the algorithm microscopy plus LAMP may serve as a potential assay for improving the diagnosis of CL in a setting where L. aethiopica is endemic.

THE TRANSLATIONAL PROSPECTIVE OF SECRETORY PROTEINS OF MYCOBACTERIUM TUBERCULOSIS ENCAPSULATED IN BIO-POLYMERIC NANOPARTICLES: AN INTERPLAY OF IMMUNE RESPONSE AND OXIDATIVE STRESS

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Mycobacterium tuberculosis (M.tb.) resides within macrophages of the host, and completely evades the immune surveillance by secreting proteins that are immunogenic and provoke protective immunity. The study aims at developing nanoparticles carrying two secretory proteins of M. tb. - CFP-10 and CFP-21 and evaluating their potential to invoke an immune response coupled with the oxidative stress when encapsulated in chitosan nanoparticles. Chitosan nanoparticles were prepared in the size range of ~250 to ~300nm having a zeta potential +41mV, and an entrapment efficiency for CFP-10 ~16% and for CFP-21 ~18%. The FTIR studies indicated that the terminal phosphate group of TPP gets bound with amine (NH2) group of chitosan by ionic bond. The characteristic peak of C-N (1250-1375-1) was present in FTIR of Chitosan along with other peaks. But in chitosan nanoparticles there was a distinct shift of the peak to 1564.03cm due to the wagging of NH2 bond. The release pattern of both CFP-10 and CFP-21 from the chitosan nanoparticles followed a zero order kinetics (r2= 0.7689), and (r2 = 0.836) respectively. The cytokine levels of IFN-γ, TNF-α, IL-12, IL-17, IL-2, IL-10 and IL-4 were observed to be significantly increased for CHNP CFP-10 and CHNP CFP-21. CFP-10 and CFP-21 per se primed cells demonstrated a Th1 biased T cell response in an ex vivo assay.

To further analyze the potential of the nanoparticles to cause oxidative stress, various biochemical assays were determined in the mice treated with CFP-10, CFP21, void CHNP, CHNP CFP-10 and CHNP CFP-21 in liver, lung and spleen post 7 days and 21 days of injection. The GST levels were lowered indicating oxidative stress in all the organs on Day 7. But post Day 21 of injections, enhanced GST levels indicated reduced or no oxidative stress in the tissues. The enhanced levels of IFN-γ and IL-12 clearly indicate a Th1 response coupled with low levels of GSH. There are also indications that GSH and associated enzymes play a role in cellular immunity. GSH levels and antigen-presenting cells determine whether a Th1 or Th2 pattern of response predominates. The Th1 response is characterized by production of IL-12 and IFN-γ and the enhancement of delayed hypersensitivity response; Th2 by IL-4 and IL-10 production and up-regulation of a number of antibody responses. Therefore, interplay of immune response, ROS and RNS created by secretory proteins of M.tb. encapsulated in nanoparticles indicated interesting results which warrant detailed evaluation on the signaling pathways to ascertain the extent of interdependence. The results suggested that the ChN-CFP10 nanoparticles have both protective and therapeutic potential against M.tb.

DEVELOPMENT OF A TROPICALLY STABLE, NOVEL ORAL FORMULATION OF AMPHOTERICIN B TO TREAT VISCERAL LEISHMANIASIS

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Visceral leishmaniasis (VL) is a systemic form of a vector-borne parasitic disease caused by obligate intra-macrophage protozoa of the genus Leishmania. VL is always fatal in humans if left untreated and treatment options are limited. Amphotericin B (AmB), a polyene antibiotic, is the most active antileishmanial agent that currently exists. Liposomal AmB (AmBisome) is used as first-line treatment in developed countries; however, the requisite parenteral administration and the high cost of the liposomal formulation prevents this treatment from reaching the majority of patients in developing nations. A stable, efficacious oral treatment for VL that is able to withstand the rigors of tropical climates would overcome many of the current barriers to treatment that exist in countries with large VL-infected patient populations. In this study we have developed an oral formulation of AmB that is stable in tropical conditions and exhibits significant antileshimanial activity in mice.
To develop an oral formulation of amphotericin B (AmB) that is stable at the temperatures of WHO Climatic Zones 3 and 4 (30-43 °C) and to evaluate its efficacy in a murine model of visceral leishmaniasis (VL).

The stability testing of four novel oral lipid AmB formulations composed of mono- and di-glycerides and pegylated esters (iCo-010 to iCo-013) was performed over 60 d and analyzed by HPLC-UV. In addition, the four formulations were incubated 4 h in fasted-state simulated intestinal fluid. AmB concentration was measured spectrophotometrically and emulsion droplet diameter was assessed by dynamic light scattering. Antileishmanial activity of iCo- 010 was evaluated at increasing oral doses (2.5 to 10 mg/kg) in a murine model of VL.

AmB stability in the lipid formulation (iCo-010) was >75% over 60 days. After 4 h in fasted-state simulated intestinal fluid, AmB concentration was >95%. iCo-010 demonstrated significant efficacy when orally administered to VL-infected mice bid for five days (inhibition of 99%, 98%, and 83% at 10, 5 and 2.5 mg/kg compared to the vehicle control). In addition, the qd dose of 20 mg/kg provided 96% inhibition compared to the vehicle control.

The oral AmB formulation iCo-010 is stable at the temperatures of WHO Climatic Zones 3 and 4 (30-43 °C). iCo-010 showed excellent antileishmanial activity at both 10 mg/kg po bid for 5 days (<99% reduction in parasitic infection) and 20 mg/kg po qd for 5 days (95% inhibition when compared to control).

Keywords: Visceral Leishmaniasis; oral formulation; tropically stable; amphotericin B; mice model; antileishmanial activity

BUILDING CAPACITY FOR IMMUNOLOGICAL RESEARCH AND FLOW CYTOMETRY EXPERTISE IN UGANDA

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The burden of neglected tropical diseases (NTDs) still pose a challenge to health care in poor resource settings. Visceral leishmaniasis (VL) accounts for 2 million annual incident cases with 95% case fatality if left untreated. In Eastern Africa, VL caused by the protozoan parasite Leishmania donovani is endemic in foci, in Sudan, Ethiopia, Kenya and Uganda. To strengthen the clinical research capacity of the institutions in the region, Leishmaniasis East Africa Platform (LEAP) was formed between (Institute of Endemic Diseases (IEND,Sudan), University of Gondar (UoG, Ethiopia), Kenya Medical Research Institute (KEMRI, Kenya) and Makerere University (MAK, Uganda).

We aimed at strengthening the capacity of immunological research and flow cytometry expertize in Uganda. To further strengthen the capacity in immunological research within LEAP, we leveraged on the success and collaborations already established in LEAP in the region to obtain funding from EDCTP (PREV-PKDL). This funding is a highly significant investment in understanding the immunological responses during infection with the parasite and development of vaccines against leishmaniasis.

Under the PREV-PKDL project, we recently acquired a cytoflex LX flow cytometer, a 19-parameter, state of the art, user-friendly, high-resolution machine. This piece of equipment has supported a number of students from undergraduate to post graduate levels in Ugandan universities and other tertiary training institutions in the country to conduct excellent studies. The newly established Department of Immunology and Molecular Biology at Makerere University College of Health sciences has in addition received more equipment for immunological studies from this funding. The field laboratory at Amudat hospital, which is based in VL endemic region, has also been renovated and equipped to conduct immunological studies.

The objective of strengthening the capacity of immunological research and provision of state of the art flow cytometry expertise feeds into the aim of strengthening clinical research in the LEAP member states to support future clinical research programs including vaccine and drug trials. More resources and equipment coupled with resource sharing, collaborations, webinars, and hands on training for researchers in Makerere University and region will strengthen our aim to control VL and other poverty related diseases.

Keywords: Visceral leishmaniasis, Leishmania donovani, flow cytometry

MULTIPLEXED QPCR PANELS TO DIFFERENTIATE CLINICALLY RELEVANT LEISHMANIA SPECIES UTILISING BISULPHITE CONVERSION TECHNOLOGY

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The accurate and sensitive diagnosis of Leishmania species in clinical cases of leishmaniaisis represents an important and essential step in the treatment and control of these diseases. Leishmania infections cause serious morbidity and mortality globally, often affecting the world's most disadvantaged people. Transmitted by the bite of a female sandfly, if left untreated the cutaneous or mucocutaneous form can result in chronic skin ulceration or scarring and the visceral form can result in death.
We set out to develop qPCR assays for Leishmania on the mini-exon gene, combined with bisulphite conversion technology for the rapid and reliable detection and differentiation of global Leishmania species using automated platforms. The assays were to differentiate amongst the main species complexes including L. Viannia subgenera, the L. donovani species complex, the L. major species complex, the L. tropica species complex and within the L. mexicana species complex.

In this study, multiplexed qPCR panels for the diagnosis of Leishmania species complexes were created using the mini-exon gene as a PCR target, in conjunction with bisulphite DNA conversion technology. The assays include both endogenous and exogenous controls to ensure quality control of the qPCR. The sensitivity and specificity of the assays were tested using DNA sourced from clinical cases of leishmaniasis imported into Australia (from returned travellers, defence force personnel and migrants from around the globe) as well as potentially cross-reacting organisms, including fungi, bacteria, mycobacteria, viruses and human and bovine DNA.
The results were compared to those derived from a widely-used conventional ITS1-PCR RFLP method. This study demonstrated the multiplexed qPCR assays to be highly sensitivity and specific, with clinical sensitivities and specificities of 97 and 100% respectively. Furthermore, limits of detection of between 1-80 copies/PCR reaction were achieved, dependant upon the species tested. A limitation of this technology is that L. braziliensis and L. guyanensis complexes were unable to be distinguished from each other.
These assays now address the need for a standardised, differential diagnostic test ready for the clinical market, of which none currently exists.

Keywords: Molecular diagnostics, bisulphite, automation, qPCR, multiplex, leishmaniasis

ANALYSIS OF CHANGES IN MITOCHONDRIAL MEMBRANE POTENTIAL AFTER PHOTODYNAMIC THERAPY IN LEISHMANIA PROMASTIGOTES

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Leishmaniasis is a zoonotic disease, considered by the WHO as a public health problem that has been showing a significant increase in recent years. Conventional treatment is toxic and leads to serious side effects. Photodynamic therapy has been studied as an alternative treatment for cutaneous leishmaniasis.

This study aimed to evaluate changes in the mitochondrial membrane potential (Δψm) of Leishmania braziliensis and Leishmania major species, at two different times – immediately and 18 hours after the application of PDT using curcumin as a photosensitizer at 3 different concentrations.

Rhodamine 123 (Rho 123) was used to evaluate the potential of the mitochondrial membrane (Δψm) in cells. After PDT, the parasites were resuspended in 10 μg. mL-1 Rhod 123 and incubated for 40 minutes. Then, cells were washed and resuspended in PBS, placed on slides prepared with ProLong™ Live Antifade Reagent (Thermofisher), and analyzed in a confocal microscope (Zeiss LSM 700) with a 488 nm filter. Quantification of the fluorescence emitted by Rhod 123 was performed with the ImageJ software. Measurements were taken immediately after PDT and after 18 hours. Group comparisons were made using two-factor ANOVA and Tukey's test for multiple comparisons. Data were expressed as arithmetic mean
± standard deviation. Values were considered statistically significant when the p value was ≤ 0.05.

Immediately after PDT, both in L. braziliensis and in L. major, there was an increase in mitochondrial activity dependent on the presence of PS, since all groups treated with curcumin showed greater fluorescence than the untreated control. In the analysis after 18 hours of exposure to PDT, L. braziliensis showed lower mitochondrial activity compared to results obtained immediately after PDT. However, the irradiated control showed increased mitochondrial activity, which may suggest that there was interference of blue light in mitochondrial activity. In L. major, the untreated control and the dark treatment with curcumin 125 μg. mL-1 showed an increase in mitochondrial activity, while treatments with curcumin 500 μg. mL-1 decreased, both in the dark and irradiated groups. The increase in Δψm in some groups may indicate that the surviving cells still had high mitochondrial activity, and after 18 hours they lose these characteristics, especially at the concentration of 500 μg mL-1, both dark and the irradiated group. Some difficulties for analysis with Rhod 123 are its sensitivity to any disturbance, such as time, electron transport flux and dye

quantity. However, it is evident that studies involving the use of PDT in leishmaniasis resulted in changes in the end and curcumin has been shown to be a good photosensitizer.

Keywords: Leishmania, curcumin, PDT, mitochondrial membrane potential, Rhodamine 123.

SOLUBLE ADENYLATE CYCLASE OF LEISHMANIA DONOVANI (LDHEMAC) INDUCED CYCLIC AMP UPREGULATES NRF2 MEDIATED HEME OXYGENASE-1 EXPRESSION PROMOTES ITS INTRA-MACROPHAGES SURVIVAL AGAINST OXIDATIVE STRESS

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Leishmania donovani, a protozoan parasite, is the agent of chronic infection for Visceral Leishmaniasis (VL) in Indian sub-continent transmitted to human by bite of infected female sand fly (Phlebotamus argentipus). L. donovani transmit from sand fly as promastigote to human and as amastigote from human to sand fly. During this transition phase, the parasite encounters several stress factors in human host among which reactive oxygen species (ROS), the most damaging molecules, imposed by macrophages against the invading parasites to kill them. However, a few parasite got escape from this oxidative effect and leads to manifestation of VL. The parasites, at host-pathogen interface, sense and respond against oxidative stresses and survive after activating their own antioxidant machineries as well as they also activates host anti-oxidant system by inducing cyclic AMP production and regulate expression of several genes involved in stress management. Induction of ROS in host depends upon parasites' LdHemAC gene expression level that link cAMP to control expression of HO-1 and Nrf2. HO-1 is known to inducible gene against oxidative stress, but its expression is under control of parasite induced ROS level that was elucidated by mutant parasites infection study. Nrf2 is the transcription factor that being phosphorylated by PKA to regulates antioxidant genes expression depending on cAMP intracellular level of host as explored in our study. LdHemAC over expression parasite is capable more in tolerating ROS because it able to maintain the consistent HO-1 expression level under late infection stage condition and thus, thus play a major role in parasite survival by orchestrating cAMP-PKA - NRF2-HO-1 signaling axis.

Soluble adenylate cyclase of L.donovani (LdHemAC) modulate host cyclic AMP-PKA- Nrf2 signaling axis to establish redox homeostasis for its survival in macrophages.
1.Episomal expression construct of LdHemAC generated by gene clonning methods using pLGFPN vector transfected in parasite by electroporation, proved at protein level by western blot using rLdHemAC antisera generated in mice (BALB/c). 2. Infectivity and amastigote load were determined using Giemsa stain by microscopic examination. 3.

Inhibition study of SQ22, H-89, RpcAMP, CoPP, SnPP, Sulforaphene and Miltefosine treated and untreated macrophages under infection condition where expression of HO-1 and Nrf2 proteins were quantified by western blot and Cyclic AMP level was determined by using cyclic AMP ELISA assay kit. 4. ROS were quantified by Fluorimetry using H2DCFDA dye. 5. Protein Kinase A activity measured by Peptag PKA assay kit 6. M1 and M2 phenotypes were determined by FACS Aria after staining uninfected and infected macrophages with antibody conjugated with dye. 7. One-way ANOVA were used for statistical analysis of more than two data set comparison using Turkey post-hoc test and student t- test for two data set comparison using Graph Pad PRISM 5.0.

Intra-macrophages survival and infectivity of parasite is under control of LdHemAC expression. LdHemAC induced ROS in macrophages trigger cAMP dependent HO-1 upregulation. LdHemAC is required for L.donovani mediated activation of Nrf2 that control HO-1 expression. LdHemAC of L.donovani trigger subversion of macrophage phenotype by inducing HO-1 expression.

It is the soluble adenylate cyclase of L.donovani(LdHemAC) that modulates Host cyclic AMP and thus, Protein Kinase A activity that overcomes infection induced oxidative stress by upregulating Nrf2 and HO-1 expression. The mutant counterparts of LdHemAC, LdHemAC- OE (overexpression) and KD(knock down) generated by genetic manipulation were used to validate their intra-macrophage survival potency(M1 or M2 phenotypes) and also in establishment of infection. LdHemAC-KD parasites are more prone to oxidative damage while less in infectivity and thus, unable to align cAMP-PKA-Nrf2-HO-1 signaling in murine macrophages in vitro study design.

Key words: Cyclic AMP, Oxidative stress, Nrf2, HO-1, Adenylate cyclase, Protein Kinase A, Late infection, Miltefosine, M1, M2 macrophages

EFFICACY AND SAFETY OF A COMBINED TREATMENT OF SODIUM STIBOGLUCONATE AT 20MG/KG /DAY WITH UPPER MAXIMUM DAILY DOSE LIMIT OF 850MG AND PAROMOMYCIN 15MG/KG/DAY INJECTIONS IN HIV NEGATIVE VISCERAL LEISHMANIASIS PATIENTS: A RETROSPECTIVE STUDY, NORTHWEST ETHIOPIA.

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Visceral leishmaniasis (VL) is one of the most neglected tropical infectious diseases. It is fatal if left untreated. The objective of this study was to assess the efficacy and safety of 17-day injections of combined regimen of sodium stibogluconate and paromomycin (SSG/PM) in HIV-negative VL patients to decide on the continual use of same treatment regimen in East Africa. A retrospective analysis of medical records of VL patients treated in the Universityof Gondar Hospital during period 2012-2019 was carried out. Participants with VL-HIV co-infection treated with SSG-PM and incomplete medical records were excluded.

A total of 2836 patients were treated for VL from 2012 to 2019. Of these 1233 were treated with SSG-PM, and 1000 of them were included in the study. The median [interquartile range (IQR)] age of the study participants was 23 (20 - 27), and 996 (99.6%) were male VL patients. Eighty-five percent of patients were seasonal migrant workers, while the rest (15%) were residents of VL endemic areas. Initial cure was achieved in 922 (92.2%) patients. The frequency of treatment failure, treatment interruptions, default and deaths respectively were 30 (3%), 20 (2%), 13 (1.3%) and 15 (1.5%). Among 280 patients who completed 6-month follow up, the final cure was 93.9% (263/280), 4 (1.4%) relapsed and 13 (4.6%) developed post-kala-azar dermal leishmaniasis (PKDL). The most common adverse events (AEs) were raised liver transaminases (35.1%; 351 patients), injection site pain (29.1%, 291 patients) and raised serum alpha-amylase (29.1%, 291 patients). Factors associated with poor treatment outcomes were sepsis, pneumonia, and adverse events.

A combination of SSG at 20mg/kg with upper daily maximum dose of 850mg and PM was effective for achieving initial cure at end of treatment and safe for treatment of HIV negative VL patients in northwestern Ethiopia. Our data are consistent with previous reports and confirms effectiveness of SSG/PM treatment regimen in the Eastern African countries. Efficacy at 6-months (93.9%) was estimated on data derived from patients who completed follow up and needs to be interrogated by future studies.

Key words: Visceral leishmaniasis, sodium stibogluconate, paromomycin, efficacy, safety, poor treatment outcome.

FINANCIAL AND ADMINISTRATIVE CHALLENGES IN IMPLEMENTATION OF CLINICAL TRIALS IN RESOURCE LIMITED SETTINGS: EXPERIENCES FROM DND*i* SPONSORED CLINICAL TRIALS IN EASTERN AFRICA

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Introduction
Conducting clinical trials (CT) requires adequate resources and administrative support to ensure success. Trialists focus more on the scientific aspects of the clinical trials, yet financial resources and administrative support are also key drivers that guarantee successful completion of the clinical trials, especially in resource limited settings.

Objective
To describe the financial and administrative challenges experienced in the conduct of clinical trials in resource limited settings in Africa and provide recommendations that may have a positive impact in the future of clinical trials conduct.

Methods
In the last fourteen years we have conducted numerous trainings (5 workshops and several one-on-one sessions) on Good Financial Practice (GFP), documented the lessons learned and challenges encountered Qualitative data on key success factors and challenges of conducting clinical trials was collected and analyzed. Data was extracted from the CTs reports, site visits by the finance leaders and communications with the partners, especially the investigators and the Finance (sponsor) leader. Additionally, experiences encountered during contract negotiations with partners participating in clinical trials sponsored by DNDi in eastern Africa have provided key information towards this endeavor.

Results
Major financial and administrative challenges identified in CT implementation include poor budgeting techniques, inadequate negotiation skills, bureaucratic systems, poor infrastructure (roads and internet connectivity), high staff turnover at trial sites, lack of diligence during review of clinical trial agreements before appending signatures, lack of partner finance staff understanding of CT needs and inadequate financial management and reporting skills by CT sites. Key highlight is late disbursement of trial funds by sponsors due to amongst other reasons, studies startup delay, sites not meeting contract requirements and/or political challenges that impair financial transactions.

Conclusion & Recommendation
Financial and administrative processes are key in ensuring clinical trials objectives are successfully achieved. Identifying the right skillsets, dedicating specific HR at the trial sites to deal handle financial and administrative issues, and continuously training key partner finance personnel in financial administration can address the identified challenges and expedite clinical trials conduct. Positioning GFP the way GCP has been positioned globally making it a requirement for key clinical trials personnel to undergo a refresher GFP training at the start of each study would also provide solutions to the identified challenges. There is need to rethink partnership and advocacy to target other actors (eg customs and revenue authorities, courier companies) who are involved in the supply chain process to facilitate delivery of trial commodities.

SPEAKER BIOS

Dr Sultani Matendechero

Head, National Public Health Institute & LAC Chair

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Dr Sultani Matendechero is the Head, Kenya National Public Health Institute and Chair of the Leishmaniasis East Africa Platform (LEAP) Advisory Committee (LAC). Prior to this, he served as the Head, Division of Vector Borne and Neglected Tropical Diseases at the Ministry of Health Kenya.

Dr. Monique Wasunna

Director,

Drugs for Neglected Diseases Initiative, Africa Regional Office

Dr Wasunna is the Director, Drugs for Neglected Diseases Initiative Africa Regional Office. She is a physician, an infectious disease and tropical medicine specialist. She is the Founding Chairperson of the Leishmaniasis East Africa Platform which promotes clinical research and capacity building for this neglected and deadly disease. Prior to joining DND*i*, Dr Wasunna worked at the Kenya Medical Research Institute as a Chief Research Officer and the Acting Director and Chief Executive Officer. She holds a Bachelor of Medicine and Surgery degree from the University of Nairobi, an MSc and a PhD in medicine from the London School of Hygiene and Tropical Medicine, University of London, and a diploma in Tropical Medicine and Hygiene from the Royal College of Physicians of London. She is a member of the expert Committee of Clinical Trials of the Pharmacy and Poisons Board and National Bioethics Committee, Kenya. She is a member of the Kenya Medical Association, Kenya Association of Physicians and a fellow of the East Central and Sothern Africa College of Physicians. She is a recipent of several local, regional and international awards. Dr Wasunna's research interests are primarily focussed on neglected tropical diseases such as visceral leishmaniasis. She is well published in peer review journals. Dr Wasunna is a member of the African Vaccine Delivery Alliance of the Africa Centres for Disease Control and Prevention.

Prof Muntaser Ibrahim

Director of the Institute of Endemic Diseases,

University of Khartoum, Sudan.

Muntaser Ibrahim is a professor at the Department of Molecular Biology, Institute of Endemic Diseases, University of Khartoum. Obtained B.Sc. in Zoology and chemistry and a Ph.D in Molecular Biology, was a Wellcome Visiting Research Fellow, Department of Pathology, University of Cambridge. Founding member, Sudanese National Academy of Sciences, and African Society of Human Genetics. Fellow of the Academy of Science for the Developing World (TWAS), Ararb regional office (TWAS-ARO) and African Academy of Scinces (AAS). His research interest is primarily on the evolutionary aspects of diseases in relation to human genetic diversity with particular interest on ethnicity, including the role of disease in ethno-geography. In 1998 he established the Unit of Diseases and Diversity, which has it focus on the study of Human and parasite genetic variation. The unit contributes to the institutional efforts in research and training including training courses on Molecular Medicine, bioinforrmatics and genetic epidemiology. Was recently awarded the CN Rao prize for scientific reesearch by the world Academy of Sciences (TWAS).

Prof. Samuel Kariuki

Ag. Director General,

KEMRI

Prof Samuel Kariuki is the Acting Director General, Kenya Medical Research Institute (KEMRI). He is Fellow, African Academy of Sciences and an Honorary Faculty at Wellcome Sanger Institute. He is a visiting Professor of Tropical Microbiology, Nuffield Department of Medicine, University of Oxford, UK and a member of the American Society for Microbiology. He won the prestigious Pfizer Prize (The Royal Society) for African Scientist of the Year Award, 2012. He also holds several esteemed international positions among others; Chair, Global Antimicrobial Resistance Partnership (GARP)-Kenya, International Fellow of the Wellcome Trust Sanger Institute, Wellcome Sanger Honorary Faculty and a visiting Professor of Tropical Microbiology, Oxford University, UK. He has also served as the Director of KEMRI's Centre for Microbiology Research (CMR). Prof. Kariuki, holds a Bachelor of Veterinary degree and a Master of Science in Pharmacology & Toxicology from University of Nairobi and a PhD in Tropical Medicine from University of Liverpool, UK. Until his appointment, Prof. Kariuki was the Director in charge of Research and Development, a position he has held since 2018.

Rolland Kaya
General Director

MSF Eastern Africa at Médecins Sans Frontières (MSF).

Rolland Kaya, currently General Director for MSF Eastern Africa, originally from Congo-Brazzaville, is one of the very dedicated and committed MSF staff who joined the organization in 2002 as National Staff in Congo-Brazzaville. Since then, he remained attached to the organization and filled different positions within MSF at national and international levels as Project Coordinator, Deputy HoM, Head of Mission in various contexts (Congo-Brazzaville, DRC, Chad, Pakistan, Somalia, Uganda, South Sudan, Ethiopia) and recently worked as the MSF Humanitarian Representative to East and Central Africa based in Nairobi, Kenya.

During his journey within MSF, he has gathered an extensive experience through exposure to field operations, networking and representation at the field and high levels. He has also extensive knowledge and understanding of the Africa contexts and dynamics.

Currently, he works with different MSF entities on various humanitarian topics and collaborates closely with regional states and non-states actors in the Eastern, Central Africa regions and beyond.

Rolland holds a Master's degree in Public Health, Environment and Health Promotion specialized in developing countries.

Dr Juliet Nabyonga-Orem
Ag. WHO Country Representative in Kenya

Dr. Juliet Nabyonga-Orem is the acting WHO Representative in Kenya. She is health systems expert with experience spanning over 2 decades. She has been instrumental in the transformation of health systems in many African countries and has published extensively in the area of health systems and services. She led the health the Health Financing and Investment program at WHO Africa Region and worked at the sub regional level providing technical expertise to the 20 countries in East and Southern Africa to strengthen their health systems. Previously, she was the Regional Advisor on health systems partnerships, monitoring and evaluation based at the WHO Regional office for Africa in Congo Brazzaville. Prior to moving to the Regional office, she worked at the WHO Uganda office as a Health Economics Advisor and Head of the health systems and services cluster. Before joining WHO, Juliet worked at various levels of the health care system in Uganda. She is a member of several scientific committees including the Africa Health Economics and Policy Association and Health

systems Global, and a member of the Scientific advisory committee of the European and developing countries clinical trials partnership (EDCTP). Juliet has played an instrumental role in resource mobilisation for health systems strengthening which has had tremendous impact in many Sub-Saharan Africa countries. Juliet is a graduate of Makerere University, Kampala Uganda where she obtained MB ChB, obtained a MSc in Health Economics from University of York, UK and a PhD in Public Health from Catholic University of Louvain, Belgium

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Dr Bernard Pécoul

Executive Director,
Drugs for Neglected Diseases initiative (DND*i*)

Dr Bernard Pécoul has led the Drugs for Neglected Diseases initiative (DND*i*) since its foundation in 2003. Under his guidance, DND*i*–a not-for-profit research and development organization –with hundreds of public and private partners, has delivered seven new treatments for the most neglected diseases (leishmaniasis, sleeping sickness, and Chagas disease) and for malaria. It has developed a robust portfolio of projects spanning from discovery to implementation for these diseases as well as filaria, paediatric HIV, mycetoma, and hepatits C. As part of DND*i*'s dynamic portfolio approach, Dr Pécoul is also leading the incubation of a product development partnership to address R&D for new antibiotic treatments.

DND*i* aims to deliver a total of 16 to 18 new treatments for neglected patients by 2023. The initiative, through its R&D work, also builds capacity in disease endemic countries through research platforms and technology transfers and advocates for greater public leadership to sustainably address the health needs of neglected patients. Prior to DND*i*, Dr Pécoul was Director of the Médecins Sans
Frontières (MSF) Campaign for Access to Essential Medicines from 1998 to 2003, a position he took on after that of Executive Director of MSF-France. While working with MSF, Dr Pécoul carried out field missions in Africa, Latin America, and Asia. In 1988, he co-founded Epicentre, an MSF-affiliated NGO specialized in epidemiology. He holds a medical degree from the University of Clermont-Ferrand, France, a master's degree in public health from Tulane University, USA. In 2012, he was awarded an honorary Doctor of Laws Degree by the University of Dundee, UK. He is a member of the Joint Coordination Board of the Special Programme for Tropical Disease Research (WHO/TDR) and a former board member of UNITAID's Medicines Patent Pool.

Dr Margaret Anyetei -Agama

Ag Director for Health and Humanitarian Affairs,
African Union

Dr Margaret Anyetei -Agama is the Ag Director for Health and Humanitarian Affairs, African Union. A senior medical doctor with specialty in clinical and neuro-psychology, she has extensive experience working with marginalized and vulnerable populations particularly women and children and key populations in conflict and humanitarian settings. She has wide management and field experience in various national, regional, and international settings. Dr Anyetei has a strong clinical and advocacy background in HIV and AIDS.

She has vast experience in Health policy development, Advocacy and Policy and Strategic development in HIV/AIDS and in the integration of Gender, Sexual and Reproductive Health. Over the past 30 years she has held several managerial positions at national level, within the UN system and at the African Union Commission. She holds a BSc. in Human Biology and MB.CH.B in Medicine and Surgery from Kwame Nkrumah University of Science and Technology Kumasi, Ghana and M.Phil. in Clinical Psychology, University of Ghana.

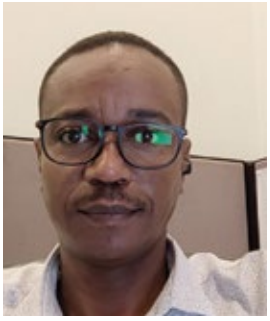
Dr. Alfred Mubangizi

Assistant Commissioner Health Services VB&NTD,

Ministry of Health Uganda

Dr. Mubangizi is an Assistant Commissioner Health Services -Vector Borne and Neglected Tropical Diseases (VB &NTD) Division at the Ministry of Health Headquarters and a national coordinator for NTD programs. As a National Program manager for NTDs, he coordinates all NTDs implementing partners and NTDs Specific Disease Programs at a national level. He has spearheaded elimination of Neglected Tropical diseases through preventive chemotherapy, Individual Case Management, Vector Control, Water, Sanitation and Hygiene (WASH), Veterinary Public Health and operational research.
Dr Mubangizi has spearheaded the development of NTD programs sustainability plan which was launched by the health minister. He has also guided the team in the development of NTD Monitoring and evaluation plan in accordance with WHO global framework and NTD road map 2030. Dr Mubangizi has over 15 years in senior management level both

in Public and private sector. He is self-motivated and hardworking person with very good interpersonal skills and able to multitask to different tasks at hand. He holds a Master of Public Health (MPH) from Makerere University, Kampala, Bachelor of Medicine and Bachelor of Surgery Degree of Mbarara University of Science and Technology. He also holds a post graduate diploma in project planning and management of Uganda Management Institute (UMI). He has attended several short-term skills improvement courses and holds various certificates of Merit and of attendance.



Dr Mousab S. Elhag

NTD Advisor,

Federal Ministry of Health of Sudan.

Dr Mousab S. Elhag is the NTD Advisor, Federal Ministry of Health of Sudan. He has previously served as the Director, Communicable and Noncommunicable Disease Control Directorate, MOH in Sudan.

Dr Daniel Argaw

Unit Head Prevention Treatment and Care, NTD Control Department,

World Health Organization

Prof. Dia Eldin A ElNaiem

Professor, Biology department,

University of Maryland - Eastern Shore, USA

Prof. Dia Eldin A ElNaiem is a Professor in the Biology department at University of Maryland - Eastern Shore

Dr Abate Mulugeta Beshah

NTD Medical Officer, Regional Focal Person for Leishmaniasis, Scabies and other Ectoparasites,

WHO Regional Office for Africa

Dr Abate Mulugeta Beshah is currently the NTD Medical Officer and Regional Focal Person for Leishmaniasis, Scabies and other Ectparasites at the WHO Regional Office for Africa. He has over 22 years of experience in health and health related programmes including 18 years of experience in the management of public health programmes in various capacities working with government, International NGOs and multilateral Agencies at national and international levels. From July 1999 to May 2003, Dr Beshah served as a medical practitioner in public facilities. Thereafter he worked with Médecins Sans Frontières-Holland HIV/AIDS, Malaria and Kalaazar project, Humera/Ethiopia. He then moved to Family Health International/USAID as Care and Treatment Officer then to proceeded to WHO as National Professional Officer for leishmaniasis and later as NTD Programme Coordinator.

Dr Saurabh Jain

Head, Visceral Leishmaniasis Programme,

WHO

Dr Jain is a medical doctor with public health background and working in the field of NTDs for the last 20
years. He is currently in-charge of Visceral Leishmaniasis Programme in the Department of Control of
Neglected Tropical Diseases in WHO headquarters.

Dr Carol Karutu

Vice President, Programs,

End Fund, Kenya

Dr Carol Karutu is the Vice President, Programs at the End Fund. Prior to joining the END Fund, Carol served a Chief of Party for a USAID funded integrated health project implemented by IntraHealth International in Eastern Uganda, where she provided technical, financial, and overall managerial oversight across 30 districts and in over 600 health facilities. Previously, Carol served as project director for multiple HIV and AIDS, maternal child health, family planning and human resource for health

projects supporting the design phase, implementation, evaluation, and documentation with international and local non-governmental organizations (NGOs) in Ghana, Kenya, Malawi, Mozambique, and South Sudan. Throughout her career, Carol has played leading roles in health workforce development, identifying, and strengthening health service delivery gaps and building partnerships with governments and local communities for sustainable solutions. Carol is a 2014/2015 American Association of University Women (AAUW) International Fellow; a 2010 Boston University Distinguished Alumni Award recipient; a 2004 recipient of the Boston University Women's Guild Award for Academic Excellence and a 2003 recipient of the PEO International Peace Scholarship. Carol holds Doctorate in Public Health (DrPH) and Master's in Public Health (MPH) from Boston University School of Public Health and a Bachelor of Science (Botany and Zoology) from Jomo Kenyatta University of Agriculture and Technology in Kenya.

Dr Frederik Seelig

Partnership Manager for the Global Vector Hub,

London School of Hygiene & Tropical Medicine

Dr Frederik Seelig is the Partnerships Manager for the Global Vector Hub, based at the London School of Hygiene & Tropical Medicine (LSHTM). He is involved in building and managing stakeholder relationships across the vector control community, resource users, data providers and industry supporters. Before joining LSHTM in 2019, Frederik worked in the Population Health team at the Wellcome Trust. Dr Seelig studied biology at the University of Bonn/Germany and the University of New South Wales/Australia; he then joined Klaus Kurtenbach's group at the University of Bath/UK for a PhD project on the molecular ecology of Ixodes ticks. Frederik worked as a post-doctoral researcher at the Entomology group at Wageningen University and Research/The Netherlands. Here, he focused on the vector competence of biting midges for the recently discovered Schmallenberg virus. He later worked in scientific publishing in Cambridge/UK, and a subsequent move to London to work for Wellcome in 2016. He has a broad background in various aspects of medical entomology, and his main interests include vector biology and ecology, global health, science writing and Open Access.

Dr Jane Mbui

Internal Medicine Specialist, and Epidemiologist

Kenya Medical Research Institute

Dr Jane Mbui is an Internal Medicine Specialist, and an epidemiologist currently working at the Centre for Clinical Research, Kenya Medical Research Institute (KEMRI) where she heads the Neglected Diseases Division. Dr Mbui has vast experience in clinical trials from phase I to phase III where she has been involved in trials in Visceral Leishmaniasis (VL). The clinical trials have mainly targeted new treatment protocols or repurposed treatments for VL, as the disease currently has few treatment options. Dr Mbui is also among the founder members of Leishmania East Africa Platform (LEAP), a platform that aims to strengthen clinical research capacity in the East African region and brings together 4 countries in the region namely Sudan, Ethiopia, Kenya, and Uganda. Dr Mbui is also involved in epidemiological research in Non communicable diseases (NCD) mainly Hypertension and Diabetes, the commonest NCD diseases in Kenya.

Dr Yaw Asare-Aboagye

Head of Regional Clinical Operations,

Drugs for Neglected Diseases initiative Africa Regional Office

Dr Yaw Asare-Aboagye joined DND*i* in January 2020 as Head of Regional Clinical Operations in the DND*i* Africa regional office. He is responsible for the clinical operations and biometrics functions in the DNDi Africa regional office.

Dr Yaw Asare-Aboagye has over 25 years' experience in the pharmaceutical industry with extensive training in clinical operations and biometrics. His expertise includes management of Clinical Operations and Biometrics teams, filing of NDAs with the US Food and Drugs Administration, European Medicines Agency, and Health Canada as well as oversight of regulatory agencies' audits. Prior to joining DND*i*, Yaw was an Executive Director of Biometrics at Biomarin, a biotechnology company specializing in rare diseases located in the San Francisco Bay area in Northern California, USA.

Dr Asare-Aboagye holds a Doctor of Veterinary Medicine degree (DVM) from the University of Ibadan in Nigeria and an MS degree in Biometrics from Louisiana State University School of Public Health, New Orleans, Louisiana, USA.

Alexandra Solomos

Senior Clinical Project Manager,

Drugs for Neglected Diseases initiative

Alexandra Solomos is working at DND*i* as a Senior Clinical Project Manager for the Visceral Leishmaniasis (VL) program. During the last 8 years, she has been involved in the management, implementation and conduct of several clinical trials on VL in the Eastern African region. Prior to joining DND*i*, Alexandra worked as Clinical Project Manager at Covance and Outcome/Quintiles where she acquired experience in clinical research, coordinating and managing multi-center international clinical trials in phases II/III/IV across different therapeutic areas such as endocrinology, infectious diseases, ophthalmology, gastrointestinal system and oncology. She holds a Master of Sciences in Biology from the University of Geneva.

Dr. Henk DFH Schallig

Head Experimental Parasitology Group,

Amsterdam University Medical Centre, the Netherlands.

Dr. H. Schallig is a trained parasitologist with ample knowledge of immunology and molecular biology. He is accredited by the National Committee for Medical-Biological Research Training in the Netherlands (SMBWO) as Medical-Biological Scientific Researcher and Educator/PhD supervisor in Parasitology and Scientific Researcher Medical Microbiology. His research is focused on development, evaluation and implementation of diagnostic tools and strategies, on drug efficacy and resistance studies in parasitic diseases, and currently further expanding into undifferentiated fevers. He works in close collaboration with renowned research institutes and hospitals in disease endemic countries, in Africa and South America. Transfer of knowledge and capacity building are intrinsic to Dr. Schallig's activities, and he has built extensive experience in training and conducting workshops. Numerous technicians, MSc and PhD students from the Netherlands as well as from developing countries have been trained by him and his group. He has over 200 publications in peer reviewed journals and has made great contributions to the field of leishmaniasis, especially, but not limited to, on development, evaluation and production of diagnostics.

Abigail Kusiwaa Adomako

Graduate student,

Kwame Nkrumah University of Science and Technology, Ghana

Abigail Kusiwaa Adomako is a graduate student of Kwame Nkrumah University of Science and Technology, (KNUST) - Ghana, where she is has been pursuing Chemistry from 2017 to 2021. She has profound interest in Machine learning for drug discovery, molecular docking and dynamics. Her research interests involve the use of computational tools to explore some selected natural anti-leishmanial compounds against validated protein targets of Leishmania parasite. This study aims to complement the effort in molecular rational optimization of these compounds as probable leads in the anti-leishmanial drug discovery programme. Currently, she is the research assistant at Sheathe Laboratory, Department of Chemistry, KNUST.

Dounia DARIF

Ph.D. student at the Faculty of Sciences Ain-Chock

Hassan II University of Casablanca, Morocco

Dounia is a fourth-year Ph.D. student at the Faculty of Sciences Ain-Chock of Hassan II University of Casablanca, Morocco. I graduated from the Faculty of Sciences Ain-Chock with a Master's degree in Biology and Health in 2016. My Ph.D. began in 2018, and I am interested in leishmaniasis research, particularly the immune response and therapeutic alternatives.

Simon Bolo

Regional Operations Leader,

Drugs for Neglected Diseases initiative Africa Regional Office

Simon is the Regional Operations Leader for the DND*i* Africa Regional Office in charge of finance, administration and operations functions of the Nairobi office. He also takes the lead in the development, implementation and evaluation of the Nairobi office strategy and annual action plan. He has offered financial and administrative support to various clinical trials and multiple therapeutic areas within DND*i*. Simon joined DND*i* in 2005 and has 20 years' experience in financial administration and operational management progressively gained in the private and non-profit sector. Prior to joining DND*i*, he worked for Handicap International for over six

years. He has been able to develop and implement a standard for financial reporting (Good Financial Practice – GFP) for DND*i* implementing partners across the region, as well as develop simple financial tools for non-finance professionals to assist in financial reporting. He has also been instrumental in the implementation of a quality management system for the Nairobi office and leading the office to certification for ISO 9001: 2008 and 2015 standards. He holds an MBA from Strathmore Business School (SBS) of Strathmore University and a Bachelor's degree (BSc) in International Business Administration from the United States International University in Nairobi and is a qualified Accountant of Kenya – CPA. He is also a certified MANGO finance trainer.

Dr Prabin Dahal

Research Fellow,

Infectious Diseases Data Observatory

Dr Prabin Dahal is a Research Fellow based at Infectious Diseases Data Observatory (IDDO). He has a broad interest in epidemiology of Malaria and Visceral Leishmaniasis. His research has primarily focused on delineation of dose-response relationships for commonly used antimalarial drugs through individual participant data meta-analysis and assessment of safety of antileishmanial drugs. Prior to joining IDDO, Dr Prabin obtained his PhD on investigation of statistical issues in design and analysis of antimalarial clinical studies.

Prof Asrat Hailu Mekuria

Microbiologist, College of Health Sciences,

Addis Ababa University, Ethiopia

With his background of medical parasitology and immunology, Prof Asrat has developed a wide range of research interests in biomedical sciences applicable to infectious diseases of humans and animals; mainly diseases of parasitic origin. Typical areas of his research are in the domain of diagnostics, drugs, and vaccines for infectious diseases. Neglected tropical parasitic diseases such as lymphatic filariasis, schistosomiasis, and especially leishmaniasis have been his areas of research.

Clinical trials have been added to his research portfolio to evaluate new tools of disease control and interventions (diagnostics, therapeutics,

vaccines, vector control). To this effect, together with colleagues he has established a regional centre of excellence for innovative therapeutics and clinical trials. In addition, in collaboration with Drugs for Neglected Diseases initiative (DNDi), Prof Asrat has established two dedicated clinical trial facilities in Ethiopia; one used for visceral leishmaniasis and the second for malaria clinical trials.

Dr Esther Kinyeru

Public Health Specialist,

Nakuru County

Dr Kinyeru, is a public health specialist and currently the focal person for cutaneous leishmaniasis (CL) and other NTDs in Nakuru County. Lauded for initiating treatment of CL patients in Kenya, she has great passion for fighting for the patients ravaged by CL. She is a national trainer in both visceral and cutaneous for CL and VL and has partnered with various organisations in national wide training and conducting surveillance activities in VL endemic areas. Esther played an instrumental role in the development of the Kenya leishmaniasis strategy 2021-2025 and actively following through its implementation. She is a vast experience in diagnosis, treatment, prevention, surveillance, monitoring and evaluation of leishmaniasis.

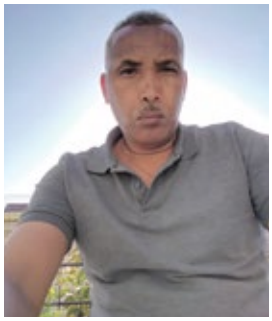
Dr Mourad Mokni

Professor of Dermatology,

University al Manar, Tunis

Dr Mourad Mokni is professor of dermatology in the faculty of medicine of Tunis, University al Manar 2 and head of the dermatology department of la Rabta Hospital in Tunis. He is also head of the Research Laboratory LR18SP01 “Public Health and infections”, director of WHO collaborating centre TUN18 on management of cutaneous leishmaniasis and WHO expert on leishmaniasis. He is member of many national and international dermatological societies and medical committees. Reviewer of more than 10 indexed dermatological journals. He is associate editor of 3 dermatologic journals. He is author of more than 250 scientific articles in indexed journals. He also wrote multiple chapters of Textbooks and Medical encyclopaedias. He is Editor of the Textbook "Dermatologie infectieuse' Elsevier-Masson in 2014. He is

member of the Dermatology TAG group for the WHO International Classification of Diseases ICD 11. Member of the Skin-NTDs Subgroup of WHO Diagnostic Technical Advisory Group May 2020. Member of the Working Group on Monitoring, Evaluation and Research (WGMER) reporting to the Strategic and Technical Advisory Group for Neglected Tropical Diseases (STAG-NTD) September 2020. He is consultant for WHO for cutaneous leishmaniasis and noma disease. He participates in some field missions, co-authored the WHO guidelines on management of cutaneous leishmaniasis EMRO and EURO regions and collaborate in international courses for Neglected Tropical diseases.



Dr Endalamaw Gadisa

Lead researcher and Director,

Armauer Hansen Research Institute, Ethiopia

Dr Gadisa started his career as a forensic biologist at the Ethiopian Police up until his current A/directorate director, Malaria-NTD (MNTD) research directorate at Armauer Hansen Research Institute, Addis Ababa, Ethiopia. He received his BSc & MSc degree from Addis Ababa University and doctoral degree from Complutense University of Madrid. His research interest is NTDs, disease, environment and public health interface. His research work ranges from geospatial/molecular epidemiology, etiology, KAP/sociocultural to clinical.

Nadira Karunaweera

Senior Professor,

University of Colombo

Nadira Karunaweera is the Chair and Senior Professor of Parasitology at the Faculty of Medicine, University of Colombo and an honorary Visiting Fellow, Harvard University, USA. She has made pioneering contributions to the field of leishmaniasis in Sri Lanka. She is the first Sri Lankan elected as an honorary member of the American Academy of Arts and Sciences and as an International Fellow of the American Society of Tropical Medicine and Hygiene (ASTMH). She is also an elected Fellow of The World Academy of Sciences (TWAS) and the National Academy of Sciences of Sri Lanka (NASSL). She is the founder President of the Sri Lanka National Chapter of Organization for Women in Science for the Developing World that champions local young scientists, especially women.

Dr Byron Arana

Head of Cutaneous Leishmaniasis Disease,

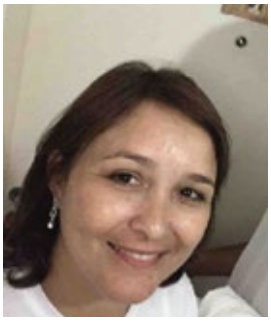
Drugs for Neglected Diseases initiative

Dr Byron Arana received his medical training at the Universidad San Carlos of Guatemala (1983) and his doctoral degree on Tropical Medicine from the University of Liverpool, UK (1998). Since 2013, Dr Arana has been serving as Head of Cutaneous Leishmaniasis Disease at Drugs for Neglected Diseases initiative (DNDi), based in Geneva, Switzerland. Before joining DNDi, Dr Arana was in charge of managing clinical trials on visceral leishmaniasis that TDR-WHO was supporting in the Indian Subcontinent and participating in development and implementation of strategies in support of the Indian subcontinent's visceral leishmaniasis elimination programme.

Alice Bayiyana

Research Scientist

Research Scientist at the Makerere University in Uganda



Prof. Luciana Maria Cortez Marcolino

Professor of Basic Education II -Secretary of Education

University of Valedo Paraíba. Brazil

Luciana Maria Cortez Marcolino, Brazilian, graduated in Biological Sciences, with experience in general biology, environmental education, developing work on the analysis of polymorphism in birds destined for release. She holds a master's degree in Biological Sciences with an emphasis on Cell Biology and works involving photodynamic therapy, Doctorate in Biomedical Engineering from the University of Vale do Paraíba. She is currently a Professor of Basic Education II -Secretary of Education. Committed to research, she is currently involved in the project started in her doctorate where photodynamic therapy is used as a modality to be used in the treatment of diseases such as tegumentary leishmaniasis, a disease considered neglected by the WHO.

Aschalew Tamiru

Chief Pharmacist,

University of Gondar Hospital

Aschalew Tamiru was born in Ethiopia. He is a Chief Pharmacist at University of Gondar Hospital, Leishmaniasis Research and Treatment Center (UOGH, LRTC). He worked for over 14 years in clinical trial center and has extensive experience in clinical trials. He wears multiple professional hats: nurse, pharmacist, pharmacologist and clinical trial specialist. He worked as a research nurse, research nurse coordinator, study pharmacist and head of the pharmacy unit of UoGH, LRTC. His area of interest in research is in neglected tropical infectious disease in the track of drug discovery and development, diagnosis and treatment. He is looking for collaborators around the globe in his area of interest.

Dawit Gebregziabher

Assistant Professor,

Mekelle University, Ethiopia

Dawit Gebregziabher is an Assistant professor in the Department of Agricultural and Resource Economics, Mekelle University, Ethiopia. Dr. Dawit earned his PhD in Forest and Resource Economics from Norwegian University of Life Sciences (NMBU) in 2018. He worked as assistant researcher in Socioeconomics and Research Extension division for three

years in Agricultural Research center. Moreover, he has been working at Mekelle University since November 2010. His role in the University includes teaching, Research, and community services. His research interest includes socioeconomics of hillside distribution, governance of exclosures. In addition, he is also co-founder of education blog "The African Academic/Researcher" that is a volunteer since July 2017 through posting "Tailored Opportunities" to enhance educational and research capacity of researchers in Ethiopia and developing countries in general.

Manjay Kumar

Department of Molecular Biology,

ICMR-Rajendra Memorial Research Institute of Medical Sciences, Bihar, India

Manjay Kumar is the Principal Investigator (PI) of the project (INT-133-BAS/2017) entitled "Studies on the role of adenylate cyclase of L.donovani (LdHemAC) on host immunomodulation in Visceral Leishmaniasis (VL)" approved and funded by ICMR , New Delhi, India. Manjay, who is a PhD student (thesis pre-submission) at the ICMR-RMRIMS in Kolkata was awarded the DBT-JRF (2016-2018), DBT-SRF (2018-2021), awarded by Department of Biotechnology, (DBT), Govt. of India, New Delhi, India, and has participated in several seminars and courses. Manjay holds an M.Tech (Biotechnology) from the Maulana Abul Kalam Azad University of Technology in West Bangal, Kolkata, India and a B.Tech (Biotechnology) from the Dr Rajendra Prasad Central Agricultural University in Bihar India. His research interests are in parasite immunology, oxidative stress and cellular signaling. Manjay has earned many awards. Manjay is a published author and co-author in several publications. cted for "Oral presentation" at Central University South Bihar, Gaya, Bihar, India, International Symposium 2019.

Prof Eltahir Khalil Gasim

Professor of Haematology/immunohaematology

University of Khartoum, Sudan

Prof Eltahir Khalil Gasim, Professor of Haematology/immunohaematology at the University of Khartoum, Sudan

Prof. Paul Kaye

Professor of Immunology

University of York, United Kingdom

Paul Kaye is Professor of Immunology at the University of York. He trained in zoology (BSc) and immunology (PhD) and has worked for over 30 years on the immunology and immunopathology of the neglected tropical disease leishmaniasis. He is internationally recognized for his research on macrophages and dendritic cells, contributing to a fundamental understanding of their biology in health and disease, and for his work on lymphoid tissue remodelling and granulomatous inflammation during chronic infection. Paul is a Wellcome Trust Senior Investigator and an elected Fellow of the UK Academy of Medical Sciences. He was awarded FRCPath by publication in 2004 and has published ~150 research articles and reviews, with numerous in leading international journals (e.g. Nature Medicine, Immunity, J. Clin. Invest., PNAS).
Paul's research tackles leishmaniasis from a holistic viewpoint, rooted in the immunology of the host-parasite interaction, but employing tools and approaches taken from many disciplines, including mathematics, ecology, vector biology and neuroscience. He has extensive links with leishmaniasis-endemic countries and is currently leading a Phase II therapeutic vaccine trial in Sudan and developing a digital pathology platform to facilitate a greater understanding of disease pathogenesis through data sharing and collaboration across geographic borders. He is currently seeking funding for a human challenge model of leishmaniasis employing Leishmania major and Phlebotomus papatasi.

Nick de Vrij

PhD Researcher,

Antwerp Institute of Tropical Medicine & Adrem Data Lab of the University of Antwerp

Nick works as a PhD Researcher at the Clinical Immunology unit of the Antwerp Institute of Tropical Medicine and the Adrem Data Lab of the University of Antwerp. Here, his focus is on the T cell-driven immunity observed in leishmaniasis, and the entire process of antigen presentation and recognition. Besides this, he is working on analyzing the immunological sub study of the Predicting Visceral Leishmaniasis in HIV patients (PreLeisH) clinical study. Here, they are trying to characterize host immunological markers of VL-HIV co-infection and profile their evolution over time to find determinants of VL relapse. Nick carries out his work at the interface of two complementary skills - bioinformatics and biomedical sciences, using computational approaches to tackle complex pathogens and infectious diseases.

Dr Thouraya Boussoffara

Associate Professor,

Pasteur Institute of Tunis, Tunisia

Dr Thouraya Boussoffara, Phd, Associate Professor in the Laboratory of Transmission, control and Immunobiology of Infections at Pasteur Institute of Tunis, Tunisia. His main field of research is the immunology of leishmaniasis and more particularly, the identification of the immune correlates of protection and the characterization and/or validation of new vaccine candidates of both parasite and sandfly origin. Dr Boussoffara has participated in several collaborative international projects aiming to the development of a vaccine against leishmaniasis (LeishDNAvax, PEPCK, multipeptidic vaccine). All the studies he has been involved in have allowed him to gain an expertise in monitoring the immune response to analyze the immunogenicity and efficacy of vaccine in animal models. He is currently contributing to a project aiming in development of a Leishmania attenuated vaccine by assessing its immunogenicity and efficacy in canine model.

Mitali Chatterjee

Professor of Pharmacology

Institute of Postgraduate Medical Education & Research (IPGMER), Kolkata, India

Mitali Chatterjee is a Professor of Pharmacology at the Institute of Postgraduate Medical Education & Research (IPGMER), Kolkata, India. Her research focus includes development of improved diagnostic and chemotherapeutic approaches against Visceral Leishmaniasis (VL) and its sequel Post kala-azar Dermal Leishmaniasis (PKDL), the latter being unique to South Asia. Prof. Mitali has focused her research on delineating clinico-immunological determinants for Indian Leishmaniasis, especially PKDL, establishing a 'Leishmania parasite bank' to be accessed by Leishmania-researchers, development of diagnostic/prognostic tests using serological and nucleic acid based approaches, along with development of semi-automated drug screening assays for screening plant-derived biomolecules. Her work encompasses 'Translational research in Indian Leishmaniasis' wherein the identification of disease specific biomarkers and new chemotherapeutic modalities will provide for improved management and potential elimination of Visceral Leishmaniasis. She holds an M.Sc. (Medical Sciences) from the Cancer Research Unit, University of Newcastle upon Tyne, UK, MD (Pharmacology) from University College of Medicine, University of Calcutta and PhD (Life Sciences) from Indian Institute of Chemical Biology, Kolkata.

Dr Angamuthu Selvapandiyan

Head, Department of Molecular Medicine,

Jamia Hamdard, New Delhi, India

Dr. A. Selvapandiyan, after contributing to several research areas from his PhD times viz., mycology, plant diseases, pest resistance, bacteriology (at United Nations Industrial Development Organization affiliated International Center for Genetic Engineering and Biotechnology, New Delhi) ended up carrying out research in the fatal visceral leishmaniasis (VL) disease from his PDF times at USFDA (at Bethesda, MD USA). At FDA along with regulatory work, Dr. Selvapandiyan engaged in diagnostic and vaccine development areas in VL caused by Leishmania donovani. He was instrumental in the development of one gene (cell division specific gene 'centrin') deleted live attenuated Leishmania parasite vaccine candidate against VL. His studies on safety and efficacy of such a mutant parasite vaccine in experiments animals have been reported in several leading journals. This candidate vaccine is currently under plan for a clinical trial. He is currently focusing on development of CRISPR based gene deleted CL causing Leishmania parasites as vaccines against both CL and VL. With new opportunities, he is also venturing into areas related to other infectious diseases as well. His pioneering work in this field fetched 2002 FARE (NIH) and 2009 Scientific Achievement awards (FDA). Currently he heads Department of Molecular Medicine, Jamia Hamdard, New Delhi, continuing in research in leishmaniasis and in a bacterial infection 'typhoid', guiding graduates and PDFs with several research grants.

Dr Irene Mukui

HIV Access and Medical Affairs Leader,

Drugs for Neglected Diseases initiative Africa Regional Office

Dr Irene Mukui joined DND*i* in March 2020 as HIV Access and Medical Affairs Leader in the DND*i* Africa regional office. Dr Mukui is a Medical Epidemiologist with over 17 years' experience in clinical and health programme management. She holds a Bachelor of Medicine and Bachelor of Surgery degree from the University of Nairobi and an MPH in Epidemiology from the University of Washington in Seattle, USA. She is a former Fogarty Global Health Fellow (2018-2019) supported by the Northern Pacific Global Research Fellow Training Consortium with funding from Fogarty International Center of the National Institutes of Health.

Dr Mukui previously served in various leadership roles in the Ministry of Health in Kenya having been the Deputy Head of the ministry's Universal Health Coverage Secretariat, and prior to that the Deputy Head of the

National AIDS and STI Control Programme and Programme Manager for HIV Care and Treatment and Pre-Exposure Prophylaxis. She has contributed widely to the global HIV response having been a member of WHO HIV treatment Guidelines Development Group for many years, co-chairing the WHO HIV Drug Resistance Steering Group, and she is a member of multiple other HIV working groups.

Dr Mukui has been involved in implementation research across HIV prevention and treatment with her current focus being on pediatric HIV treatment and outcomes, mental health among HIV infected adolescents, and HIV drug resistance.

Prof Yalemtsehay Mekonnen

Professor of Cell and Human Physiology

College of Natural and Computational Sciences of Addis Ababa University, Ethiopia

Yalemtsehay Mekonnen is a Professor of Cell and Human Physiology and an academic staff of the Department of Biology at the College of Natural and Computational Sciences of Addis Ababa University, Ethiopia. She has extensively published in different peer reviewed scientific journals on topics of respiratory physiology, medicinal plants and Prof other related topics. She is a member of many professional organizations. Currently she is the Principal Vice President of the Ethiopian Academy of Sciences and the Ambassador Scientist of the Alexander von Humboldt Foundation of Germany as part of a worldwide network for excellence in science.

Karin Génevaux

President,

Genoka Services

A graduate of the London School of Economics (United Kingdom) and of a leading management school in France, Karin Génevaux has more than twenty years' experience in international fundraising. As Head of Fundraising at the Drugs for Neglected Diseases initiative (DND*i*), Karin helped raise €130 million for medical research. Karin is now President and Senior Consultant at Genoka Services. As part of her daily work, Karin identifies funding opportunities tailored to projects and organisations, guiding them in their relationship with funders, and developing grant applications with their teams. Karin's clients include DND*i*, FIND - the global alliance for diagnostics, Medicines Patent Pool (MPP), Infectious Diseases Data Observatory (IDDO) and the Centre international de recherches médicales de Franceville (CIRMF).

Bineta Ba

General Director,

BFK International, Canada

Bineta Ba is an expert in sustainable development and program management. She has 20 years of experience working in Africa, America and Europe, particularly in Switzerland where she has worked on large projects, collaborating with major public and private funders and United Nations agencies. Bineta has been based in Montreal for the past ten years, where she has worked on complex mining projects in Canada, the United States and Latin America, on issues of supervision of the exploitation of natural resources, mining and gas and compliance with environmental and social standards. Mrs. Bineta Ba is the Founder and Managing Director of BFK International and of the Forum of Technological Innovations for Energy Transition, Environmental Safeguarding and Sustainable Development (FITSEDD).

Prof. Joseph Olobo

Professor, Department of Immunology and Molecular Biology

College of Health Sciences, Makerere University, Kampala Uganda

Joseph Olobo is a Professor in the Department of Immunology and Molecular Biology, College of Health Sciences, Makerere University, Kampala, Uganda and is currently Co-Chair of LEAP. He is a veterinarian with a PhD in Immunobiology. His studies spanned over the years on the immunology and immunopathology of diseases of poverty particularly leishmaniasis, trypanosomiasis and tuberculosis in the mouse, monkey, and man with emphasis on drug and vaccine development. In partnership with other LEAP members, he continues with studies on clinical trials for anti-leishmania drug development and explore additional resources and opportunities to build on the existing clinical trial capability, to improve facility in immunology within the department and LEAP. His passion for capacity building is manifested by the number of students he trained to MSc and PhD levels nationally and regionally. He has published widely in peer-reviewed journals and has over the years won many competitive research grants.

Dr Abdulaziz Mohammed

Head of Division

Disease Control and Prevention, Africa CDC, Ethiopia

Dr Abdulaziz Mohammed is the Head of Division, Disease control and Prevention and Acting Head Division of surveillance and Disease Intelligence of the Africa Centres for Disease Control and Prevention, African Union commission, Addis Ababa, Ethiopia and the co-chair for the Infection Prevention and Control Technical Working Group for Africa CDC continental response to COVID-19. He is a medical doctor and has a Master in Public Health. He is a fellow of the West African College of Physician and rose to the position of Chief Consultant Physician before Joining Africa CDC. He is a foundation fellow of the Africa CDC/African Union fellowship for leadership in public health in Africa. He is a fellow of the Chatham house Africa Leadership program in public Health. Before his current appointment, he previously served as the Principal Medical Epidemiologist in Africa CDC where he was the program coordinator for Africa CDC first regional initiate to strengthen public Health in Africa. Dr Mohammed has over 40 publications in peer review journals like the Lancet, AJP, BMJ Global Health, BMC public health, and scientific reports.

Ivan Dario Velez Bernal

Director PECET-Universidad de Antioquia,

Colombia

Ivan DarioVelez Bernal MD, Phd is the Director PECET-Universidad de Antioquia, Colombia, and Chair WorldLeish7

Dr Melannie Etti

Clinical Research Fellow in Paediatric infectious diseases and Microbiology

Makerere University, Uganda

Dr Melannie Etti is a Clinical Research Fellow in paediatric infectious diseases and microbiology and is based in Kampala, Uganda. She is currently working under the supervision of the MNCH Working Group co-chair, Professor Kirsty Le Doare, on a large, Bill & Melinda Gates Foundation-funded study, which is focused towards reducing the incidence of Group B Streptococcal disease among neonates in Uganda. Following the emergence of the COVID-19 pandemic, she worked to set up

periCOVID Africa. This international, multi-site study aims to understathe sero-epidemiology of SARS-CoV-2 among the pregnant population in five Sub-Saharan African countries (The Gambia, Kenya, Malawi, Mozambique, and Uganda). Her research interests include the development and evaluation of targeted and population-based strategies for infectious disease prevention and control, particularly in resource-limited settings. She joined the COVID-19 Clinical Research Coalition's Ethics Working Group as an observer.

Dr Paul Kibati

Resident of the Kenya Field Epidemiology and Laboratory Training Program (K-FELTP),

Ministry of Health, Kenya

Dr Paul Kibati is a resident of the Kenya Field Epidemiology and Laboratory Training Program (K-FELTP) in the Ministry of Health, a program offered in partnership with Moi University and the Centres for Disease Control (CDC). He is currently attached to the Division of Vector Borne and Neglected Tropical Diseases where he supports the Monitoring and Evaluation activities to improve data management and use of the program. Dr Kibati is a graduate of University of Nairobi with a Bachelor of Medicine and Surgery (MBChB). He previously worked as a Medical Officer, Medical Superintendent and a Sub County Medical Officer of Health in Kitui County, Kenya.

Dr Jorge Alvar

Senior Advisor of the Leishmaniasis Programme,

Drugs for Neglected Diseases initiative

Dr Jorge Alvar is the Senior Advisor of the Leishmaniasis Programme at DND*i*, a programme he directed between 2013 and 2018.. He was accepted as a full member of full member occupying seat number 26 of RANME, the Royal National Academy of Medicine of Spain (Real Academia Nacional de Medicina de España), on 29 June in Madrid. Dr Alvar has been a corresponding member of the RANME since 1994 and took the seat corresponding to preventive and social medicine. He received an academic title for his scientific contribution in the field of tropical diseases.

Dr Alvar obtained the degree of Doctor in Medicine and Surgery from the Universidad Complutense de Madrid and a diploma in Tropical Medicine from the Bernhard Nocht Institute in Germany. He is also a visiting scientist

at the University of Cambridge in the United Kingdom.
Prior to joining DND*i*, Dr Alvar was the Medical Officer in charge of the Leishmaniasis Control Programme in the Department of Neglected Tropical Diseases at the World Health Organization (WHO) between November 2004 and November 2012. He was also the director of the National Centre of Tropical Medicine at the Institute of Health Carlos III, Madrid, Spain before joining WHO.

Dr Alvar has considerable expertise in, and has received awards for, his research in leishmaniasis epidemiology, chemotherapy and diagnosis, canine infection, and AIDS co-infection. He has a wide publication record spanning over 25 years and is also a member of the editorial boards for different journals, and a fellow of the Royal Academy of Medicine, Spain. He has participated in more than 30 research projects from different national and international research agencies, and in several cooperation programmes in leishmaniasis in a dozen countries across four continents with the Spanish Agency for International Development Cooperation

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Dr. Ramendra Pati Pandey

Assistant Professor, Biotechnology/Microbiology/Biomedical Engineering,

SRM University, New Delhi, India

Dr. Ramendra Pati Pandey is an Assistant Professor in the Department of Biotechnology/Microbiology/Biomedical Engineering at the SRM University, Delhi-NCR, Sonepat. He was a FAPESP Post-Doctoral Fellow, a very prestigious fellowship of Latin America at the Department of Medicine-InCor/HC-FMUSP, University of Sao Paulo, School of Medicine, Brazil. He was working on New therapies for Chagas disease: Using repurposing of drugs acting on the Cell invasion and Autophagy progression of host cells and Potentiation of drug effect using Biopolymeric nanoparticulate Drug Delivery Systems against Trypanosoma cruzi. He was also a Research Associate at the Translational Health Science and Technology Institute, Faridabad-Gurgaon Expressway, Faridabad Gurgaon, India.

Dr. Kishor Wasan

Chief Medical and Scientific Officer,

Skymount Medical, Canada

Dr Kishor Wasan is currently Chief Medical and Scientific Officer at Skymount Medical, and Distinguished University Scholar and Adjunct Professor in the Department of Urologic Sciences, Faculty of Medicine at the University of British Columbia. Dr Wasan has published over 300 abstracts and over 300 peer-reviewed articles in the fields of cancer therapy, lipoprotein-drug interactions, lipid-based drug delivery, and neglected global diseases. A fellow of the Canadian Academy of Health Sciences., Canadian Society for Pharmaceutical Sciences, and American Association of Pharmaceutical Scientists, Kishor Wasan has won a number of prestigious national and international awards for his significant influence on drug delivery. He also co-founded the Neglected Global Diseases Initiative at the University of British Columbia.

Ineka Gow

Leishmania expert

University of Technology Sydney, Australia

INEKA GOW is a PhD candidate in the School of Life Sciences at the University of Technology Sydney. Ineka's work focuses on the development of diagnostic assays for Leishmania infections, with a clinical emphasis. She is passionate about making molecular techniques more accessible to the wider scientific community by the introduction of automation into laboratories. She has published work documenting the utility of bisulphite conversion technology for the detection of Leishmania. Ineka received her undergraduate degree at the University of Wollongong and has worked in industry as a molecular microbiologist both internationally (Public Health England, London) and in her current role as a Development Scientist in Australia (Genetic Signatures Ltd., Sydney).

SCIENTIFIC COMMITTEE MEMBERS

1. Dr Monique Wasunna (Chair)
2. Dr Byron Arana
3. Dr Ermias Diro
4. Prof. Asrat Hailu
5. Iván Darío Vélez
6. Dr Irene Njahira Mukui
7. Dr Jorge Alvar
8. Joy Malongo
9. Irene Kivaya
10. Dr Koert Ritmeijer
11. Prof. Paul Kaye
12. Prof. Ahmed Mudawi Musa
13. Alexandra Solomos
14. Prof. Shyam Sundar
15. Prof. Khalil, Eltahir Awad Gasim
16. Dr Fabiana Alves
17. Dr Isra Cruz
18. Prof. Ahmed Mudawi Musa
19. Prof. Simon Croft
20. Dr Yaw Asare Aboagye
21. Prof. Ed Zijlstra
22. Dr Gina Ouattara
23. Dr Brima Musa Younis
24. Prof. Philippe Guerin

Prof Shyam Sundar

Programme Director,

Kala-Azar Medical Research Centre, India

Prof Shyam Sundar is currently the Programme Director of the Kala-Azar Medical Research Centre and has made seminal contributions in the field of visceral leishmaniasis (VL) over his career. He pioneered the application of the rK39 immunochromatographic rapid test in the diagnosis of VL. He introduced the oral drug miltefosine for the treatment of kala-azar. He revolutionised the treatment of VL by introducing single dose treatment with liposomal amphotericin B, and more recently a highly successful short course multidrug treatment for VL. He established a unit of infectious disease at Banaras Hindu University with special emphasis on leishmaniasis and developed a field unit in Bihar which imparts free diagnosis and treatment for VL.

Prof Sundar joined the Institute of Medical Sciences in 1972 as a MBBS student and went on to complete his MD in Internal Medicine in 1981. Having published more than 560 papers, he is recognised as one of the world's leading researchers in VL. He is a fellow of the Royal College of Physicians of London, Indian Academy of Medical Sciences, and the fellow of all the three science academies of India.

Dr Fabiana Alves,

Head of Visceral Leishmaniasis Disease,
DND*i*

Fabiana Piovesan Alves joined DND*i* in 2008, initially as a consultant on the Chagas disease and leishmaniasis projects. She is now Head of Visceral Leishmaniasis Disease. Fabiana is a medical doctor, who graduated from the University of São Paulo, Brazil, with residency in Pediatrics. A PhD thesis on the molecular epidemiology of malaria in the Amazon region was followed by a post-doctoral position at TDR/WHO. She was a professor of parasitology at the University of São Paulo, coordinated projects at research institutes and worked as a project manager for a clinical research organization. Fabiana has 15 years of experience in research on tropical diseases, including malaria, leishmaniasis, Chagas disease and schistosomiasis, with the last 10 years principally in clinical research for the development of new treatments for neglected diseases, managing clinical trials from Phase I through to Phase III.

Dr. Brima Musa Younis Mohammed

Lecturer, Institute of Endemic Diseases

University of Khartoum, Sudan

Dr. Brima Musa Younis Mohammed is a Lecturer at the Institute of Endemic Diseases, University of Khartoum, reader in pediatrics and has gained comulative experience in tropical medicine. He is a graduate of medicine from the faculty of Medicine, University of Khartoum. His research area is on infectious diseases. His postgraduate training was at Mahidol University (DTM&H and MSc Tropical pediatrics. He obtained a PhD in immunology from the Graduate College, University of Khartoum. His PhD work has explored the role of micronutrients in the immune response to leishmania parasites infection and susceptibility to progress to a fullblown picture of visceral leishmaniasis. Dr Brima has been extensively trained in ethics and Good Clinical Practice. He participatd in several clinical trials (preventive therapeutic vaccines and new treatments for visceral leishmaniasis and PKDL). He has mentored young doctors and participated in capacity building projects as PI and lead-co-investigator. He is a member of the Leishmaniasis East Africa Platform (LEAP). He has been working as the Director of El-Hassan centre for Tropical Medicine in Eastern Sudan and contributed significantly to several publications in peered reviewed journals which have changed the treatment guidelines of VL in Sudan and Eastern Africa.

Prof Ahmed Mudawi Musa

Professor of Immunology and Infectious diseases, Institute of Endemic Diseases

University of Khartoum, Sudan

Prof Ahmed Mudawi Musa is a professor of immunology and infectious diseases at the Institute of Endemic Diseases. He is a physician specialist in internal and tropical medicine and clinical infectious diseases. He joined the Institute of Endemic Diseases in 2000. Prof Musa has cumulative experience in infectious diseases especially leishmaniasis. He is now giving specialist consultations in the diagnosis and management of various infectious diseases in Sudan.

Prof Musa qualified at the University of Khartoum, University of London, and the Royal College of Physicians in London and Ireland. He was trained as a clinical trialist and monitor by the WHO. He has been the director of the Institute of Endemic Diseases, University of Khartoum since

January 2011, and is also the head of the Department of Clinical Pathology & Immunology. Prof Musa acted as chairperson of the Leishmaniasis East Africa Platform (LEAP) from March 2007 to 2014.
Prof Musa is a regular speaker at local, regional and international medical and scientific conferences. His published work changed the guidelines for treatment of leishmaniasis in East Africa. He has published over 90 publications in reputable journals on leishmaniasis or related topics, mainly on infectious and tropical diseases. Professor Musa is the principal investigator of many projects trying to develop combination therapies for visceral leishmaniasis and vaccinotherapy for post kala-azar dermal leishmaniasis. His main interest is to develop preventive and therapeutic modalities for leishmaniasis, schistosomiasis and tuberculosis.

Prof Ed Zijlstra

Consultant Leishmaniasis and Mycetoma

Drugs for Neglected Diseases initiative

Prof Ed Zijlstra is an expert in PKDL and Mycetoma. He is a consultant for DNDi in Leishmaniasis and Mycetoma.

Dr Koert Ritmeijer

Coordinator Neglected Tropical Diseases

Médecins Sans Frontières.

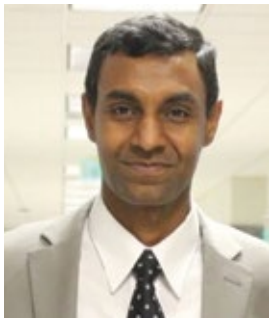
Simon Croft

Professor of Parasitology, Faculty of Infectious and Tropical Diseases,

London School of Hygiene & Tropical Medicine (LSHTM)

Simon Croft is Professor of Parasitology in the Faculty of Infectious and Tropical Diseases, London School of Hygiene & Tropical Medicine. He has worked on the discovery and development of anti-infective drugs in academia, industry and public-private partnerships. Simon's research has

focussed on novel drugs and formulations for the treatment of leishmaniasis, malaria, human African trypanosomiasis and Chagas disease, including projects on miltefosine, AmBisome and topical paromomycin which reached clinical trials for the treatment of leishmaniasis. Current research interests include PK PD relationships, topical formulations, predictive models for drugs and vaccines and leishmaniasis control programmes (KalaCORE and SPEAK India). He works extensively with industry and PDPs on NTDs, has a network of collaborators in disease endemic countries and is an advisor to DFID and Wellcome Trust programmes on NTDs. From 2004 to 2007 Simon was the R & D Director of the Drugs for Neglected Diseases Initiative (DNDi), Geneva and from 2008 to 2014 he was Dean of Faculty at the LSHTM.



Dr Ermias Diro Ejara,

Primary care provider

University Of Washington Medical Center, USA

Dr Ermias Diro Ejara is Internist with several years of experience in research, program coordination and clinical practice in the field of infectious diseases.

ORGANIZING COMMITTEE

1) Simon Bolo (chair)
2) Dr Monique Wasunna
3) Joy Malongo
4) Lilian K. Nyambariga
5) Michael Ochieng
6) Irene Kivaya
7) Edwin Wamungah
8) Edwin Tawali
9) Linet Atieno
10) Mercy Mumo
11) Leah La Framboise
12) Dr Fabiana Alves
13) Dr Jorge Alvar
14) Dr Gina Ouattara
15) Alexandra Solomos
16) Prof Ahmed Musa
17) Prof Joseph Olobo
18) Prof Asrat Hailu
19) Prof Eltahir Khalil
20) Dr Sultani Matendechero
21) Dr Jane Mbui
22) Leah La Framboise

Leah La Framboise,

Senior Digital Communications Officer,

DND*i*

Leah La Framboise is the Senior Digital Communications Officer at DNDi. She has four years of experience in digital communications including website, social media, and mass mailings management, as well as marketing analytics. She holds a master's in management with a specialization in Marketing from the Faculty of Business and Economics at the University of Lausanne, Switzerland. Prior to joining DNDi, Leah worked in marketing research in the travel industry.

Joy Malongo,

Leishmaniasis East Africa Platform (LEAP)Coordinator,

DND*i* Africa Drugs for Neglected Diseases initiative Africa Regional Office

At DND*i*, Joy is focal for LEAP; a regional clinical research network that brings together experts from leishmaniasis endemic Eastern African countries: Ethiopia, Kenya, Sudan, and Uganda.
A seasoned PR enthusiast with 23 years of experience and passion in building relations. Her experience is in administration, stakeholder relations, research and writing, communication, event planning and management. In 2010, she was awarded Best Oral Presentation at the

10th Annual Ministry of Health (MOH) and KEMRI NTD Scientific Conference, in the Stakeholders and Control Programs Reports category. Joy has completed her MBA coursework in Strategic Management at Daystar University Nairobi, Kenya. She has a BA in Communication from Daystar University and a diploma in Business Administration from the Kenya Institute of Management (KIM).

Gina Muthoni Ouattara,

Senior Medical Manager

Drugs for Neglected Diseases initiative Africa Regional Office

She has extensive experience in the field of infectious diseases, and most recently her career focus has been on Neglected Tropical Diseases at DND*i*. She has been responsible for managing safety in Phase II and III clinical trials in Visceral Leishmaniasis, Post Kalaazar Dermal Leishmaniasis, Paediatric HIV, and Onchocerciasis. Prior to joining DND*i*, she was an Investigator in Phase III HIV drug trials and Phase I first in human vaccine trials for HIV and Ebola at the University of Nairobi KAVI-Institute of Clinical Research, and a WHO sponsored Phase III HIV drug trial (Kesho Bora Study) at the International Centre for Reproductive Health-Kenya. She also worked at Médecins Sans Frontières in implementation of HIV management programs. Gina holds a Bachelor of Medicine and Bachelor of Surgery degree from the University of Nairobi.

Lillian Nyambariga,

Finance Officer,

DND*i* Africa Drugs for Neglected Diseases initiative Africa Regional Office

Lillian Nyambariga is a finance and administration professional currently working at Drugs for Neglected Diseases Initiative as a Finance Officer. Previously she worked as a project accountant with KAVI-Institute of Clinical Research a donor funded organization that conducts clinical trials. Lillian has 13 years' experience in management of donor funds and administration. She's highly skilled in designing and implementation of systems to ensure effective utilization of resources. In addition, vast knowledge, and experience in supply chain management. She has a bachelor's degree in Business Management (Finance) from Moi University. As well, a Certified Public Accountant (CPA-K) with an MBA in Strategic Management from the University of Nairobi.

Linet Otieno,

Senior Regional Communication Manager,

DND*i* Africa Drugs for Neglected Diseases initiative Africa Regional Office

Linet Atieno Otieno is the Senior Regional Communication manager at Drugs for Neglected Diseases initiative. She is a highly skilled communications expert who has developed innovative communications strategies targeting various audiences and successfully implemented them. She has over 15 years' experience working in international nonprofit organizations in various sectors (health, humanitarian, environment and research). Eight years out of this have been spent communicating complex scientific content to nonexperts and supporting scientists to communicate simply with different audiences. She has experience in among others crisis communications, media relations, speech writing, event management, Training, strategic communications, public speaking, content collection and development of communication tools.

Previously, she worked with Centres for Disease Control where she was responsible for numerous communication activities including development of audiovisual database, working with radio and television stations to develop health and scientific programmes and training of staff members on communication with nonexpert audiences.

Irene Kivaya

Senior Executive Assistant,

Drugs for Neglected Diseases initiative Africa Regional Office

Irene Kivaya is the Senior Executive Assistant at the DND*i* Africa Regional Office. She is also a qualified expert in Occupational Health and Safety. She has extensive and transferable cross industry experience. For over 6 years, she has built her career in administration management operations with a track record of achievement within Executive Administration, Operations Management and Occupation Health and Safety. She holds a Bachelor of Science degree in Environmental Biology and Health from Moi University and a Master of Science Degree from Kenyatta University. She is a certified and trained Executive Assistant who also chairs the Health and Safety Committee at DND*i* Africa Office.

Edwin Tawali,

IT Specialist,

DND*i* Africa Drugs for Neglected Diseases initiative Africa Regional Office

Tawali is a seasoned IT Specialist currently supporting the Drugs for Neglected Diseases Initiative Africa Region Office. He has been working towards providing an enabling ICT environment to facilitate the organization in meeting its objectives. Tawali brings on board 15 years' worth of experience in development, deployment and maintenance of ICT systems to increase overall efficiency. He is an alumni of the United States International University – Africa – where he studied Information Systems Technology. Tawali thrives in developing strategies to collaboratively solve complex problems using ICT solutions. He passionately pursues knowledge and creates networks for information sharing on current digital solution trends.

Edwin Wamungah,

IT Coordinator,

DND*i* Africa Drugs for Neglected Diseases initiative Africa Regional Office

Edwin Wamungah is the IT Coordinator at DND*i* Africa Regional Office. He is an accomplished ICT consultant with a wealth of experience in the Technology space spanning over 15 years having offered support to multi sectors Including Private, Government and Non-governmental organizations. He has worked in various fields including Telecommunications, Security, Construction, Medicine and Research among others with key competence in network setup and administration, network security, system setup and support, user support, Windows server administration, among others. A holder of various certifications in Information systems and management including Cisco and Microsoft. He thrives on innovation and delivery of exceptional results whilst maintaining high levels of engagement.

Edwin has successfully had an impact in transforming various organizations from a pilot point to point to a fully centralized and managed networked environment. He is extremely passionate about getting technology to positively impact people's lives through solving real life problems by ensuring high network standards.

Mercy Mumo,

Senior Communications Officer,

DND*i* Africa

Mercy is a communications specialist with over 12 years of experience in development, business, corporate and behaviour change communication. She is the Senior Communications Officer at Drugs for Neglected Diseases initiative, Africa Regional Office. Prior to joining DND*i*, she was responsible for communication initiatives at Amref Health Africa for the Reproductive, Maternal Newborn Child and Adolescent Health and Nutrition Programme. Her experience cuts across content development and management, media liaison, event planning and management, project management, developing and disseminating communication material and mentorship. She is fluent in English and Swahili, holds a Bachelor of Arts in Communications from Daystar University and is currently pursuing a master's in strategic Corporate Communications from the United States International University –Africa.

Michael Ochieng Otieno,

Data Operations Manager,

DND*i* Africa

Michael Ochieng Otieno is the Data Operations Manager at DND*i*. Michael has over 6 years field experience working as a Data Manager in resource constrained settings with DND*i* and previously with KEMRI/Wellcome Trust research Programme in Kilifi, Kenya. Michael joined IDDO in September 2015 as a WHO/TDR fellow for one year, working to develop a pilot data sharing platform for Visceral Leishmaniasis within IDDO. Michael holds a BSc in Computer Technology from Jomo Kenyatta University of Agriculture and Technology and is currently finishing an MSc in Information Technology at Strathmore University in Nairobi, Kenya.

LEAP
LEISHMANIASIS
EAST AFRICA PLATFORM

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