

## **ACHIEVEMENTS OF THE UNIV. OF NAIROBI/UNIV. OF MANITOBA COLLABORATION 2004-2014**

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The institute UNITID and its long term collaborators have pursued continued advancement of HIV/STI activities in various parts of the country . These have had positive impact on the health of vulnerable populations in parts of Kenya by offering important opportunities to build knowledge that will help address transnational health issues that affect populations.

Collaborations with Canada's Manitoba has seen commitment to leadership in global health has been demonstrated by improving ongoing support to control emerging infectious disease epidemics such as Ebola virus through the Public Health Agency of Canada. Strengthening and create partnerships and platforms for generating scientific knowledge that will protect and improve the health of Kenyans at risk .

### INFRASTRUCTURE

The University of Manitoba's contribution in the area of HIV/TID in Kenya is summarized below Infrastructure

2004 - Establishment of UNITID – a result of several years of lobbying by Univ. Manitoba and Dept of Med Micro.

2007 - Construction of the building housing UNITID, Univ. Manitoba project offices, other collaborators, labs, Level 3 lab

### Training

Univ. Nairobi students training in Winnipeg

Univ. Manitoba Med Micro PhD program

Julius Oyugi Were Omenge Winnie Apidi

Florence Mutua Zipporah Machuki

Univ. Nairobi students funded by the Univ. Manitoba International Infectious Disease and Global Health Training Program

Cisily Meeme Marion Kiguoya Julie Ambia

Nadia Chanzu Jesse Gitaka Frank Ndakala

Emily Nyakiri

Univ. Nairobi students co-supervised and research funded by Univ. Manitoba Med Micro faculty

PhD student

Marion Kiguoya Lucy Mwangi Cisily Meeme

Masters students

Ken Odour Were Omange Winnie Apidi

Irene Adhiambo John Ndugu Lydia Atambo

Medical students

Makobu Kimani

Other students – Undergraduate courses

Maureen Akolo Dinah Amwayi

Short –term training

Ernest Lutomia - Training on level 4 or maximum containment

Vincent Ombogo - Training on Maximum bio-containment facility

Univ. Manitoba post-docs in Kenya

Richard Lester Lyle McKinnon Julie Lajoie

Sheryl Kirwan James Mwanjewe Samoel Khamadi\

Frauke Fehrmann Jillian Waruk Rachel Horton

James Sainsbury Adrienne Meyers Ruey Su

Nyla Dil Tamsir Diallo Genevieve Boiley-Larouche

Univ. Manitoba grad student working in Kenya

Jennifer Juno Catherine Card Sandra Koesters

Paul McLaren Shezhad Iqbal Aida Sivro

Lyle McKinnon Meika Richmond Melissa Herman

Lewis Liu Elnaz Shadabi John Schellenberg

Tammy Stuart Ben Liang Derek Stein

Univ. Manitoba undergraduates (mainly medical students on electives)

2004 – 13

2005 – 20

2006 – 20

2007 – 28

2008- 10

2009 – 14

2010 – 7

2011 – 13

2012 – 16

2013 – 10

2014 - 17

Univ. Manitoba contributions to Univ. Nairobi training programs:

UNITID Masters

School of Public Health

Med Micro

### Research

2004-2005 – Strengthening STD Control in Kenya Project (since 1990)

The team pioneered the “syndromic approach” to STI management which has led to a 25-40 percent decrease in STIs in the general population, and this approach has been disseminated to countries such as Uganda, Cambodia, Thailand and India.

By implementing simple strategies for the control of the sexual spread of HIV, focusing on the most at-risk populations, the basis was laid for a generation of HIV prevention programming. In particular, the University of Manitoba program showed that vulnerable populations, particularly female sex workers and their clients, were central to HIV transmission in the population. Preventing FSWs from acquiring HIV and promoting condom use with all of their partners through such strategies as intensive outreach and the utilisation of the key populations themselves as peer educators and agents of change has reduced HIV transmission dramatically. These kinds of interventions are now being implemented globally, including in India, where the University of Manitoba and colleagues from India have helped to transfer this approach on a large scale

Regional AIDS Training Network (RATN)

Established by Univ. Manitoba and Univ. Nairobi 1995-2003 – after the formation of the RATN NGO, Univ. Nairobi and Univ. Manitoba have continued to sit on the Board

## Circumcision Randomised Controlled Trial

The team's work over 20 years culminated in a major randomized clinical trial conducted in Kenya, led by the University of Manitoba, the University of Illinois Chicago and the University of Nairobi which showed that male circumcision confers a 60% reduction in risk for acquiring HIV infection among young men. The results were published in 2007, and *Time* magazine identified "male circumcision to prevent HIV" as the most important medical breakthroughs of the year. As a result, male circumcision has been endorsed as an important HIV prevention measure by UNAIDS and WHO, and programs to expand male circumcision services have been developed throughout eastern and southern Africa.

Basic research with UN faculty as co-investigators

10 CIHR funded grants from UM faculty with research in Nairobi

Bill and Melinda Gates Grand Challenge in Global Health Grant

Perhaps the most widely known scientific contribution from the research team has been the discovery that a proportion of female sex workers are resistant to HIV infection. A significant proportion of the past and ongoing studies with this cohort of study participants examines and aims to identify and understand the natural correlates of protection against HIV – genetic, immunologic, proteomic, and virologic studies have all been conducted and have evolved over time with the development of novel and robust techniques for study. In recent years, the group has worked towards the formation of a unified group of international colleagues based in the United States, Sweden, Israel, the United Kingdom and Canada who are able to share, validate and confirm correlates of protection against HIV. The work continues to yield more in depth information and understanding about the immune activation status of an individual and their susceptibility to infection. The work has extended into studies about these factors at mucosal sites, interrelations with TB, and the prospects for vaccine candidate development

2005-2014 - HIV prevention, care and support programs supported by PEPFAR, which are designed to implement the many HIV and STI prevention lessons and strategies learned through research efforts, and to scale up prevention and care efforts. Funded

The group operates ten clinics and drop-in centres in Nairobi for key populations and their families, reaching more than 20,000 female sex workers, 2,000 male sex workers and 1,000 injection drug users. The Sex Worker Outreach Program (SWOP) clinics are "one-stop shops", providing HIV testing, counselling and treatment, as well as family planning, STI and TB treatment and general health care and support to this highly mobile and stigmatised population.

The group carried out a national enumeration of key populations in Kenya in 2012, identifying both numbers of key populations as well as the location of “hot spots” in most of the major urban centres in Kenya.

The group has established a Technical Support Unit in the Ministry of Health, which is advising the National AIDS Control Council on programs and policies for key populations

A Learning Site has been established adjacent to one of the SWOP clinics in Nairobi, which is serving as both a national and regional centre for training

A Targeted Cell Phone Intervention to Improve Patient Access to Care and Drug Adherence in Patients Taking Antiretroviral (ARV) Medications in Kenya (KE.07.0045)

A targeted cell phone intervention to improve access to PMTCT services and uptake of perinatal antiretrovirals

#### Other Clinical Trials

An open label, non-comparative study to evaluate parasitological clearance rates and pharmacokinetics of Azithromycin and Chloroquine following administration of a fixed dose combination of Azithromycin and Chloroquine (AZCQ) in asymptomatic pregnant women with *Plasmodium falciparum* parasitemia in sub-Saharan Africa -A0661201

A Phase 3, open label, randomized, comparative study to evaluate azithromycin plus chloroquine and sulfadoxine plus pyrimethamine combinations for intermittent preventive treatment of falciparum malaria infection in pregnant women in Africa - A0661158.

A Double-Blind, Randomized Trial of Monthly Treatment with Topical Metronidazole and Miconazole Co-Formulated Vaginal Suppositories Verses Placebo for Preventing Vaginal Infections in HIV-Seronegative Women (DMID # 09-0070).

Limiting HIV target cells by Inducing Immune Quiescence at the female genital tract – ASA vs HCQ