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RE: Office of Disease Prevention FY2013 May Co-funding Award
International Center for Excellence in Research (ICER) in Uganda: Working Group on Non-communicable Diseases
DELIVERABLE REPORT

Since 2002, the ICER in Uganda has been supporting the Infectious Diseases Institute (IDI), an affiliate of Makerere University, and the Rakai Health Sciences Program (RHSP). IDI and RHSP have produced excellent scientific evidence to improve the care of HIV-positive patients, in an urban and rural setting, respectively. In addition to HIV, the ICER has led to groundbreaking research on other infectious diseases, including herpes simplex virus, hepatitis, malaria, respiratory diseases and tuberculosis.

While Uganda and Sub-Saharan Africa are now faced with the public health burden of such infectious diseases, by 2020 the World Health Organization anticipates that almost three-quarters of deaths in the region will be due to non-communicable diseases (NCDs), including cardiovascular disease, cancer and chronic respiratory diseases (WHO, 2011). As such, Uganda is currently faced with a dual burden of communicable and non-communicable diseases as the latter emerge.

The Office of Disease Prevention award was instrumental in laying the foundation for NCD prevention research with established research partners of the ICER in Uganda. The award was applied to both sites in Uganda: the IDI and RHSP. We convened a two-day non-communicable diseases workshop at IDI, which was the first ever at the institution. Stakeholders from National Institutes of Health, the Medical Research Council, Makerere University College of Health Sciences and Mulago Hospital participated; in total, 13 participants attended the workshop. The purpose of the workshop was to discuss NCD research needs and to develop research priorities at the intersection of HIV and NCDs. Refer to *Appendix A* for the meeting agenda, which drew upon local experts to lead discussion on HIV and NCD-related topics. Stakeholders shared how NCDs are currently being addressed at their institution, including a briefing by Medical Research Council staff and by Dr. Godfrey Katende, who is leading a nurse-run general medical clinic to address NCDs. Ample dialogue during the lectures and throughout the workshop generated 22 research ideas, presented in *Appendix B*. These research ideas were prioritized by feasibility according to fiscal and human resources.

Moving forward, attendees with a commitment to particular research ideas will serve as that champion. Through further discussions with IDI leaders, we plan to jointly devise a research plan to assess knowledge of NCDs among HIV patients and providers then train HIV counselors on NCD prevention through lifestyle modification and behavior change. The IDI is particularly interested in this intersection of HIV and NCDs as it anticipates the growing burden of NCDs among its HIV-positive population. We will collaborate with IDI in the development of

this new research field. Another area of interest identified in Kampala is to develop the nurse-led hypertension clinic into a more robust research setting to identify best practices in the care for patients with NCDs.

In rural Rakai, Uganda at the RHSP, Dr. Laura Sander had several meetings with Rakai Community Cohort Study (RCCS) staff to understand how and what non-communicable diseases-related data is ascertained. RCCS surveys >14,000 residents aged 15-49 annually; much of the information gathered relates to sexual practices but there are also questions pertinent to the epidemiology of NCDs. In particular, blood pressure was measured over the prior two cycles of the cohort study in addition to other lifestyle factors such as occupation, tobacco use, and substance abuse. These data will be analyzed to define the magnitude of hypertension and its risk factors in this rural region. Through this closer understanding of the epidemiology of NCDs, further research priorities will be developed.

As Uganda undergoes its epidemiologic transition from communicable to non-communicable diseases, the Office of Disease Prevention award to the ICER in Uganda has laid a solid foundation to incorporate prevention research into infectious diseases-focused research sites. Research priorities identified will continue to be refined as both NIH and local research partners have a great interest in NCDs. Starting at a point of overlap between HIV and NCDs meets local need and also serves to answer important questions on new NCD-relate challenges in the care of HIV-positive patients. Research that follows from the initial workshop held in Kampala and the meetings in Rakai will be strongly rooted in ODP's prevention mission.

Reference:

World Health Organization (WHO). (2011). Global status report on non-communicable diseases 2010. Geneva, Switzerland.

APPENDIX A: INFECTIOUS DISEASES INSTITUTE WORKSHOP AGENDA

HIV AND NON-COMMUNICABLE DISEASES WORKSHOP

INFECTIOUS DISEASES INSTITUTE LEARNING HUB, KAMPALA, UGANDA: 18-19TH NOVEMBER 2013

AGENDA

MONDAY 18TH NOVEMBER

8:00 AM	ARRIVAL AND REGISTRATION OF PARTICIPANTS
8:30 AM	INTRODUCTION OF PARTICIPANTS
9:00 AM	KEYNOTE ADDRESS BY DR. STEVE REYNOLDS
9:30 AM	HIV AND RENAL DISEASE BY DR. KALYESUBULA
10:30 AM	TEA/COFFEE BREAK
11:00 AM	HIV AND PSYCHIATRIC DISEASE BY DR. AKENA DICKENS
12:00 PM	MEDICAL RESEARCH COUNCIL NCD RESEARCH UPDATES BY DR. SAM BIRARO
12:30 PM	DISCUSSION
1:30 PM	LUNCH
2:15 PM	CLINICAL EXPERIENCE BY DR. KATENDE GODFREY
3:15 PM	HYPERLIPIDEMIA CASE DISCUSSION BY DR. NOELA OWARWO

TUESDAY 19TH NOVEMBER

8:00 AM	ARRIVAL OF GUESTS
8:15 AM	HIV AND HYPERTENSION BY DR. LAURA SANDER
9:30 AM	HIV AND DIABETES BY DR. NAKWAGALA
11:00 AM	TEA/COFFEE BREAK
11:30 AM	DRUG-DRUG INTERACTIONS BY EVA LAKER
12:30 PM	HIV AND AGING BY DR. ISAAC LWANGA
1:30 PM	LUNCH
2:30 PM	DISCUSSION
3:30 PM	CLOSING REMARKS
4:00 PM	CLOSURE

APPENDIX B: WORKSHOP RESEARCH PRIORITIZATION

Infectious Diseases Institute HIV & NCDs Workshop: Prioritization of Research Ideas

HIGH FEASIBILITY

Use of existing data:

1. Medication adherence in older vs. younger cohorts

Attainable via survey:

1. Provider NCD knowledge assessment
2. Patient NCD knowledge assessment
3. Prevalence of tobacco and alcohol dependence among hypertensive and/or DM patients
4. Psychosocial challenges in/of the elderly

Requires laboratory analysis:

1. Design low cost strategies to monitor for kidney disease – especially for patients on TDF-based regimens
2. Prevalence of APOL-1 gene in HIV-positive vs. HIV-negative and association between renal disease in HIV
3. Prevalence of kidney disease
4. Co-administration of septrin prophylaxis and TDF in renal disease
5. Assess DM control and HIV outcomes for diabetics on insulin vs. oral hypoglycemics

Prevalence studies (cross-sectional):

1. Prevalence of NCDs in lower health centers
2. Prevalence of NCD risk factors in schools
3. Prevalence of depression in diabetic and hypertensive populations
4. Prevalence of sequelae of hypertension and diabetes (CAD, CVA, retinopathy, renal disease, etc.) in hospital or clinic – requires definition and standardization of outcomes of interest

Case-control:

1. Socio-behavioral factors associated with late presentation of NCDs

Requires baseline assessment, intervention and/or follow-up:

Health promotion/health education

1. Using HIV counselors for NCD health education/health promotion – requires development of screening tool to identify patients at risk
2. Impact of patient education (diet, exercise, etc.) on modification of risk factors for NCDs on control/prevention of NCDs
3. Impact of modification of NCD risk factors on psychiatric illness
4. Adaptability of geriatric assessment tools for HIV care and assessment of outcomes based on use of these tools

Health systems

5. Development and implementation of best practices on managing hypertension at IDI
6. Development and use of an integrated tool for management (education, screening, treatment) of NCDs – compare outcomes with existing systems to inform policy
7. Task shifting in the diagnosis and management of psychiatric disease

LOW FEASIBILITY