



Strengthening capacity to optimally care for vulnerable groups at risk for sexually transmitted infections in Kampala, Uganda

Context

Sexually transmitted infections (STIs) are among the most common infectious diseases. The World Health Organization (WHO) estimates 340 million new cases of STIs occur annually, with young adults at highest risk. Complications include infertility, chronic pelvic pain, ectopic pregnancy, maternal mortality, fetal loss, perinatal morbidity and mortality.

Syphilis is an important public health problem in Uganda and other sub-Saharan African (SSA) countries and is of particular concern in pregnancy because it can be transmitted to the fetus. Congenital syphilis may result in fetal death and long term complications to surviving infants. The burden of syphilis in pregnancy in 43 countries in SSA is estimated at 12.5 million disability adjusted life years (DALYs) with Uganda contributing approximately 660,000 DALYs. Although the treatment is inexpensive, traditional methods for laboratory screening are time consuming and associated with loss to follow-up. Screening with recently introduced immunochromatographic point-of-care syphilis (ICS) tests and subsequent treatment of positive cases with penicillin is highly cost-effective, with an average cost/DALY averted of US\$11 (range: US\$2–US\$48) for all 43 countries in SSA. However, the tests are not routinely available in Ugandan public health system.

The partner site, the Infectious Diseases Institute (IDI), operates the Adult Infectious Diseases Clinic (AIDC) with 8000 HIV positive adults in Kampala region. AIDC is accredited as a specialized provider of HIV services and is located within the Mulago National Referral Hospital Complex. AIDC provides technical support to Kampala City Council clinics for management of patients with complex conditions. In Uganda, clinical management of STIs is outlined in Uganda Clinical Guidelines 2013, published by the Ministry of Health, where a syndromic approach is emphasized. For higher level health facilities, a district clinician manual is available that recommends testing for STIs but implementation barriers remain. New diagnostics offer greater confidence in diagnosis to clinicians, reduce drug wastage and support public health surveillance systems. In a recent research project at IDI, 3.6% and 2.6% of asymptomatic women were diagnosed with gonorrhoea and chlamydia, respectively, with women <25years at increased risk for STI. Notably, these women would neither be diagnosed nor treated with the syndromic approach.

In western countries, diagnosis of STIs is driven by diagnostics and treatment is tailored to the pathogen identified. This project will develop capacity for accurate diagnosis and treatment for 3 key STIs (syphilis, gonorrhoea and chlamydia infections) in a tertiary clinic setting in Kampala.



Project description

The goal of the project is to improve diagnosis and treatment of the 3 key sexually transmitted infections i.e. syphilis, gonorrhoea and chlamydia in Kampala in a sustainable manner, using innovative laboratory testing approaches.

In order to achieve such a goal the project has set the following objectives:

1. To screen and counsel 800 pregnant women during antenatal care for syphilis using ICS tests and link the positives to care, within a 12 months' timeframe
2. To conduct annual routine screening and counsel for *Chlamydia trachomatis* and *Neisseria gonorrhoea* using GeneXpert® systems and syphilis testing by ICS among 1000 asymptomatic patients at high risk* for acquisition of STIs or HIV.
3. To clinically manage 300 STI cases incorporating a partner management component in at least 30% cases over 12 month
4. To conduct 6 biannual Continuing Medical Education on STI management in Kampala over 12 months
5. To monitor and report annual program costs at facility level for implementation of objectives 1, 2 and 3 above

*High risk patients include young adults, commercial sex workers, long distance truck drivers, patients with multiple sex partners, barmaids, high risk sexual exposure in last 3 months.

Sites

The project will be conducted in the AIDC at IDI for HIV positive patients. After 6 months, the project will be extended to Kisenyi Health Centre IV, one of the clinics within the network of the AIDC, where an unselected population of HIV positive and negative patients will benefit from the project. IDI has a GeneXpert® machine that is currently being used exclusively for TB diagnosis. Notably, GeneXpert machines are widely available in Uganda and are used as a first test for sputum testing for TB. This project will extend this functionality by acquiring cartridges for STI (chlamydia and *N. gonorrhoea*). Patients and partners will receive STI counseling by a trained counselor and they will be managed by a medical officer at the site. Pharmacologic management will be made available through the Uganda sites which receives financial support for STI drugs from the Government of Uganda. The University of Zurich will provide onsite and distance training support for clinical management of STIs and laboratory technical support and quality assurance for the project.



Partnership

The project is conducted within an ongoing partnership between IDI, which is a not-for-profit organization within Makerere University in Uganda lead by Dr. Mohammed Lamorde and the Division of Infectious Diseases and Hospital Epidemiology at the University Hospital Zurich.

IDI has a mandate to build capacity for Africa in the field of infectious diseases using a health-systems approach. It has a strong commitment and proven track record in clinical care, research, education, and training. In collaboration with national and international partners the IDI conducts projects in prevention, care and treatment; staff training; research; outreach; and systems strengthening. IDI has over 30 ongoing research projects, has trained over 2500 health care workers across 28 African countries and supports service delivery in three of the nine regions of Uganda. It seeks to deliberately develop and enhance research capacity through institutional research partnerships, especially in the area of basic and translational science.

The Division of Infectious Diseases and Hospital Epidemiology at the USZ is specialized in the prevention, diagnosis and therapy of infectious diseases. Its research program comprises basic, translational, clinical and epidemiological research. The group works in close collaboration with all different specialties in the University Hospital Zurich and with various national and international partners.



The partnership between researchers from the IDI and USZ has organically grown over several years (www.r4gh.org). The relationship is founded on mutual trust and shared ownership. Both institutions view the collaboration as mutually-beneficial. The research collaboration has been used for research capacity development. To create a sustainable, long-lasting partnership, the partnership is committed to invest in young researchers, clinicians, and laboratory technicians. The collaboration is highly patient-centred: the it explores research questions arising from the bedside and it aims to improve clinical outcomes for patients. The first joint project investigated the association between anti-tuberculosis (TB) drug concentrations in blood and treatment



outcomes in TB/HIV co-infected Ugandans, and established a cohort of HIV/TB co-infected patients at IDI. This project has transformed into a multifaceted research, education, and clinical care platform resulting in a variety of nested projects. A second study, focusing on the emerging challenge of HIV drug resistance was completed in 2015 and its follow-up study is ongoing. So far, the partnership has been focused on HIV and TB. In future, the plan is to expand the research portfolio to other infectious diseases and non-communicable diseases.

IDI, represented by Dr Lamorde has recently joined a network of European Esther Alliance southern partners.

Timeframe

April 2017 – March 2018

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