



ANNUAL REPORT

JULY 2017/JUNE 2018



MAKERERE UNIVERSITY

Infectious Diseases Institute
College of Health Sciences, Makerere University



OUR COVERAGE

Ugandan districts in which IDI is active: 55% population covered (at June 2017)

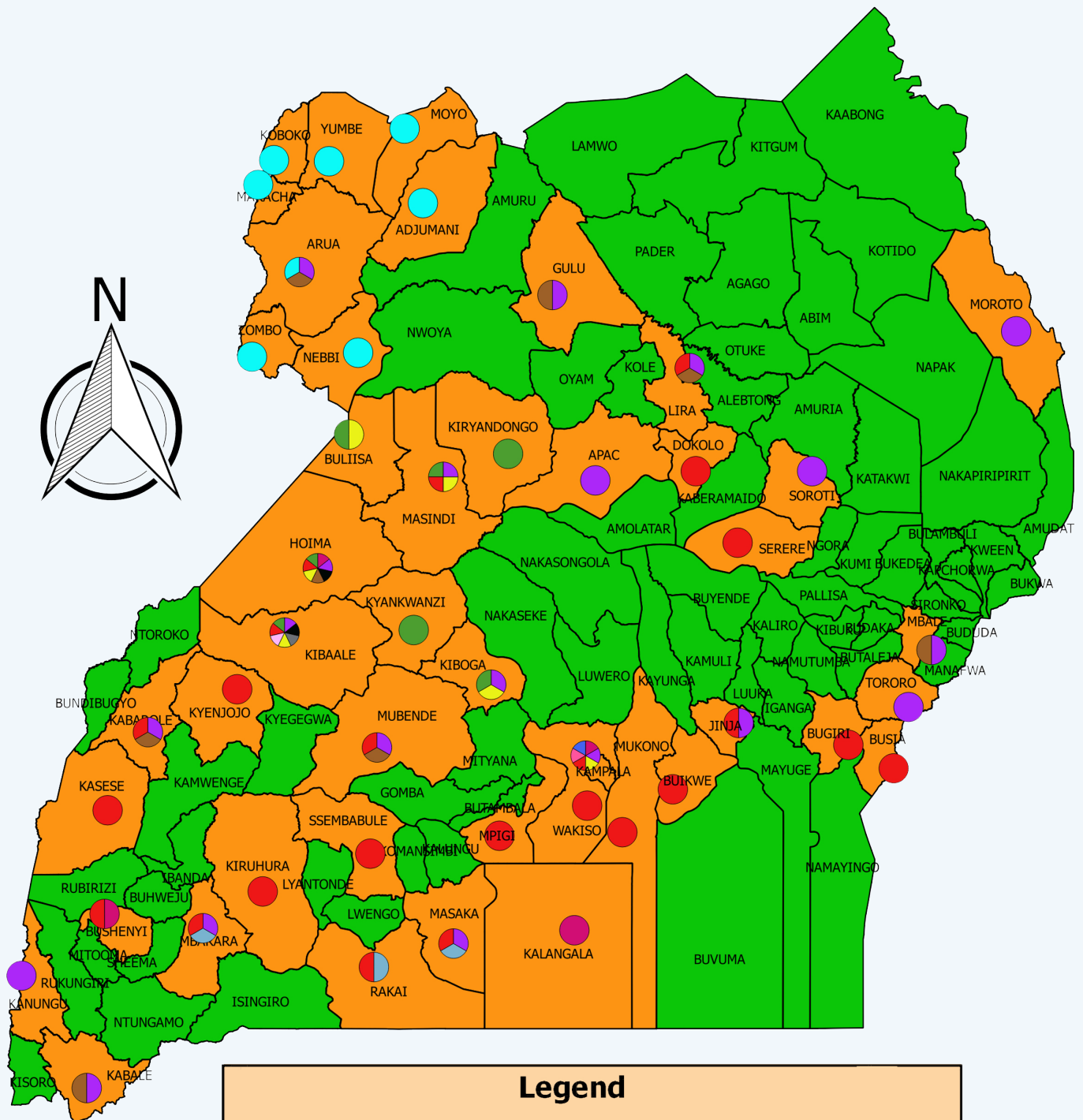




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Targeted outreaches in communities is critical in HIV and sexual reproductive health responses. Photo credit: Solome Ttunzi /IDI



MESSAGE FROM THE CHAIR IDI BOARD OF DIRECTORS

I am delighted, yet gain, on behalf of the IDI Board of Directors to share with all our stakeholders the highlights of the Institute's contributions over the past year in this 2018 annual report. It has been a highly productive and pivotal year.

We appointed a new Executive Director on the 1st of July 2018. Dr. Andrew Kambugu, the pioneer infectious diseases fellow at the Institute has previously served as the Head of Department for the Prevention Care and Treatment Programme (2005-2012) and the Research Programme (2012-2018). We are excited about the next phase of the Institute's development and under his leadership.

The IDI's programmes and outputs remain relevant to the national and regional priorities in the field of infectious diseases. Our programmes, more than ever, are supporting the Ministry of Health and local governments to accelerate the achievement of epidemic control of HIV/AIDS by 2020. Overall, we are responsible for almost one third of the national HIV care and treatment programming in Uganda as a lead implementing partner in 3 consequential regions of the country (Kampala/Wakiso, Mid-western (Bunyoro) and West Nile). Additionally, we have expanded the scope of our contributions to include hepatitis B, sexually transmitted infections, diseases of significant epidemic potential and global health security. Our commitment to strengthening health systems through research and capacity building has resulted in over 700 peer-reviewed publications, contributing significantly to the visibility and ranking of Makerere University, our mother institution.

The institute, as a dynamic entity within a leading academic institution has made significant investments to maintain its national and regional relevance. We are particularly proud of our newly established global health security programme that is already making substantial contributions to the national capacity to prevent, detect and respond to infectious disease

LETTERS FROM OUR LEADERSHIP

threats including the increasingly important antimicrobial resistance. The Laboratory Services Programme at IDI has been enhanced by the acquisition of the College of American Pathologist (CAP)-certified IDI Core Laboratory.

Looking forward, the Institute will invest in additional catalytic areas including bioinformatics in order to contribute to the "omics" revolution in the biological sciences. The stellar achievements of 2018 are the visible results of the dedicated efforts of the management and staff of the Institute, our partners in the central and local government, academia (both in Uganda and abroad), development partners including the US government and above all, the communities we serve in Uganda and the region. On behalf of the entire Board of the IDI, I thank you all for making 2018 a fruitful period in our institutional journey.

With best regards,



Rev. Prof. Samuel Abimerech Luboga

Chair, IDI Board of Directors

Infectious Diseases Institute (IDI)

College of Health Sciences, Makerere University

MESSAGE FROM THE IDI EXECUTIVE DIRECTOR

Dear Esteemed Reader,

I am very pleased to welcome you to the 2018 issue of the Infectious Diseases Institute (IDI) annual report. Since my appointment as IDI Executive Director, I have been extremely privileged to build on the firm foundation established by my predecessors in this office while concurrently spearhead new initiatives to maintain IDI's continued relevance in the dynamic infectious diseases landscape.

What are the key highlights of this 2018 annual report? The IDI remains a leading implementing partner of the Ministry of Health (MoH) for HIV/AIDS service delivery. By supporting the Kampala/Wakiso, Mid-western (Bunyoro) and West Nile regions, IDI has oversight for one on three Ugandan living with HIV/AIDS today. IDI is grateful for the unprecedented support of the US government through PEPFAR and the US Centres for Diseases Control and Prevention (CDC) that facilitates this work.

The HIV centre of excellence at Mulago has underpinned our regional contribution through the development of differentiated service delivery models (DSDM). The centre is a referral service for complicated HIV case management, hosts specialised clinics and is a platform for IDI's research programme.

I am gratified that the Institute continues to shape policy and practice in infectious diseases through our high-impact publications, and in the process enhances the stature of Makerere University. Our IDI Kasangati centre plays a leading role in HIV prevention research.

The IDI has played its part in ensuring that the health workforce maintain critical knowledge and skills. The IDI Training programme is playing an increasingly leading role in offering distance learning/online training platforms.

The Academy for Health Innovations and Impact at the Institute, a hub for exploring cutting-edge technologies and innovations is steadily building a network of like-minded partners and convened the first Health and Innovations Conference this year.

This year also witnessed the birth of the IDI College of American Pathologist (CAP)-accredited Core Laboratory. This facility, which builds on the firm foundation established by the Makerere University–Johns Hopkins University (MU-JHU) Research Collaboration that was hosted at the Institute, will continue to be cornerstone for research and clinical care.

The IDI has also inaugurated a programme in Global Health Security (GHS) to contribute to the changing landscape of infectious diseases. The programme is already playing a leading role in enhancing national and regional capacities to prevent, detect and respond to emerging infectious disease threats.

I am extremely optimistic about the continued relevance and contribution of IDI in the infectious diseases sphere. In March 2019, the Institute and its partners will launch an Africa Centre of Excellence (ACE) in bioinformatics and data science at Makerere University. We have the great opportunity to end the AIDS epidemic in our generation and to develop robust models for the protection of our communities against looming emerging infectious disease threats.

Finally, let me take this opportunity to express my profound gratitude to our Board of Directors for their guidance over the years, the management and staff of the Institute for their tireless efforts across the different programmes, our programme partners including the CDC, the Kampala City Authority, the government of Uganda, including the MoH, partner academic institutions that are too numerous to list and the World Health Organisation which has been instrumental as we develop the GHS programme.

May you find the perusal of this 2018 annual report a most rewarding experience!



Dr. Andrew D Kambugu FRCP

The Sande- McKinnell Executive Director
The Infectious Diseases Institute (IDI)
College of Health Sciences, Makerere University

MEASURING SUCCESS: THE YEAR IN NUMBERS

7,7
active clients
Mulago Referral

28,106
trainees



672
published articles



435,722
males
circumcised



1,2
full time
employees



83

ts at IDI
rral Clinic

13,184

women receiving
PMTCT

102

projects running
concurrently

301,771

people living with HIV
supported through outreach

13

me
yees

PREVENTION, CARE & TREATMENT PROGRAMME

The Prevention, Care and Treatment (PCT) Programme provides high-quality multidisciplinary care through sustainable and innovative clinical platforms, which are used for research and capacity building.

Through the Adult Infectious Diseases Clinic (AIDC) at Mulago National Referral Hospital, the programme provides specialized HIV services to 7,783 people living with HIV directly and also provides support to models of care for advanced HIV disease, mental health and prevention of mother to child transmission of HIV.

The programme introduced an innovative dedicated service for patients with detectable HIV viral loads and treatment failure, the Treatment Failure, Adherence and Genotype clinic. Complementing previous equipment investments in the Urgent Care section, the programme introduced hi-tech ultrasound services for obstetric indications and investigation of a wide range of communicable and non-communicable diseases.

TREATMENT OPTIMIZATION EFFORTS

In collaboration with the IDI Research Programme, the DOLPHIN-1 and 2 studies have generated early information on the appropriate dose of dolutegravir (DTG) in late pregnancy. The clinic was designated by the Ministry of Health (MoH) as a national pilot site for the roll-out of DTG as a preferred first line drug with over 1,000 patients switched to DTG-based antiretroviral regimens during the year 2018. The US Food and Drug Administration (FDA) issued notices of a potential risk of birth defects among babies born to mothers who used DTG around the time of conception. Pending the provision of more substantive data, the program responded through patient education, provision of contraception options and management and reporting of pregnancy exposures. Furthermore, the Programme supported consultations at the national level in addition to sharing IDI standard operating procedures with the MoH for operationalisation. In order to improve clinical management of a broader set of infectious diseases, the clinic in partnership with the University of Zurich (UZH), introduced microbiology testing for patients presenting with symptoms suggestive of urinary tract infections (URASP). Additionally, under the same (UZH) partnership, the ESTHER STI Project is implementing point-of-care diagnostic testing for syphilis, gonorrhoea and chlamydia Sexually Transmitted Infections (STIs). The project targets patients who are at a high risk of contracting

STIs but present with no symptoms. The project facilitates treatment for patients and their partners to prevent spread of infections like syphilis from pregnant mothers to their unborn babies. Notably, the project innovatively extended the use of GeneXpert™ commonly used for TB diagnosis to include testing for gonorrhoea and chlamydia for patients receiving their results on the same day. Antimicrobial stewardship measures have been implemented in the clinic to promote rational antibiotics prescription as well as educate patients on risks associated to antibiotics misuse.

The PCT Programme continues to champion patient safety measures by working directly with patient groups to identify safety measures such as infection prevention and control. Following a successful pilot in 2017, PCT trained 90 expert clients/volunteers attending KCCA Health Centers in Kisuggu, Kiswa, Kitebi, Komamboga, Kawaala, Kisenyi and IDI Mulago to promote and advocate for a patient safety culture in their health facilities.

In an effort to promote the culture of “going green” the clinic commenced the implementation of a pilot model for ‘re-use and re-cycling’ of used or empty HIV plastic medication containers. Thus promoting proper waste management hence mitigating possible harm to the environment accruing from discarded plastic medication containers.



Strengthening locally-owned epidemic responses through community empowerment, dialogue and participatory health approaches.

Photo credit: Kenneth Mulindwa/IDI

WHAT'S NEXT

In 2019, The programme will expand its scope of services by setting up a physiotherapy clinic, to address physiological complications in clinic patients, and expand waste management model project to partner health facilities as part of capacity building effort.

Strengthening specialized services for complex patients will remain a priority. Lastly, the programme will pilot a new DSDM on 'Couple Representation' clinic visits to improve efficiency of the service.

7,783

ACTIVE CLIENTS AT IDI-MULAGO REFERRAL CLINIC



THE UGANDAN ACADEMY FOR HEALTH INNOVATION AND IMPACT is proud of its efforts to improve health outcomes through innovations in clinical care, capacity building, systems strengthening and research, which inform policy and practice, with a strong emphasis on HIV and TB.

In March, 2018, the Academy organised the first Health Innovations Conference in Uganda. The conference convened a rich audience, keen to share ideas on innovation for health. It was an opportunity to showcase the work of our existing sub-grantees who are implementing a range of innovations and have helped reach over 20,900 beneficiaries and 2,015 healthcare workers by the end of 2018.

In working with our sub-grantees the Academy is increasingly focusing on the challenge of delivering care in the 'last mile', as well as ensuring that no-one is left behind with advances in health services. A key insight gleaned from this experience has been the realisation that low-tech interventions are essential and can run co-currently and compliment hi-tech innovations. Whilst The Academy is not afraid to dream big, it seeks to contribute to sustained and relevant innovations.

In 2019, The Academy will harness the pointed feedback form the inaugural Health Innovations Conference and stakeholder dinner to enrich its programming. It has also developed an informal network of organisations and individuals interested in health innovations based on expressed interests; and 2019 will witness the formalisation of this network.

As a key activity, The Academy will host our next Health Innovations Conference on 19-20th March 2019 with the theme "Sustainable Health for All: Harnessing the Fourth Industrial Revolution. Virtual Reality, Bio-informatics, Artificial Intelligence and drone technology", are more real in Uganda than they have ever been, thanks to the nature of the country's youth and our dynamic socio-economic landscape.

Promoting access to comprehensive quality health care packages for key and priority populations.
Photo credit: Solome Ttunzi/IDI



TRAINING & CAPACITY DEVELOPMENT

The IDI Training Programme offers advanced and specialised courses focusing on the management of HIV and related infectious diseases. This year, the training programme witnessed notable improvements in various aspects of infectious disease management particularly in health facilities whose staff were trained by IDI.

COURSE DIVERSIFICATION

The source of trainees increased to include eight new districts through the “Regional Health Integration to Enhance Services” project in the Acholi region to include [Agago, Amuru, Gulu, Kitgum, Lamwo, Nwoya, Omoro and Pader districts]. The IDI Training Programme contribute is the technical lead for the laboratory strengthening of the RHITES Acholi project a United States Agency for International Development (USAID)-funded initiative, implemented by University Research Company. The project has provided an unusual opportunity for partnerships with private-sector actors. like the International Hospital in Kampala (IHK) in the sphere of training and capacity-building.

Since the inception of the Programme , over 28,000 participants have been trained in the areas of HIV/AIDS, malaria, tuberculosis (TB), systems strengthening, pharmacy, laboratory, research and especially dangerous pathogens.

The programme has further diversified the range of courses offered- new areas of training include; management of emergencies in circumcision, implementation of HIV/AIDS prevention, treatment, and control of surge activities. New training courses include: Differentiated Service Delivery (DSDM) Models, Stepping Stones, Clinical Systems Mentorship, Voluntary Medical Male Circumcision (VMMC) emergency resuscitation, Management of VMMC adverse events, TB-DHIS2, and Integration of TB services into Reproductive, Maternal, New-born and Adolescent Health (RMNAH) programs.

28,106

**AFRICAN HEALTH
WORKERS TRAINED
SINCE INCEPTION**

Training on Protective Personal Equipment donning on outbreak preparedness for health workers in Jinja Regional Referral hospital.

Photo credit: Kenneth Mulindwa/IDI





Demonstration of chest compression skills to trainees during SMC emergencies. Photo credit: Phoebe Nakamatte/IDI

E-PLATFORMS

In order to be in sync with the training innovations landscape and to respond to the MoH recommendation of training at the health facilities, the Training Programme has acquired a state-of-the-art E-learning recording studio which has enhanced the Institute's capacity to generate online learning resources. This project was implemented with the kind support of Jansen and Jansen Corporate Citizen's Trust. Up to 37 online courses including the management of patients with complicated HIV/ TB have been uploaded on the platform. This platform (<https://elearning.idi.co.ug/>) can be freely accessed by health workers in the region. Notably, 345 e-certificates of completion have been downloaded from the IDI e-learning platform since it was launched.

Additionally, the Advanced Treatment Information Centre (ATIC) was relaunched as a 24-hour call service, offering health workers unlimited access to expert advice on infectious diseases management and

ATIC staff have addressed over 1,200 queries this year.

Finally, the IDI Training Programme is a partner in the Malaria Action Program for Districts (MAPD) project, and has contributed to the certification of 12 laboratory personnel under the World Health Organization (WHO) malaria laboratory diagnostics program.

WHAT'S NEXT

In 2019 the training programme will be expanding the Institute's capacity to build resources, by developing new continuous professional development (CPD) products in line with global, regional and national priorities, strengthen and maintain knowledge competencies of our faculty so as to; facilitate sustainability of highly skilled health workers and lastly maintain the Institute's accreditation status in order to continuously offer CDP activities to Ugandan health workers.

IDI rolls out NAVISION training to its partners
Photo credit: Kenneth Mulindwa/IDI



RESEARCH PROGRAMME

The Institute's Research programme seeks to consistently produce outstanding, internationally-recognized scholarship in infectious diseases that influences global policies and practices, with emphasis on Africa. The current programme portfolio focusses on HIV and related infections, although also includes infection-related malignancies, cardiovascular and other non-communicable diseases (NCDs).

LEADERSHIP TRANSITION

Dr Andrew Kambugu, took on a new position as the Executive Director of the Institute on the 1st of July 2018. He has led the research programme for over 6 years and after a competitive and international search, Dr. Barbara Castelnovo was appointed as the new Head of IDI's Research Programme.

Dr Castelnovo joined the Institute in 2004 as a senior medical officer and rose through the ranks serving as the leader of the longitudinal cohorts unit in the department. She is a highly published research scholar whose work has focused on treatment outcomes in HIV cohorts. Dr. Castelnovo served as Deputy Head of the Research Programme for the last five years prior to her current appointment. She has also been the leader of the Research Capacity Building Unit for the last two years, and brings to the table many innovative ideas including peer-to-peer mentorship.

CAPACITY BUILDING

Over the past two years, final-year PhD scholars (candidates) supported by the Institute were assigned as co-mentors to Masters scholars so as to pilot the idea of "sustainable research capacity building", which relies on internal supervision and mentorship. The focus areas for mentorship included advanced bio-statistical methods for longitudinal studies and clinical trial, health systems research, translational research as well as peer-to-peer mentorship. Under peer-to-peer mentorship, the programme has successfully piloted a PhD Club and knowledge sharing forum for senior research fellows.

LONGITUDINAL COHORTS

In line with the Institute's commitment to capacity-building, the program through the European and Developing Countries Clinical Trials (EDTCP) Partnership, was awarded a senior fellowship grant in which the program secured funds to start and track an HIV infected cohort of patients aged 60 years and above for a period of two years. Remarkably, this will be the first geriatric cohort study in sub-Saharan Africa, and will host one PhD and two Masters students. This award will consolidate the programmes leadership in the increasingly relevant special focus on "HIV and Aging".

TRANSLATIONAL LAB

The translational laboratory which is making substantial contribution to the capacity of laboratory-based sciences within the College of Health Sciences, Makerere University supports the study of numerous lab assays. The tests offered by the lab range from regular assays like the Gene pert (TB diagnosis), to specific assays, like LAM, CRAG, antibiotic culture and sensitivity, ELISA, flow cytometry, molecular studies, and pharmacokinetic studies. The labs capacity has been enhanced with the receipt of new equipment including the Care HPV system for HPV diagnosis, a Bio Spectrometer (Nanodrop), and the Luminex MAGPIX for multiplex cytokine assays.

The laboratory is also the proud home of a mass spectrometer, a kind donation from The University of Zurich. Allan Buzibye, an IDI laboratory technologist has received additional training in advanced pharmacokinetics assays in Zurich in order to expand the range of PK studies that can be undertaken at the Institute. The Spectrometer, which is the only one of its kind in the country and the region will be a university-wide resource available to research groups across different disciplines.

Additionally, Emmanuel Mande, a laboratory technologist, received an international scientist's mentored award from the Centre for AIDS research.

STATISTICS AND DATA MANAGEMENT UNIT

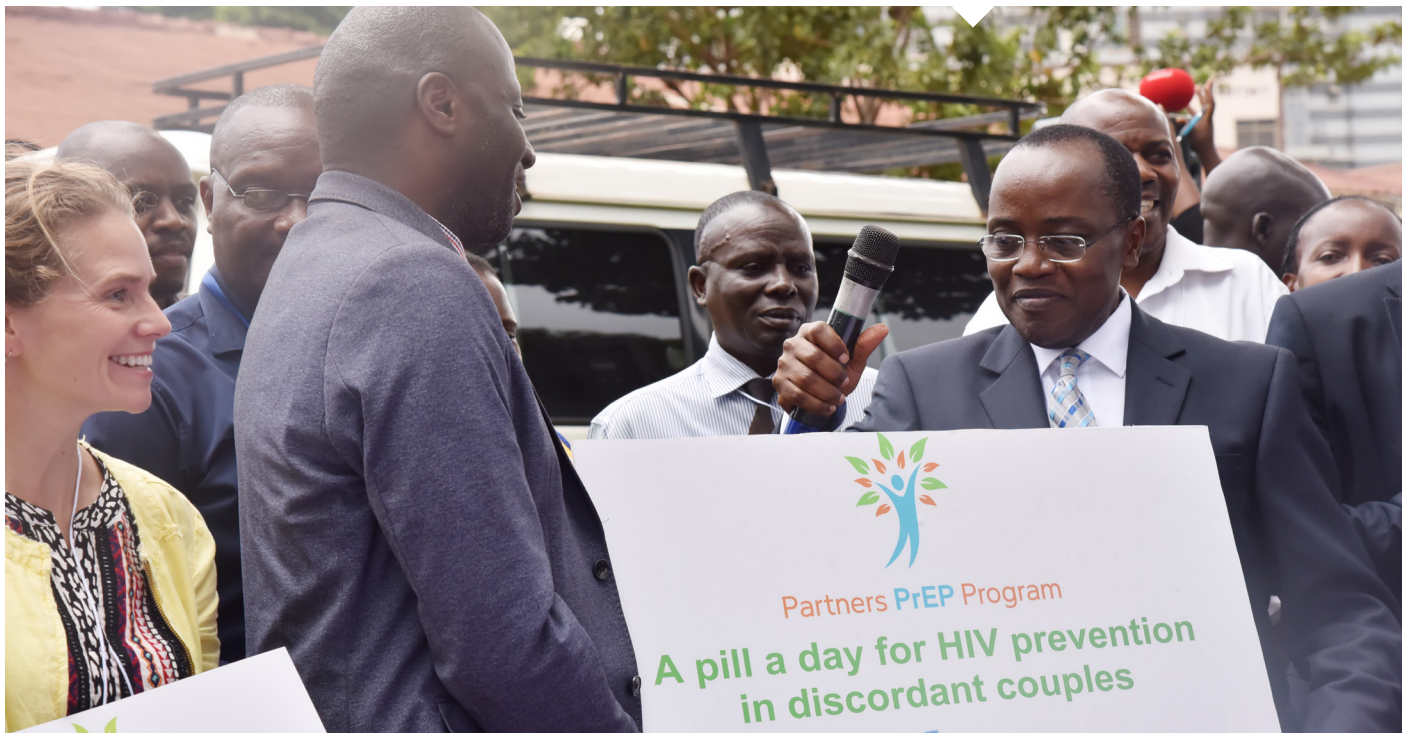
The Research Programme boasts of a dedicated Statistics and Data Management Unit with a growing team of statisticians and data managers who support institutional data-related needs.

The statistical team has supported the implementation of over 70 studies, having first-authored three manuscripts while the rest were co-authored by in-house and international researchers/collaborators. Additionally, our clinical DataFax data management unit, which started in 2009, has successfully supported the data management of single and multi-site clinical trials (17 ongoing, eight upcoming, and 20 closed studies). This year the Statistics and Data Management Unit acquired an institutional licence to use REDCap, a database management software, and supports over eight studies with this technology.

672

PEER REVIEWED
PUBLICATIONS

IDI-Kasangati launches Partner's PrEP program at Kiswa Health Centre III
Photo credit: Solome Ttunzi/IDI



IDI-KASANGATI

The Kasangati centre focuses on HIV prevention research since inception, and has trained over 199 counsellors in Couples HIV Voluntary Counselling and Testing (CHCT). Established in Partnership with the University of Washington, Seattle, the Centre has screened over 2,400 HIV serodiscordant couples for research studies, and enrolled 1,485 couples into three pivotal studies (Partners in Prevention HSV/HIV Transmission Study, Partners PrEP Study, and Partners Couples Observational Study (immune correlates)).

NEW STUDIES

THE PARTNERS PrEP PROGRAM

This year, the Centre launched a number of new studies including The Partners PrEP Program which will offer HIV serodiscordant couples in 12 facilities around Kampala, and all KCCA sites. Currently, over 200 couples have been enrolled, and 45 health workers from four facilities trained.

OBUMU STUDY

The OBUMU study which was launched at Kitebi HC.III focuses on HIV-positive women in PMTCT B+ programs in Kampala. It offers HIV self-testing (HIVST) kits to their partners alongside teaching aids on how to use the kit. The study encourages individuals to seek testing and counselling services if they receive a positive result, and provides both a voucher and referral, and brief educational materials on PrEP and ART relating to treatment or prevention contingent on the HIV test result.

EMPOWER STUDY

The Empower study, will examine the efficacy of two robust, evidence-based, self-controlled HIV prevention tools - HIVST and antiretroviral pre-exposure prophylaxis (PrEP) in preventing HIV acquisition among sex workers

BARRIERS STUDY

Lastly, the Barriers Study is investigating the possible barriers to PrEP access and adherence in high priority sub-populations of SDCs and Most at Risk Populations, as well as healthcare workers. The goal is to inform policy, including acceptability and feasibility of PrEP use. An abstract on the study was presented at the "Adherence conference" in Miami in June 2018.

IDI-Kasangati launches Obumu study
Photo credit: Abubaker Kazibwe/IDI



OUTREACH PROGRAMME

The IDI Outreach Programme is committed to increasing access to quality and comprehensive health services for HIV/AIDS and other infectious diseases in Uganda, through innovative and strengthened health systems, in partnership with the Ministry of Health (MoH) and other key stakeholders.

The programme uses a district-wide health systems strengthening (HSS) approach, targets specific health-system building blocks including; strategic information systems, supply chain management systems, and laboratory services, as well as human resource capacity and infrastructural modifications.

With the technical support and funding through the US Centres for Diseases Control and Prevention, the Outreach programme supports comprehensive HIV services in Kampala and Wakiso, eight districts in the Mid-Western region [Hoima, Kakumiro, Kibaale, Kagadi, Kikuube, Buliisa, Masindi and Kiryandongo] and nine districts in West Nile region [Nebbi, Pakwach, Zombo, Arua, Maracha, Koboko, Yumbe, Moyo and Adjumani]. Through the programme comprehensive HIV/AIDS services are extended to all refugee communities in the West Nile region and Kiryandongo.



“Through the IDI Kampala region HIV project, coordination has been strengthened, duplication of services has reduced and as a result intensified IDI support, we’ve noticed improved reporting and control of epidemics early enough to effectively respond and control, as seen in Kampala” - Dr. Christopher Oundo, KCCA supervisor



Outreach program team provides family planning services.
Photo credit: Kenneth Mulindwa/IDI

Dr. Christopher Oundo explains differentiated services delivery models provided at the IDI-supported Kisenyi HCIV & the 'surge' strategy all made possible via CDC funding.
Photo credit: Solome Ttunzi/IDI



...ion of implementing partners in Kampala has
...accountability of outputs has improved. With
...d disease surveillance that has enabled us to detect
...it happened with the recent cholera outbreak in
...medical services



Targeted outreaches in communities is critical in HIV and sexual reproductive health responses. Photo credit: Solome Ttunzi/IDI

PROGRESS THUS FAR

ACHIEVING UNAIDS 90-90-90 TARGETS

This year, notable contributions have been made towards achieving the UNAIDS 90-90-90 targets towards the elimination of HIV/AIDS by 2020. Almost 99% of all 300,000 HIV positive clients IDI support across the three regions are active in care and on life-saving ART.

VOLUNTARY MEDICAL MALE CIRCUMCISION

Over 600,000 males have been voluntarily circumcised for HIV prevention through IDI's Outreach Programme. This represents over 10% of all the circumcisions that Uganda has undertaken over the past eight years.

STRUCTURE RENOVATIONS

IDI has overseen the renovation of different health facilities in the three supported regions. This included 14 regional laboratory hubs, which were furnished with modernized equipment to provide high quality and timely laboratory services. Notably, for the very first time, a

local government laboratory facility (Kiryandongo General Hospital Laboratory) received international ISO accreditation as a SANAS Medical Testing Laboratory to cover Hematology, flow cytometry, serology and tuberculosis with IDI support.

SAVING MOTHERS GIVING LIFE

Lastly, the programme successfully supported the five years' Saving Mothers, Giving Life (SMGL) project, to its completion in June, 2018. Through this project, IDI and its partners demonstrated a 44% reduction in the maternal mortality ratio (death of mothers related to delivery).

WHAT'S NEXT

Moving forward, the Outreach programme will continue to consolidate and sustain its progress in ensuring continued provision of high-quality comprehensive health services to the communities in all the supported regions.

Renovated laboratories furnished with high tech equipment in Hoima district. Photo credit: Kenneth Mulindwa/IDI



LABORATORY PROGRAMME

This year the Laboratory Services Program at IDI was greatly enhanced by the creation of the IDI Core Lab an entity that is entirely under the management of IDI. This lab has replaced the facility and staff of what was previously the Makerere University- Johns Hopkins University (MU-JHU) Core Lab and for which accreditation by the College of American Pathologists (CAP) has been maintained. The highlight of the IDI Laboratory services include:

HIV GENOTYPING

The Institute's Core Laboratory, aims to contribute to innovative and seminal HIV research, with a focus on the use of molecular tools. These tools allow for unmatched information on HIV genomic structure and population. This data is essential for monitoring dynamics of HIV diversity and identifying newly emerging HIV strains that may have an impact on diagnostic assay designs and antiretroviral therapy efficacy.

As a research hub, IDI Core Laboratory acquired the ABI 3730 DNA Sequencer equipment a high-output sequencing instrument for genotyping. The HIV genotyping assay validation process is underway and will lead to provision of accredited genotype assays.

Priscilla Atim (Lab Technologist) operating the ABI 3730 DNA Sequencer

NEW CHEMISTRY AND HORMONAL ASSAYS/INSTRUMENTS

Elecsys Cobas e411 analyser at IDI Core lab

The Elecsys Cobas e411 equipment uses Electrochemiluminescence (ECL) technology. This allows it to provide superior analytical performance and highly sensitive detection services for testing markers of infectious diseases including; thyroid function, fertility/hormones, anaemia, bone markers, tumour markers, and organ function markers etcetera. This has increased the range of tests performed at Core Laboratory.

Currently AFP, Anti-HBc, Anti-HBs, Anti-HCV, HBsAg and HIV combi tests are available. Validation of other new tests is ongoing and will be added as necessary.

NEW STUDIES & TESTING VOLUMES

In April 2018, the Core Lab participated in the PPD DAIDS audit, which was completed successfully. As a result, it qualified as one of the Labs to test for the much coveted HPTN Network studies. After successful approval, the lab was cleared to test for HPTN. Samples from approximately 500 participants are expected for this study, from two CRS and

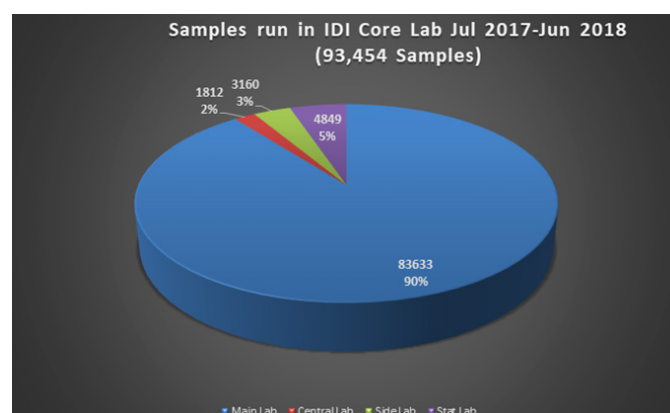
over the course of 4.5 years.

The laboratory is also the proud home of a mass spectrometer, a kind donation from The University of Zurich. Allan Buzibye, an IDI laboratory technologist has received additional training in advanced pharmacokinetics assays in Zurich in order to expand the range of PK studies that can be undertaken at the Institute. The Spectrometer, which is the only one of its kind in the country and the region will be a university-wide resource available to research groups across different disciplines.

Other new studies include IMPAACT 2010 with 2 CRS, IMPAACT 2007 & IMPAACT 2009, HIV self-testing-Obumu study, Kampala Bone Study, Partners Prep Program Protocol study, Empowerment study, Evaluation of Kaposi's Sarcoma study, Locater study, Xpert Ultra study, and pharmacokinetics-PK studies 18, 20, 21 & 22 amongst others. These studies are expected to increase the number of samples received at the lab by 50% over the next three years.

The IDI-Core Lab has seen an increase in the testing volume over the past one year. The four arms of the lab - Main Lab, Stat Lab, Central Lab @ IDI and Research Lab - have completed over 90,000 tests since July 2018.

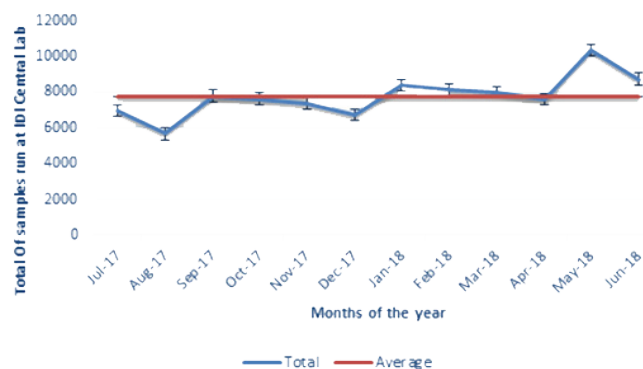
A pie chart showing number of samples run by the different laboratories between July 2017 to June, 2018.



Results:

- Majority (90%) of the samples were run at the main laboratory.
- Stat laboratory conducted 5% sample tests.
- Side and Central laboratories conducted 3 and 2 percent sample tests respectively.

Samples run in IDI Core Lab Jul 2017-Jun 2018



Results:

- On average, over 6,000 samples were run at the IDI core laboratory.
- Between July to September, 2017, there was a decline in the number of samples run.
- The graph shows a cyclic trend in the samples run.

Audrey Nimwesiga (Lab Technologist), operating the Elecsys Cobas e411 analyser machine at IDI Core Laboratory.



WHAT'S NEXT

The Translational Laboratory at the Institute aspires to build the capacity of laboratory based health scientists. The laboratory will be acquiring an LCQ (Fisher Scientific) Liquid Chromatography Mass Spectrometer (LC-MS) equipment this year courtesy of The University of Zurich.

The LC-MS is a platform used to determine drug concentrations in patient samples. It is advantageous over the other platforms used for the same purpose because of its increased sensitivity (detecting concentrations as low as 5ng/ml) and specificity. The high sensitivity also makes it possible to determine drug levels from several matrices such as hair and nails, and allows for convenient sample collection, such as using blood spots. The utility of low sample volumes (50µl) makes this platform especially applicable for pediatrics.

GLOBAL HEALTH SECURITY PROGRAMME

The IDI Global Health Security (GHS) Programme supports the Ministry of Health (MoH), government agencies and partners to accelerate progress towards a world safe and secure from infectious disease threats by building the capacity of health workers to detect, prevent, and rapidly respond to biological threats.

STRENGTHENING LABORATORY SYSTEMS

The programme scaled up microbiology capabilities in eight laboratories by providing equipment and supplies and building the capacity of over 35 laboratory staff to detect disease outbreaks using Real-Time PCR techniques.

Furthermore, the programme improved internal structures by creating microbiology curriculum for in-service training, updating laboratory operating protocols following a training by Johns Hopkins University, on PCR based assay. IDI supported Jinja Regional Referral Hospital and The National Microbiology Reference Laboratories to attain WHO/AFRO/SLIPTA the star 4 compliance rating (highest).

BIO SAFETY & BIOSECURITY (BSBS)

In collaboration with the Uganda National Council of Science and Technology (UNCST), the GHS programme reviewed the National Biosafety and Biosecurity draft bill and together with the Medical Laboratory Technology (MLT) board, Allied Health Professionals' Council (AHPC) and the Uganda Veterinary Board standardized guidelines for registration, licensing and monitoring of both human and veterinary laboratories.

In partnership with UNHLS/Central Public Health Laboratory (CPHL), the MoH Bio-Risk Management Coordination team and other partners, a Bio-Risk Management Audit training curriculum was designed and used to train 25 auditors, the national BRM checklist was revised, and the Biosafety Biosecurity Association of Uganda was supported to finalize its 5-year strategic plan.

3,500

**BLOOD CULTURES
PERFORMED AT SIX
SITES**

Training on Antimicrobial resistance and stewardship in Jinja Regional Referral hospital.
Photo credit: Kenneth Mulindwa/IDI

PREVENTION OF ANTIMICROBIAL RESISTANCE (AMR)

The GHS programme support the responsible use of antibiotics in the 19 supported sites, Medicines Therapeutic Committees (MTCs) were revived in six RRHs to plan, procure and evaluate antimicrobial use at facilities. Action plans, work plans and curriculum were developed as well as national surveillance protocols for monitoring AMR.

Over 200 health workers at nine sub-national facilities were trained on IPC assessments focusing on routine hospital practices and preparedness for epidemic response. A point prevalence survey at six AMU/C surveillance sites was conducted, resulting in 71% adherence by health workers along with an 8% reduction in antibiotic expenditure.

Antimicrobial stewardship practices have also been fostered through ATIC for telephonic consultations, interactive SMS quizzes and the e-learning website.



IMPROVED DISEASE SURVEILLANCE

In collaboration with the Infectious Diseases Research Collaboration (IDRC), over 3,500 blood cultures were performed at six sites with over 200 health workers trained in the aseptic technique of blood collection so as to identify leading causes of Acute Febrile Illness (AFI) besides malaria among children in Uganda.

In partnership with HISP Uganda to maintain the eIDSR, both animal and human health workers were trained in disease surveillance resulting to timely alerts of public health threats. There's a 20% improvement in indicator based surveillance reporting in West Nile region.

EMERGENCY PREPAREDNESS & RESPONSE

Following the Ebola Virus Disease (EVD) outbreak in Eastern DRC near the Ugandan border, the programme through the EVD National Task Force supported MoH in establishing and strengthening system preparedness in 11 out of 22 high risk districts by providing IPC and IEC materials on hand hygiene as well as identifying EVD suspects. Also, in collaboration with CDC, a National strategy for training and mentorship on EVD Treatment Units (ETU) was designed and 49 health



Training on donning and doffing of personal protective equipment
Photo credit: Kenneth Mulindwa/IDI

workers trained in EVD case management. And in partnership with MoH-UNHLS, WHO, and UVRI, 40 laboratorians from EVD high risk priority districts were trained in Biosafety.

JOINT MOBILE EMERGING DISEASE INTERVENTION CLINICAL CAPABILITY (JMEDICC)

Joint Mobile Emerging Disease Intervention Clinical Capability (JMEDICC) project is implemented in partnership with Makerere University Walter Reed Project (MUWRP) with funding from the US Department of Defence. The project is operating a research site at Fort Portal RRH and brings together clinical and diagnostic expertise to provide quality care for patients with VHFs.

This year, an isolation unit for VHF patients was renovated and furnished to include a BSL2 Plus lab attachment unit and BSL4 containment kits to carry-out diagnostics on highly infectious samples. Advanced IPC practices training module using full personal protective equipment (PPE) were also developed and used to train 122 health workers from the region.

Lastly, JMEDICC is finalizing a protocol to deploy an investigational drug under the World Health Organization Monitored Emergency Use of Unregistered and Investigational products (MEURI) framework should the EVD outbreak in DRC spill over into Uganda.

WHAT'S NEXT

Moving forward, the program will scale up AMR prevention efforts through the Fleming Fund Grant and consolidate interventions made thus far.



SUSTAINABILITY OF THE INSTITUTE

KEY STRATEGIC DEVELOPMENTS

There were a number of key strategic developments in IDI over the 2017/2018 period. The Emerging/re-emerging infectious diseases (EID)/Global Health Security (GHS) program was fully established as an independent program (albeit with close links to all other programmes, as is the IDI practise).

By the end of the financial year 2017/2018, the programme had seven (7) ongoing projects and three (3) awards at pre-contract stage, paving the way for this to be a key area of long term IDI competence. IDI, with the support of the US government's National Institute of Allergy and Infectious Diseases (NIAID) Office of Cyberinfrastructure and Computational Biology (OCICB) is in final stages of establishing an African Centre of Excellence in Bioinformatics in Uganda (ACE-Uganda) at its McKinnell Knowledge Centre. OCICB and its private sector partners in the US are making a generous in-kind donation of equipment, and ongoing hardware, software and infrastructure support while IDI and the College of Computing and Information Sciences, Makerere University (CoCIS) are providing specialised space, and technical staff time to start up the centre. It is expected to open officially in March 2019.

The ACE will be a specialized unit providing advanced computing infrastructure and software to enable storage, retrieval and analysis of data from high-throughput sequencing, microarrays, proteomics and imaging studies and experiments. In addition, the centre will host state of the art collaborative learning technologies including a tele-learning centre, and a Virtual Reality (VR) training room. This will position IDI to be a major contributor to Makerere University's capacity to conduct data intensive science, which is globally recognized as a key competence for research in the future.

STRATEGIC INFORMATION (SI) UNIT HIGHLIGHTS

The Strategic Information team continues to generate information to support new business acquisition and to guide reporting and decision-making. The team supported the process of incorporating measurement, monitoring and evaluation standards into the 2018-2023 strategic plan. They adopted a scorecard reporting approach to analyse trends across IDI programmes, to observe long-term trends and to set the 2018-2023 planning period outcome targets, in line with national health priorities. The team additionally developed a Sub Grants Key Performance Indicator (KPI) monitor to improve on sub granting performance monitoring with a special focus on number and value of the sub-grant portfolio, disbursement and accountability rates, burn rates, and quality of reporting by sub grantees. M&E frameworks were also developed for the new emerging infectious diseases (EID)/

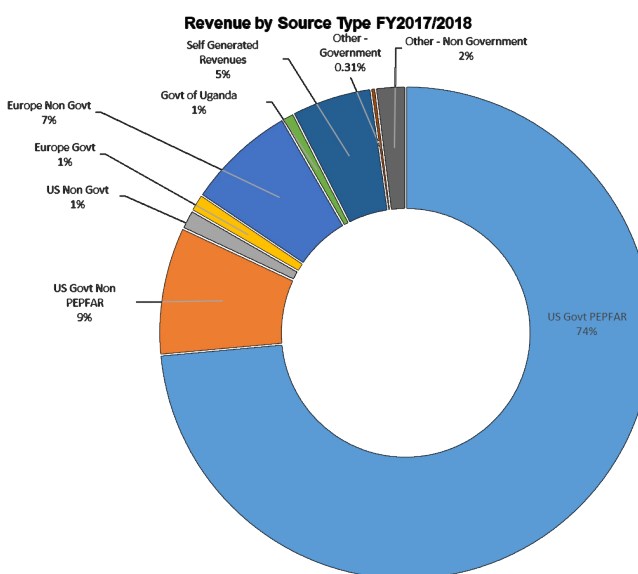
Global Health Security (GHS) programme.

Over the next year, the team will focus (among other priorities) on developing a framework to support and monitor revenue diversification, which is currently a key area of management concern.

RESOURCE GENERATION AND MANAGEMENT HIGHLIGHTS

The newly introduced Funding Opportunities Monitor generated considerable interest from all cadre of staff in responding to funding opportunities. Over 68 funding proposals with a grant/contract value of \$ 61,765,976 were written over the year. These achieved a success rate (defined as proportion of funding applications written and awarded to IDI over the last two years) of 30.8% by number. Notable new funding partners include Fleming Fund (Regional AMR grants), Medical Research Council through the University of Liverpool, (Drivers of AMR in Uganda and Malawi), and Jansen Pharmaceuticals (Nucleosides & Dolutegravir in Africa (NADIA)). By the end of the year, sub-grants to other partners had increased from 67 to 75 sub-grants worth over \$ 16.7m. IDI is in final stages of planning for an additional 17 sub-grantees (including at least 3 international sub-grantees).

The department strengthened its capacity to manage sub-grants by hiring more experienced sub granting staff, including the Deputy Head of department, who doubles as the head of the sub-granting team. The sub-granting team further reviewed and actively strengthened its risk management procedures by facilitating continuous internal audit reviews, capacity building of sub grantees through training and mentorships, support supervision visits, as well as monthly reviews.



FINANCIALS

ASSETS	2018 (US\$)	2017 (US\$)
Non-current assets		
Property and equipment	3,532,977	3,528,487
Investment property	<u>537,904</u>	<u>574,181</u>
	<u>4,070,881</u>	<u>4,102,668</u>
Current assets		
Inventories	31,003	25,179
Receivables and prepayments	9,186,025	6,044,410
Investments in fixed deposits	11,610	596,654
Cash and bank	9,118,780	7,662,487
	18,347,418	14,328,730
TOTAL ASSETS	<u>22,418,299</u>	<u>18,431,398</u>
RESERVES AND LIABILITIES		
Reserves		
Accumulated surplus	13,171,007	11,832,426
Non-current liabilities		
Retirement benefit obligation	866,005	609,910
Deferred income	4,161,624	2,083,097
	<u>5,027,629</u>	<u>2,693,007</u>
Current liabilities		
Trade and other payables	4,219,663	3,905,965
TOTAL RESERVES AND LIABILITIES	<u>22,418,299</u>	<u>18,431,398</u>

SUCCESS STORY: Local health center in Uganda uses global strategies to contribute to UNAIDS 90-90-90



Assister Partner Notification at Kisenyi Health Centre IV
Photo credit: Solome Ttunzi/IDI

Globally, about 60 percent of people living with HIV (PLHIV) know their status. HIV case-finding and linkage to care are critical for the control of HIV transmission and essential to curbing the epidemic.

As such, in an effort to achieve the UNAIDS 90-90-90 agenda, the Infectious Diseases Institute (IDI) with funding from the Centers for Disease Control and Prevention (CDC) is using World Health Organization recommended strategy - "Assisted Partner Notification (APN)" to ramp up the number of positives identified. In December 2017, IDI in collaboration with the Arua District Health Team introduced APN at River Oli Health Center (HC) IV in Arua district.

"In the beginning it was not effective because staffs did not understand how to carry out APN" says Sister. Jane Drizaru Aidah, the ART clinic in-charge at River Oli HC IV. She also works with key populations at the HC.

Despite testing clients for HIV at various service points in the community, the yield of HIV positives at River Oli HC IV remained low. On average, the facility found one HIV positive client compared to the expected 16 clients per week - which implied that many clients with unknown HIV statuses lived amongst us.

"IDI organized a five day orientation on APN, and staffs were identified and trained" says Sr. Jane.

APN offers a broad range of services that are offered to persons with HIV infection, syphilis, gonorrhea, or chlamydia infection, and to their partners and sexual contacts. APN uses simple and effective ways of reaching partners many of whom are undiagnosed and unaware of their HIV exposure. Examples include [use of locator forms, community-facility referrals, community linkage facilitators escort newly identified HIV positive clients, and weekly audits of HTS registers to identify unlinked HIV positives for active follow up].

The strategy requires that once PLHIV are identified, they are interviewed for personal information including revealing their partners who once contacted are then invited to the HC, counselled, tested for HIV and if found positive, are given the starter pack and enrolled into care.

"We talk to the index client and ask them personal questions, we also ask whether it is possible for us to call the partner here or go to their home or go to a place of their choosing? We always take the starter pack in case the partner tests positive" says Sr. Jane

Building trust between the health workers (HWs) and index client is important for the success of APN. Once friendships are cultivated, clients openly provide information to track their partners. Index clients are also given special attention

at the HC, where they do not wait in long lines, which makes them happy. They also receive a small mobilization fund to incentivize tracing of partners. At times, they are given airtime to call up their partners, because partners respond positively to their clients and are more willing to come to the centre.

"On average, clients have about 10 partners in one night" says Sr. Jane.

If the partner tests positive, HWs make an appointment for a separate meeting with the partner where they provide counselling services discussing different ways of transmission, and also organize dialogue meetings where partners are counselled on how to live together positively, condom use, and the importance of peer support to facilitate timely adherence to medication. After enrollment in care, he or she is then requested to share information about their partners.

At River Oli HC IV, the introduction of APN, support of peer mobilizers and use of flexi hours during targeted outreaches such as moonlights, has resulted in a surge of the number of HIV positive individuals identified. As at the June 2018 quarter, of 434 partners that were eligible, 390 were interviewed for HIV. Of the 390 contacted, 289 individuals were tested, 80 of which were identified as new positives and who were all linked to treatment, thereby marking a tremendous achievement.

At its peak, 95% of the individuals who were identified as HIV positive at River Oli HCIV were identified through APN.

"This strategy is better than going into the community because it has a cascading effect, these clients whom we have been following, are responsive on care because we are vigilant in following up missed appointments - we use peer mobilizers to go and follow up immediately" says Sr. Jane.

APN has been scaled up in phases across 112 IDI supported sites in the western and west Nile regions of Uganda.

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Isaac Lwanga

Deputy Head, Prevention, Care & Treatment Programme
Director of Clinical Services

Barbara Castelnouvo

Head, Research Programme & Head Longitudinal
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Stephen Okoboi

Deputy Head, Research Programme

Alex Muganzi

Head, Outreach Services Programme

Joanita Kigozi

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