

Academy for Health Innovation Uganda

ANNUAL REPORT 2020 - 21



Academy products/Services











ANNUAL REPORT 2020-21



Message from Board Co-Chair

Prof. Elly Katabira

t is with great pleasure that I, on behalf of the secretariat and staff of the Academy for Health Innovation Uganda, present to you the Annual Report for 2020-2021. The Academy continues to execute its mandate and thrive through its 6th year from inception and maintains the zeal and morale showcased at the start. In this era of the "New Normal", The Academy has proven to be highly resilient as it sailed through the COVID-19 storm without breaking momentum; accelerated if anything. This is showcased through all the tremendous work that has been going in; the new projects, evolution of already existing projects to diversify and become applicable outside the original scope of HIV/ AIDS.



In this era of the "New Normal", The Academy has proven to be highly resilient as it sailed through the COVID-19 storm without breaking momentum We have witnessed The Academy's growth from Janssen stewardship to independence and table a solid sustainability plan that not only involves focussed resource mobilization but scale-up of projects that are community centred. The Academy continues to rise up above all the odds and thrive and confirms our confidence in it, as the Advisory Board.

Through community engagement projects like the History of HIV in Uganda project that evolved from an exhibition in Kampala to a nationwide mobile exhibition and onto a documentary on all top local T.V stations; this is evidence that The Academy is moving with the times to accommodate the needs of the communities they serve.

As The Academy moves into this new era, it is with great pride that The Advisory Board pledges its continued support; through advice and consultation on various projects. We acknowledge this growth and encourage all partners and stakeholders; new and old, to continue the support.

I hope that you will find this progress report both insightful and entertaining.



Director's Message

Rosalind Parkes-Ratanshi

elcome to our Annual report 2020-2021!

The past two years really tested all of those around the globe, especially those working in health as COVID-19 pandemic has turned our world upside down. I am so grateful to the amazing Academy team, who with the support of the large One IDI family, we have continued to innovate and grow to deliver on our objectives.

In April 2021 we were pleased to launch the "Overcoming geography with Technology" project. The successful launch of this research project led the commencement of the use of Medical Drones to deliver ART in Kalangala District. The medical drones program has been designed and implemented from the With continued support and guidance from our Advisory Board and IDI senior management we have developed our second Strategic Plan, commencing March 2021 and taking us through to 2026. ground up to ensure that we learn lessons that will help us to build a sustainable drone project moving forward.

We have continued to stay true to our mandate as a Health Innovations hub through vigorously sourcing for funding and attracting new partners; as well as taking some of our more mature projects to scale. Our flagship mHealth project Call for Life continues to evolve and is currently supporting Ministry of Health with COVID-19 Home-based care and TB management in Karamoja.

We also worked with the US Centres for Disease Control, Ministry of Health and Africa Resource centre to develop a scale up plan for our ART Access project. ARTAccess supports the continuity of quality care through accelerating remotely accessible health services for PLHIV and TB. This project works to decongest the health facilities and in turn ease the pressure in health care service delivery, and we have set the foundation to scale this nationally in 2022. Obviously, we cannot achieve our objectives without the amazing support from our funding and implementing partners. We are grateful to Janssen, the Pharmaceutical Companies of Johnson and Johnson which has continued to be an anchor funder of the Academy, and have been joined by others such as USAID, University of Cambridge, Wellcome Trust and International Development Research, Canada.

With continued support and guidance from our Advisory Board and IDI senior management we have developed our second Strategic Plan, commencing March 2021 and taking us through to 2026. This recognizes the Academy strategies of Innovate, Advance and Scale, and we hope that you find these strategies becoming evident through the project updates in this report. We look forward to serving the people of Uganda for the next five years and beyond through innovation and impact in health.

Innovate projects: 🐞

The Academy aims to be the main innovations hub for health-related innovations in Uganda by adapting and accelerating new ideas and initiatives in the Ugandan Health system. This year under research and development activities we continued to build proof of concept for our innovations and adapting them to different contexts.

Call for Life Technology



Call for Life, Uganda

Academy for Health Innovation Uganda

Call for Life projects timeline



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1.1 Call for Life Projects

The Academy continues to conduct research to validate the use of Call for Life (CFL) in different contexts. CFL software is a computer software that delivers adherence reminders and health tips using interactive voice response (IVR) for patients. The service allows patients to report symptoms in real-time to their care providers. This year under review are three research projects which were initiated in addition to two that are ongoing.

Call for life-HIV

The Call for Life HIV (CFL - HIV) tool is provide adherence reporting service, clinic appointment reminders and health tips. With over 3000 PLHIV followed weekly, we now have a cohort of participants on long term follow up using CFL. This offers an opportunity for long term follow up on behaviors, treatment outcomes and sustainability of mHealth tools of participants supported. A currently running sub-study has 4 main objectives;

• To explore barriers, feasibility and acceptability of the Call for Life Lite intervention project as well as perceptions and attitudes towards Call for Life Lite tool.

- To evaluate PLHIV reporting of COVID -19 related symptoms and sensitivity of symptom reporting.
- To determine prevalence of COVID antibodies in this population and investigate any correlation with symptoms reported.
- To evaluate a co-pay model for sustainability of CFL services

Current Project Achievements

A poster presentation of the abstract titled "Participants' perception on a nurse-led IVR system for ART adherence support in Kampala, Uganda" was presented to the virtual IAS 2021 Conference.

The randomized controlled trial of CFL- HIV was published in the Journal of Internet Medical Research https:// pubmed.ncbi.nlm.nih.gov/33570497/

Call for Life-TB

The Call for Life TB (CFL-TB) study is an open-label randomized controlled trial to determine the impact of CFL, on TB treatment success in a cohort of patients with drug sensitive TB receiving care at three Tuberculosis clinics in, Uganda. In this trial, patients will be randomized (1:1 ratio)

10_____

to either the standard of care (SOC) arm or intervention arm (adherence and appointment reminders, and health tips delivered using IVR to patient mobile phones). At the end of treatment, we will compare treatment success and retention in care in patients who received the call for life intervention versus those who did not receive the intervention.

Project Achievements

By the end of 2020-2021, 250 of 274 expected participants were recruited. These are being actively followed up until March 2022.

Call for Life-Youth

Call for Life Youth is a series of studies under the Academy Scholar Program run by Dr Agnes N. Bwanika. It consists of a mixed methods study. The first study is a qualitative study to assess barriers, enablers of adherence and acceptability of mHealth among youths receiving care at Kiryandongo Hospital.

The second study is a randomized control trial of Youth living with HIV/AIDS (YLWH) initiating anti-retroviral therapy (ART) to determine the effect of the Call for Life-Uganda (CFLU) mHealth tool on ART adherence.

Project Achievements

A total of 206 YLWH have been randomized to either Standard of Care (SoC) or CFLU plus SoC. The follow up will be completed in 2022 with results to follow.

Call for Life- Sexually Transmitted Infections

When someone is diagnosed with a sexually transmitted infection, it is important for their partner to receive treatment. In Uganda, low rates (25% to 34%) of partner attendance of those with sexually transmitted STIs have been observed. Support to those with HIV with counselling (assisted partner notification) to tell their partner has been successful. Others have suggested that mobile phone technology can support APN, which is attractive given the high levels of access to mobile phones in SSA.

The Academy for Health Innovations has adapted Call for Life to be used for APN in STIs. Call for Life -STIs is being evaluated as a sub-study of the COPHAS trial which is providing point of care testing for STIs in community pharmacies. The sub-study will determine the effect of technology-supported partner notification and treatment initiation using Call for LifeTM technology among persons diagnosed with an STI or HIV at community pharmacies in Uganda.

Project Achievements

The CFL tool was adapted for STIs to become CFL-STI in this year, and study enrolment will commence in Q4 2021.

Call for Life - Assisted Partner Notification

In Uganda, national health surveys show that 1.8% of adults aged 15-49 years have syphilis, and in 1% of couples, both partners are infected. Antenatal clinic (ANC) estimates are higher at 2.1–3.0% and neonatal mortality stands at 2.5%. With a total fertility rate of 5.4 children per women, syphilis is an important driver of adverse maternofoetal outcomes.

Newer syphilis point of care tests (POCT) and combined HIV-syphilis tests are helping to increase syphilis testing in pregnancy across the region. Unless infected male partners of pregnant mothers are treated, there is a chance of re-infection. Despite initiatives to increase notification of male partners of pregnant women in Uganda, partner treatment rates remain low (around 17%). Causes of low notification include lack of knowledge, fear of partner violence, and lack of designated services for men at antenatal clinics.

New funding from Pfizer will support a project which builds on our experience with Assisted Partner Notification

program (APN) for HIV and STIs. A trained project nurse will ask pregnant mothers diagnosed with syphilis in ANC about their sexual partners, and with the consent of the syphilis-positive client, follow up and offer these partners voluntary syphilis testing and treatment. This project will use a combination of mHealth tool to support, remind and follow-up on pregnant women to notify their partners. The sites for this objective will be the Kampala City Council Authority clinics of Kisenyi, Kawaala and Kiswa health centres.

In this project, IDI will support increased Syphilis testing in antenatal clinics, increased access to syphilis treatment for women with syphilis, and follow up women and their new-borns for syphilis. Through APN, we aim to increase syphilis testing and treatment in male partners of pregnant women with syphilis.



Dr Agnes Bwanika Naggirinya conducting the Syphilis APN training for Health workers at Kawaala HC 4



13

1.2 Medical Drones Pilot Project

Medical drones launch in Kalangala launched and initiated

With the support of Johnson & Johnson, we launched of a new, collaborative program to pilot the use of medical drones to deliver lifesaving HIV medications to people living in the Kalangala District. Regularly scheduled flights carrying antiretroviral therapies (ARTs) for the treatment of HIV commenced in the region as part of the study.

Uganda has made significant strides in reducing the burden of HIV over the past decade, but the Kalangala District has continued to report high rates of new cases and access to treatment remains inaccessible for many. The island geography of the region makes the delivery of health care difficult, as travel is possible only by boat and



Dr Jude Matovu , Bufumira Health Centre In-charge, loading the drone during the Medical Drones project launch in Kalangala

is inefficient, unreliable and potentially dangerous for the healthcare workers who journey from island to island to provide care. The medical drones have the potential to overcome these challenges by serving remote landing sites in Bufumira sub-county, reaching and delivering ARTs to people living with HIV/AIDS.

The medical drones program has been implemented in close coordination with the Kalangala District Local Government and is being supported by a public-private collaboration including the Ministry of Health of Uganda, Makerere University, Johnson & Johnson, The Ugandan Academy for Health Innovation and Impact, Uganda Flying Labs, Yamasec, Werobotics and John Hopkins University.

1.3 Artificial Intelligence:

Introducing our first AI project at The Academy: COAST

This is a project aimed at developing end to end AI and data systems for targeted surveillance and management of COVID-19 and future pandemics affecting Uganda. The fluidity of the COVID-19 outbreak requires innovative data systems that fuse data from multiple sources that need to be frequently updated. In sub-Saharan Africa, data imbalances and underrepresentation can easily arise due to unequal access to government and private services where

ANNUAL REPORT 2020-21

data is collected due to socio-demographic conditions. If these are not addressed, they can result in Al and data science solutions that do not benefit communities that are most vulnerable for COVID-19 and future pandemics.

Under this project the Academy is supporting Develop and deploy Al-driven detection and diagnosis tools for improved patient care and management. This includes medical support to content of a COVID-19 Chatbot which will provide information to the general public with COVID-19 questions. We will also develop a data-driven decision support system to screen for COVID-19 and future outbreaks based on data collected through the existing interactive voice response tool that records symptoms including those known to be COVID-19 related in 3,500 people living with HIV and the wider population.

Website - http://coastug.org/





Gallery: The Year in Pictures 🔼

Medical Drones Pilot project launch in Kalangala



15

ANNUAL REPORT 2020-21

-16

Dr Rosalind hands over a tablet and Mifi to Mr Muyinda to support ART Acess at Eco pharm Pharmacy





The PFIZER Syphilis Project - Stake Holders' Meeting







3 Advance projects 🌧

In the new strategic plan commencing in March 2021, an important stream of actions will be to provide services to stakeholders and implementers. The services including capacity building, software development and evaluation of health technologies.

3.1 Advancing IVR as a survey tool used in research

Call for life Nutrition; an IVR based survey tool to collect information on Nutrition amongst PLHIV during COVID-19 pandemic.

HIV/AIDS affects 1 in 7 households and is an independent risk factor for food insecurity in Uganda. A study conducted by IDI during the first lockdown suggested increasing food insecurity in people living with HIV (PLHIV) because of COVID-19 disruptions to livelihoods and food systems. This is concerning because food insecure HIV patients are less likely to adhere to antiretroviral therapy (ART) because of side effects; hence at increased risk of poor treatment outcomes, developing resistance to antiretroviral treatment (ART), and mother-to-child and/or sexual transmission of HIV ART.

The CFL was successfully modified to deliver a 10-minute audio quantitative data survey tool to assess household food security and adherence to ART among PLHIV in rural and urban settings in the context of COVID-19 pandemic in Uganda using the CFL tool.



*The study team with the Nutrition focal person and In-Charge Yumbe HCIV.



3.2 WISECAP

The WISECAP study is a clinical trial that is making use of adherence technology (MEMS) to remotely monitor the adherence rates of patients on oral MDR-TB (Drug Resistant Tuberculosis) treatment and compare it with patients that have to report daily to the health facility to be observed swallowing their medication as standard of care, also known as directly observed therapy (DOTS). This study is being conducted in both a rural and urban hospital site.

Patients on the MEMS technology are provided medication bottle and box that contain embedded chips that record each time the medicine container is opened. Adherence information is then downloaded from the MEMS devices and displayed in several simplified, yet detailed views for the understanding of the adherence patterns of the patient. The understanding of these adherence patterns is what guides tailored adherence counselling sessions that benefit the specific patient. Collectively this adherence counselling can be used to also detail which MDR-TB patients will be best suited for differentiated service delivery. **Potential impact:** The finding of similar adherence rates among MDR-TB patients using MEMS technology and those on DOTS, could address current challenges in the implementation of DOTS, mainly the costs incurred by patients to keep returning daily to clinic and failure to do so places them at risk for treatment failure and poor outcomes from non-adherence. Differentiated service care could possibly serve to improve treatment adherence among MDR-TB patients on oral therapy, improving treatment completion, cure rates and reducing on community transmission.



A versatile ecosystem to monitor medication adherence

18

4 Scale and Impact projects 🛛 🥋

The Academy focuses on scaling up its innovations. A team is constituted to ensure that developed and validated innovations are adapted and scaled to meet real gaps in the health sector. This year the coverage of our national projects has grown to include all regions in the country.

Scale of Call for Life projects

Call for Life remains a relevant patient facing tool that has demonstrated impact both in chronic care and emergency.

4.1 Call for Life - COVID

As the COVID pandemic started to take hold in Uganda, we worked with Janssen to adapt the Call for Life tool to support COVID management. This was first as a screening tool and a remote symptom reporting service for high risk travelers and contacts of COVID-19 patients undergoing quarantine (CFL COVID-Quarantine).

Following this work, the Ministry of Health requested development of a screening tool for psychosocial challenges in patients discharged from COVID treatment units (CFL COVID - Case Management). Since deployment

in August 2020 to July 2021, over 4000 suspects/patients have received over 40,000 calls.

Project Achievements

- CFL COVID surveillance has been used for follow up over 1200 high risk travelers and contacts of COVID-19 patients in 19 districts. 9 languages have been developed
- CFL COVID case management has been used for post discharge follow over 3400 patients from 18 COVID units nationwide. 9 languages have been developed
- Of these patients followed up, over 1300 have been referred to Strong Minds Uganda for psychosocial support.
- The team has received the go ahead from the community health department at Ministry of Health to operationalize these tools for follow up of patients undergoing Home Based Care for COVID-19.

ANNUAL REPORT 2020-21



Call for Life COVID training of Mbale Regional Referral CTU staff

4.2 Call for life TB- PACT Karamoja

Call for Life TB PACT Karamoja is a web-based platform that uses interactive voice response (IVR), to deliver adherence reminders and health tips to patients receiving tuberculosis treatment in the Karamoja region. The service also provides clinic appointment reminders and allows patients to report symptoms in real-time to their health care providers. CFL - TB PACT karamoja has been operating in the region since 2020 September as part of the bigger Program for Accelerated Control of TB in Karamoja (PACT- Karamoja), a program that aims to increase TB case detection and treatment success rates through health system strengthening in all districts of North Eastern sub-region of Uganda.

CFL - TB has been supporting patients in five facilities and so far, over 400 patients have been supported using the CFL system.

Project Achievements

- Successfully deployed the CFL services in the Karamoja region.
- Project highlights or success story
- CFL TB PACT has been used to follow up over 400 patients since inception of the project.
- Of these patients followed up, over 90% have successfully cured/completed their treatment and over 1000 patient do the health personnel have attended to symptoms and concerns.
- CFL Digital Application has motivated TB Patients in Karamoja sub-region to take medicine regularly.

The CFL - TB PACT success story published in Global Accelerator to End TB Newsletter, May 18, 2021. Link: Global Accelerator to End TB Newsletter, May 18, 2021 (wix.com)

4.3 Call for Life HIV +TB- Local Service Delivery for AIDS (LSDA) in faith based facilities:

Scale of CFL HIV+TB to Northern, Eastern and Western regions of Uganda.

A 5-year project to implement HIV/TB interventions through Private Not-For Profit (PNFP) entities currently supported by the USAID-RHITES in the five sub-regions of East Central, Eastern, Acholi, Lango and South western Uganda. The Academy's role entails capacity building of LSDA regional staff and targeted PNFP facilities/sites in utilization of Call for Life HIV & TB for automated treatment support.

Project Achievements

30 health facilities were visited and sensitized during 2020-2021 in Western, Northern and Eastern Uganda. During the trainings, an average of 7-10 health workers were introduced to mobile health and call for life. A total of 63 health workers in this reporting period were trained on the tool and 30 YAPS were sensitized on Call for Life.

4.4 ARTACCESS

ARTACCESS at integrating and at Scale.

The prevention care and treatment department (PCT) at IDI was supported to digitalise Community Differentiated Delivery Service using a pharmacy refill model and follow up services through the D-PCT Project. D-PCT was an implementation and development project, at IDI PCT Clinic to support continuity of quality care through accelerating remotely accessible health services for PLHIV and TB. The platform was leveraged on several existing digital tools including; Call for Life Uganda, ATIC and ARTACCESS.

The project aimed at;

- Improving access and availability of ART services through implementation of ART stock management module and use of private pharmacies
- 2. Increasing number of PLHIV enrolled on the D-PCT program, improved retention in care and increased number of PLHIV with suppressed viral load.

(21)

Project Achievements

- A fully functional comprehensive stock management module to manage government medication in private (community) pharmacies was developed, tested and piloted.
- The D-PCT Project received further funding as one of best performer out of the 12 teams supported by the COVIDAction – UK Foreign, Commonwealth and Development Office (FCDO) funding.

The project served as a mini pilot to inform the bigger MoH nationwide extended pilot to scale up ARTAccess the Community Retail Pharmacy Drug Distribution Program (CRPDDP).

4.5 History of HIV in Uganda

The HHU story on air and online!

In conjunction with The AIDS Support organization (TASO) and Uganda AIDS Commission we came up with an exhibition titled "Infected or Affected. Ugandan Stories of HIV and AIDS". The exhibition has evolved from being

a static exhibition to mobile exhibition and currently a digital exhibition.

With the support from Wellcome Trust the physical exhibitions were converted into digital exhibitions to over the restrictions of social distancing and lockdown. It was converted into six short videos and one long documentary that was serialized and run on several local television stations and social media sites including YouTube, Facebook and Twitter. These videos and resources are also available on the HHU Website: https://theacademy. co.ug/history-of-hiv-in-uganda-exhibition/

Since we launched the HHU story online we have had over a million people reached with the story on social media platforms like Twitter, Facebook as well through broadcasts on YouTube and different local TV stations. Over 750 people reached us for counselling and testing/ consultations.

HISTORY OF HIV/ AIDS III LIGAIIDA



🛛 Academy in the media: 📣





5 The New Academy Strategic Plan 2021-2026 🖗

The Academy has fully established itself as a credible hub for innovations, with a high potential of taking its services to scale. Through our established network of partners and activities, we have received recognition as a strong partner in innovation both locally and internationally.

The Academy further intends to consolidate its position in the Ugandan Health sector through our new Strategic Plan 2021-2026 that will enable us to innovate, advance and scale while maximising impact and validating proof of concepts.

Strategic pillars



New Strategic Focus New Strategic Focus





New year Academy projects for 2021 - 2022

Innovate	Advance	Scale
Research & development lead-R Ratanshi Impact lead-R @		obaikol
Research lead - A Bwanika	Technology - F Musinguzi	Adapt/integration lead - M Balaba
CFL TB - H Mackline	CFL nutrition - J Namukooli	CFL COVID (HBC) - I Nampewo
CFL Lite/co-pay	TB Wisecap - C Wekesa	HHU-F Lubega
CFL Youth - A Bwanika	Pfizer syphilis - A Bwanika	ART Access CDC - M Balaba
Drones - J Akullo	MITIC - HCW IVR training	Health Innovation Conference - M Balaba
West Nile drones - G Oguma	COAST - E Nakibuuka	PACT Karamoja - H Mackline
Ethics - J Namakooli		LSDA - H Mackline
Dial COVID-R Ratanshi		
POCT STI - H Mackline		



Publications

- 1. Mirembe D, Mackline H....<u>Parkes-Ratanshi R</u>. Impact of a mobile phone-based interactive voice response software on tuberculosis treatment outcomes in Uganda (CFL-TB): a protocol for a randomized controlled trial. June 2021. Trials 22(1) DOI: 10.1186/s13063-021-05352-z
- Richard Muhindo, Castelnuovo B, Mujugira A, <u>Parkes-Ratanshi R</u>,...Nakku Joloba E . Text message reminders and peer education increase HIV and Syphilis testing among female sex workers: a pilot quasi-experimental study in Uganda. BMC Health Science Research. May 2021.
- 3. CP Namisi, J Munene, RK Wanyenze, A Katahoire, <u>R Parkes-Ratanshi</u> et al. *Stigma Mastery in People living with HIV: Gender Similarities and Theory.* Journal of Public Health. March 2021
- 4. SC Ifeagwu, JC Yang, RM Parkes-Ratanshi, C Brayne. *Peer Reviewed Original Research Articles Health financing for universal health coverage in Sub-Saharan Africa: a systematic review.* December 2021 **Global Health Research and Policy**
- 5. F Mubiru, B Castelnuovo, S. Reynolds, <u>RM Parkes-Ratanshi</u>. Comparison of different cardiovascular risk tools used in HIV patient cohorts in sub-Saharan Africa; do we need to include laboratory tests? January 2021. **PLoS ONE**

E Mabonga, YC Manabe, A Elbireer....<u>RM Parkes-Ratanshi</u>. *Prevalence and predictors of asymptomatic Chlamydia trachomatis and Neisseria gonorrhoeae in a Ugandan population*



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