



## Word from the Director

Dr. Bruce J Kirenga



Dear Readers,

During the 3rd Quarter of this year, MLI continued with its efforts to contribute to the COVID-19 response alongside its other mandates. We concluded the collection and processing of plasma from convalescent COVID-19 patients to create a COVID-19 IND that is now being evaluated in a randomized clinical trial.

We were able to continue running a busy chest clinic, registering no COVID-19 case among our clinical staff by God's

grace but also probably due to observance of the infection prevention measures. I want to thank the clinic team that has braved the provision of care to respiratory disease patients at a time when all could be considered potential COVID-19 patients. I also thank our non-medical staff who have continued to support our programs during this time; working in the same compound as the clinic.

As we come to the close of this year, I take this opportunity to wish you a Merry Christmas and Happy 2021. We are all hoping that we will have our normal lives back soon when the pandemic problem is solved.

I wish you an enjoyable read.

*Science for healthy lungs as we build for the future*

## Investigational New Drug: Coronavirus Convalescent Plasma

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GROUP PHOTO: The Minister of Health, Hon. Dr. Jane Ruth Aceng, joins Makerere University researchers and UPDF doctors at the COVID Convalescent Plasma trial launch

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18th November 2020

## Word from the Editors

We welcome our readers to our last issue for the year 2020. A landmark trial in Uganda evaluating COVID Convalescent Plasma (CCP) for treatment of COVID-19 was launched in September and key highlights from this are summarised in this issue.

Ambient air pollution is linked to cardio-respiratory diseases and in this issue, we inform you about MLI projects that are working to address this challenge in Kampala. Also, find out about the CHS Principal's visit and the MLI Director's new role as a GINA advocate.

This quarterly newsletter is available on MLI's website: [mli.mak.ac.ug](http://mli.mak.ac.ug). Subscribe for this newsletter by emailing [news@mak.ac.ug](mailto:news@mak.ac.ug) with 'Subscribe' in the subject. For any comments or questions please reach out to the editorial team.

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## Coronavirus Convalescent Plasma Trial Launch

Coronavirus Disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) virus. First reported in early December 2019 in Wuhan China, it has since spread across all continents. Over 21 million cases have been reported, and more than 700,000 deaths have been recorded. The first case of COVID-19 in Uganda was reported on 21<sup>st</sup> March, 2020 and since then, more than 5000 cases have been reported, with more than 60 deaths recorded.

There is no vaccine available for COVID-19, and treatments are only starting to emerge. There is emerging evidence to support use of COVID Convalescent Plasma (CCP) for treatment of COVID-19 especially among severe and critical patients. Plasma is the straw colored liquid portion of blood that remains after red blood cells, white blood cells, platelets and other cellular components of blood are removed.

Wednesday, September 16<sup>th</sup> 2020 was yet another day of great achievement to Makerere University in Kampala Uganda. On this day, Uganda's Minister of Health; Hon. Dr. Jane Ruth Aceng officially launched the Uganda COVID Convalescent Plasma Investigational New Drug and the CCP trial to assess the safety and efficacy of CCP in treatment of COVID 19 in Uganda. The launch was held at Makerere University's Main Hall. Prof. William Bazeyo, the session chair and also Principal Investigator of the project gave welcome remarks on behalf of Makerere University's Vice Chancellor. He thanked the government of the Republic of Uganda for funding this project and several others (now totaling to over 500 multidisciplinary projects) through Makerere University Research and Innovations Fund (MAK-RIF) <https://rif.mak.ac.ug/>. He also thanked Uganda's Minister of Health Hon. Dr. Jane Ruth Aceng Ocerro who graced the occasion as Chief Guest for the continued support from the ministry. He ended by assuring the Hon. Minister that Makerere University Medical School is working hard to become number one



**TAKING THE LEAD:** The Minister of Health, Hon. Dr. Jane Ruth Aceng displays two bags of convalescent plasma

in Africa after being ranked second for so long. He noted this was possible with more support from the government of the Republic of Uganda.

Dr. Bruce Kirenga; the Director Makerere University Lung Institute <http://mli.mak.ac.ug> and also Principal Investigator of this project mentioned that despite evidence of possible efficacy of CCP in treatment of COVID-19, very few African countries have undertaken the collection and processing of CCP. He mentioned the aim of the project was to assess the feasibility of collecting, processing and storing of CCP for treatment of COVID-19 in Uganda. He emphasized the need to collaborate and collate all the related scientific facts throughout the collection, processing and storage of Convalescent Plasma.

The team approached COVID-19 recovered individuals who had been managed and discharged at the treatment centers across the country. To be included, participants needed to provide written informed consent, have documented evidence of SARS-CoV-2 infection by PCR, have documented evidence of full recovery from COVID-19, be at least 18 years and meet all criteria for blood donation set by Uganda National Blood Transfusion Services in order to be eligible.

Dr. Bruce Kirenga said of the 186 who came to the donation center, 87% qualified to donate. The donors were received from all regions of Uganda except Karamoja that had not registered an infection by then. The median age of the donors was 33 years and 3.7% were females. A significant finding was that all the samples donated had enough

antibodies to warrant use in treatment of COVID-19 patients.

In her address, Uganda's Minister of Health; Dr. Jane Ruth Aceng Ocerro gave the greenlight to the scientists to commence (with immediate effect) the CCP trial now that the product was available. She thanked the scientists for the innovation. Dr. Aceng appealed to the general public to continue observing the COVID-19 Standard Operating Procedures as scientists continue to innovate, find treatment and cure for the deadly virus. She said the country had reached phase 4 of the pandemic and the virus was now killing on average 2-3 people a day. This she noted was/ is wide spread community transmission of COVID-19 meaning that the spread can no longer be controlled but can only be mitigated. She emphasized that COVID-19 in Uganda is real so anything proven that can be done to save life is highly welcome and appreciated.

The project was conducted by the COVID Research group (COVIDRES) group; a multi-disciplinary research group coordinated by the Makerere University Lung Institute (<http://mli.mak.ac.ug>). Other partners on the project are: Uganda People's Defense Forces Medical Services, Mulago National Referral Hospital, Joint Clinical Research Center and Uganda Blood Transfusion Services. The team is now moving forward to undertaking the CCP trial. Project details are shared and accessible [here](#). COVID-19 Convalescent Plasma as an investigational drug launch in the Media September 17, 2020.

By Harriet Adong



## Projects to Address Air Pollution at MLI

Similar to various low- and middle-income cities, Kampala has significant air quality problems. Several factors and sources contribute to the escalating levels of air pollution. These come from both natural phenomena and anthropogenic activities. Household related air pollution, traffic and industrial pollution all add to Kampala's ambient air pollution. The high rate of urbanization accompanied by rural-to-urban migration has resulted in sprouting informal settlements in the large urban areas of Kampala.

A number of residential spaces are densely populated with slum dwellings instead of planned communities. High population growth rate has exerted overwhelming pressure on several public amenities that has negatively impacted KCCA's service delivery system including underperformance with domestic garbage collection. As a substitute, people have resorted to burning garbage resulting in the production of highly toxic pollutants. These slum dwellings are generally underserved as most of them are considered to be outside KCCA's jurisdiction.

Several uncertainties exist in slum communities, such as the unknown number of the slum dwellings, limited epidemiological studies on air pollution and lack of prevalence statistics on cardiorespiratory diseases. These are some of the compelling factors driving researchers at MLI to embark on projects targeting vulnerable groups in line with its vision for healthy lungs. The overarching aim is to develop strategies that address household air pollution and ambient air pollution under two projects: Household Air Pollution and its related Cardio-Respiratory Health Effects; and Ambient Air Pollution in the context of Source of Apportionment with Chemical Speciation in urban Populations in Kampala. The anticipated research findings will add on existent data to inform policy makers in the formulation of air pollution standards and legislative guidelines cognizant of the Ugandan



**AIR POLLUTION:** A black cloud of smoke from burning tyres in Katwe pollutes the air

National Environment Act which was passed on the 27th June 2019.

The household air pollution project is operationally envisaged in four phases. **Phase one** will identify the baseline burden of household air pollution and its related health effects in three slum areas in Kampala. **Phase two** will entail a study population of  $\geq 1000$  respondents to explore the prevalence of cardiorespiratory subtypes associated with air pollution in slums. **Phase three** aims at community sensitization. An awareness campaign with a "Citizen Science" philosophy for community engagement will be adopted among a vulnerable group of urban slum dwellers. It will involve educational modules, training, coaching, workshops, conferences and national advertisements on radio, TV and newspapers. During **Phase four**, all the findings from the three phases will be consolidated alongside consultations with key informants in the communities to develop a popular intervention strategy based on scientific evidence. Part of the **phase one** findings have been compiled in a scientific report titled "Vulnerability Scoping Study: Air Pollution Exposure in Low Income Households in Kampala" that was co-authored by researchers at MLI and Birmingham University, available on research gate.

The ambient air quality in Kampala has mainly been observed through the particulate matter (PM) measurements made at the U.S. Embassy and by Makerere University's AirQo since 2017. However, currently no assessment has

been made on the acute health effects of ambient pollution such as daily hospitalization and emergency department visits for adverse cardiorespiratory outcomes. Thus, we are proposing a 3-year project that will utilize the existing data as well as collect PM<sub>2.5</sub> samples, chemically characterize them and analyze the resulting data to identify and apportion the PM sources. First, a retrospective study will be carried out to explore the associations between PM<sub>2.5</sub>, Source-Specific PM<sub>2.5</sub>, and Acute Cardiovascular and Respiratory Event Rates in Urban Kampala. Then prospectively, a one-year longitudinal follow-up study will be carried out to measure the baseline Ambient Air Pollution levels in areas with low, medium and high PM<sub>2.5</sub> concentration levels alongside source apportionment with chemical speciation. The baseline air pollution related health data derived from this project will be used to formulate a model that is able to predict any future air quality status in Kampala as well as ensuring the technology is amenable and transferrable to other urban cities in Uganda.

**Conclusion:** In line with NEMA, KCCA, Uganda National Academy of Sciences, government ministries such as Ministry of Housing, Ministry of Energy, Ministry of Health as well as and other stakeholders from private sector, this is a timely responsive programme to enhance local decision-making abilities with the intention of improving urban air quality/ reduce the adverse health effects of air pollution upon human health.

By Shelton T. Mariga



## College of Health Sciences Principal visits the Lung Institute

On the 8th of September 2020, the Lung Institute was honoured to host the Ag. Principal of the College of Health Sciences, Prof. Isaac Kajja for his first official visit. During the visit, he thanked and applauded management for setting up the Lung Institute.

Makerere University's College of Health Sciences is one of the leading medical schools and research colleges in Africa. The Lung Institute is one of the newest units within this college. It was set up with a mandate of providing innovative teaching, learning, research and clinical services that are responsive to national and global needs.

In the course of the visit Prof. Kajja noted that there were a number of things Senior House Officers (Master's students of Medicine) could benefit from the Institute and he encouraged an early introduction of certain aspects to students so as to interest them in lung health. This therefore means that there is



**CLINIC TOUR:** The Ag. Principal of the College of Health Sciences, Prof. Isaac Kajja is taken on a tour of the MLI clinic

a need to generate learning schedules for students. He further recommended that the Lung Institute's physicians should be part of student supervisory teams and he noted that this was very important. He concluded the visit with a pledge to

engage the Dean, School of Medicine about students rotating at the Lung Institute as an opportunity to build capacity within the College.

By Pauline Ndagire

## Dr. Bruce Kirenga appointed as a GINA Advocate

The Global Initiative for Asthma (GINA), is a network of individuals, organisations and public health officials who disseminate information about the care of patients with asthma and provide a mechanism to translate scientific evidence into improved asthma care. The GINA Assembly was subsequently initiated as an ad hoc group of dedicated asthma care experts from many countries.

The Assembly works with the Scientific Committee, the Board of Directors and the Dissemination and Implementation task group to promote international collaboration and dissemination of information about asthma.



**GLOBAL INITIATIVE  
FOR ASTHMA**

GINA Board of Directors has invited a group of 41 international leaders in the field of asthma from all continents to act as GINA Advocates from 2020, for a 3 years term. Dr. Bruce Kirenga, the Managing director of the Lung Institute will be one of the five representatives from Africa.

The advocates' responsibilities include active and accurate dissemination of GINA strategy documents, work to foster

their implementation, yearly attendance of GINA Assembly and Advocates meeting (physically and remotely via web) and provision of feedback on the annual GINA Report to the GINA science committee.

The complete list of GINA Advocates can be accessed at: <https://ginasthma.org/about-us/gina-advocates/>

By Pauline Ndagire

**WORLD COPD DAY**  
NOVEMBER 18, 2020 | [WWW.GOLDCOPD.ORG](http://WWW.GOLDCOPD.ORG) | @GOLD\_COPD