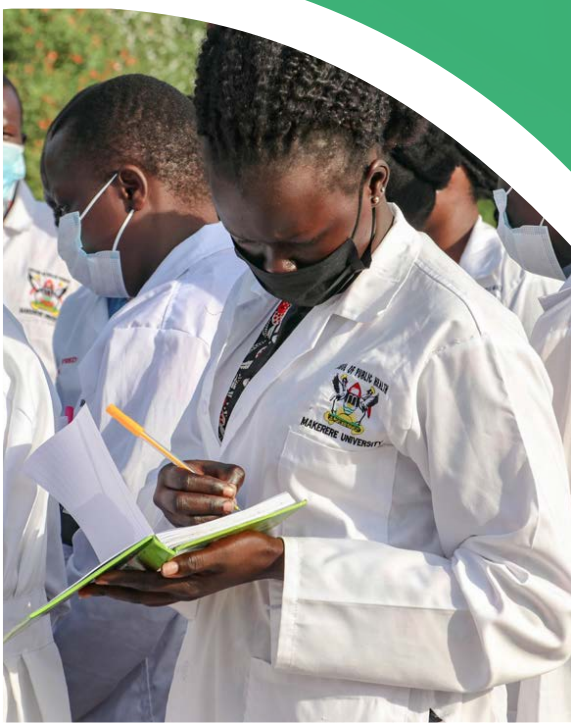
70 YEARS ANNIVERSARY

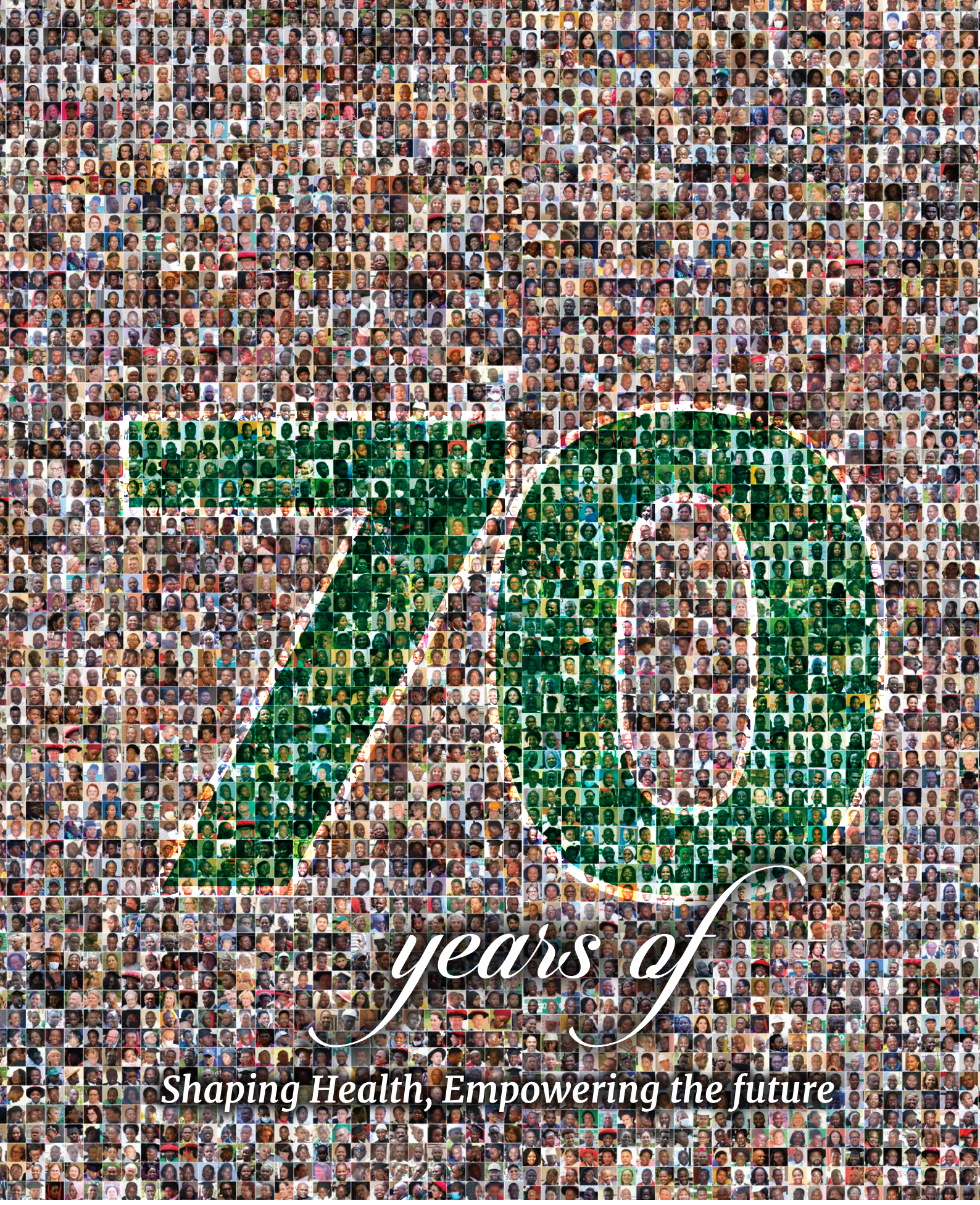



# 70 years OF PUBLIC HEALTH

70 YEARS ANNIVERSARY

MAKERERE UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

Shaping **Health**, Empowering the **Future**


years of
Shaping Health, Empowering the future

# Editor's Note

## *Dear Reader,*

I am delighted to welcome you to this special edition marking 70 years of the Makerere University School of Public Health (MakSPH). This magazine is not just a collection of stories; it's a celebration of the rich history, resilience, and remarkable progress of one of Sub-Saharan Africa's most distinguished public health institutions.

Within these pages, we take you through the incredible journey of MakSPH, starting in the 1950s as a humble department of preventive medicine and growing into a leader in public health training, research, and service. We pay tribute to pioneers like Professor George W. Gale and the many others whose dedication and vision have built the strong foundation we stand on today.

This edition gives you a glimpse into seven decades of achievements, from research that has shaped public health in Uganda and beyond to the remarkable accomplishments of our alumni and students. You'll find reflections on the pressing public health challenges of today, spotlight landmark discoveries, and offer a look at the promising future we are working towards.

This publication is the result of a dedicated team's hard work and sleepless nights, each detail reflecting their thought and effort. While not every story made it into these pages, we are deeply grateful to everyone who shared their time, insights, and memories to bring this edition to life.

Special thanks go to Dr. Rhoda Wanyenze, Professor and Dean of MakSPH, for her untiring support, and to Professor Emeritus David M. Serwadda, Dr. Michael Ediau, Professor Christopher G. Orach, and Ms. Robina Komuhendo for helping us document the rich history of this remarkable institution.

This magazine captures just a fraction of MakSPH's incredible journey—a chapter in the broader story of Makerere University and a century of medical training in Uganda.

MakSPH is built on a foundation of novelty, partnership, and a deep commitment to addressing the challenges that matter most to our communities. This magazine captures that spirit, and highlights a bit of the innovative work and ground-breaking achievements that shape who we are.

As you go through these pages, I hope you'll take a moment to learn, reflect, and draw inspiration from the journey of MakSPH—a story we are honoured to share with you.

The past. The present. A future full of promise.

***Enjoy!***

**Davidson Ndyabahika**

**Editor-in-Chief**


*Scan to access the E-copy of the MakSPH@70 Magazine*

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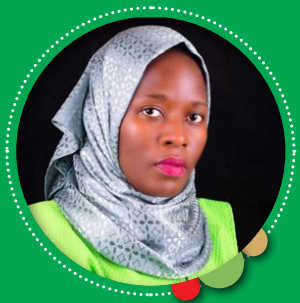

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# Congratulatory Message from Vice Chancellor

On the occasion of the celebration of 70 years of the School of Public Health at Makerere University, I want to congratulate the entire school on this major milestone. The School has long been a leader in research and community engagement, with a profound impact on public health in Uganda. From the early efforts in combating HIV to pioneering the establishment of nutrition centers like Mwana Mugimu at Mulago Hospital, the School has consistently driven initiatives that shape the country's public health landscape. Notably, the Kasangati Health Centre remains a flagship community engagement project, educating the public on environmental health and wellness.

When it comes to research, the School is our flagship for Makerere. The School brings in almost 50% of all research grants, both in the number and in value. So, the School, you can say, is responsible for Makerere's favorable rankings in many ways. The close collaboration with the Ministry of Health is extremely key, with leaders in the field praising Makerere's continuous support. As we look ahead, we have decided to make the School of Public Health a stand-alone School to have the status of a College. And we believe this should empower the School to do even more in research and community engagement than it has done before to amplify its research and community outreach, particularly in sustainable health, environmental health, and planetary health. This will further enhance the School's ability to apply research that benefits our communities and the global public health landscape.

The School's work in HIV research continues to be transformative. Through ongoing innovations, including injectable therapies led by researchers like Professor Noah Kiwanuka, the School is contributing significantly to global advancements in HIV care. I am confident that, with its newfound autonomy, the School will continue to pioneer ground-breaking public health solutions.

Makerere University's success, as recognized by Times Higher Education, owes much to its global collaborations. The Times Higher Education ranked us as the most collaborative university in the world because there are more researchers at Makerere University, publishing with a researcher at another university than any other university in the world. So, Makerere's progress has been supported by the very many partners we have around the world.

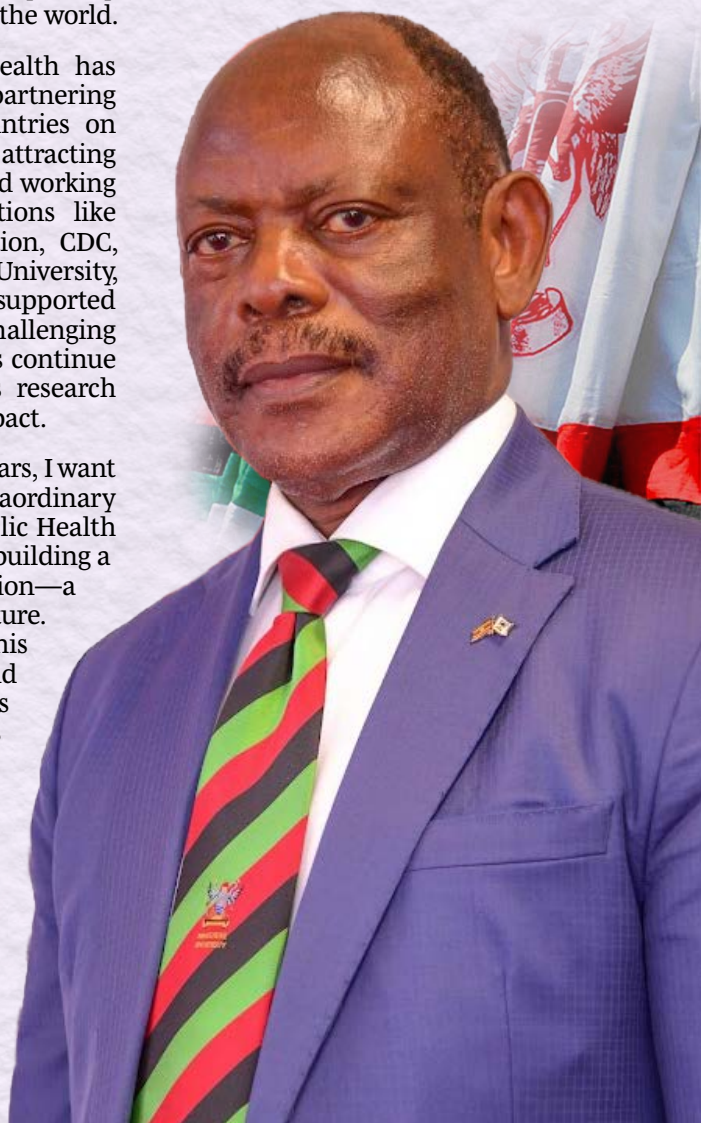
The School of Public Health has been central to this, partnering with more than 25 countries on the African continent, attracting and maintaining trust and working relations with organizations like the Rockefeller Foundation, CDC, NIH, and Johns Hopkins University, among others which have supported Makerere through challenging times. These partnerships continue to drive the University's research excellence and global impact.

As we commemorate 70 years, I want to acknowledge the extraordinary staff of the School of Public Health for their commitment to building a new home for the institution—a rare and inspiring gesture. The construction of this new facility is ongoing, and I call on all stakeholders to contribute to its completion.

Finally, I pay tribute to the visionary leaders who have guided the School through its journey, from its early days as a department to its current status as a stand-alone School. Under the exceptional leadership of Professor Rhoda Wanyenze, the School has flourished. I also commend the government of Uganda, led by our beloved President, Yoweri Kaguta Museveni for championing health initiatives for betterment of Ugandans, supporting higher education, research that continue to enable Makerere's success.

Together, we look forward to the continued growth and impact of the Makerere University School of Public Health.

***Prof. Barnabas Nawangwe***
***Vice Chancellor, Makerere University***



# Shaping Public Health

## A Conversation with Professor Wanyenze on 70 Years of Impact at MakSPH

As we mark the 70th anniversary of the MakSPH, we had a sit down with Professor Rhoda Wanyenze, the Dean, since 2017. A medical doctor and expert in disease control, Professor Wanyenze has not only steered MakSPH through incredible growth but has also been a key pillar in shaping public health practices and policies both locally and internationally. With decades of experience in public health and governance, she has impacted countless lives through her work at the national and international levels. As we celebrate this monumental milestone, Professor Wanyenze shares her reflections on the School's journey, its most significant achievements, and her vision for its future in a rapidly evolving field.

***Qn: MakSPH@70 is here, and we are celebrating a remarkable 70 years of impact. What thoughts or reflections come to mind when you think about this legacy?***

My own journey in the corridors of MakSPH is still quite vivid as the School had a tremendous impact on my professional growth and career, right from my Medical School training, through my masters program and the leadership fellowship thereafter. What was most remarkable and transformational for me was the field placements and opportunity to interface with and contribute to resolving complex challenges—both in the masters training and fellowship!

Overall, the growth and impact of the School of Public Health on various aspects of public health, teaching and learning, research and innovations and contribution to capacity enhancement for public health in Uganda and the African region has been outstanding. MakSPH has implemented a broad spectrum of very impactful research, capacity building and piloted various health systems strengthening projects, supported policy development, and evaluations. Currently MakSPH has presence in >50 districts in Uganda through various surveillance and systems strengthening interventions that are implemented with the Ministry of Health, regional referral hospitals, and the districts as well as non-public sector partners and communities. The School has trained thousands of public health professionals >70% of whom are serving in Uganda while others are employed within the African region and globally. The School has had a wide network of partnerships within Uganda, Africa and globally. Over the past 5 years MakSPH has worked with partners across 25 countries in Africa, in addition to the global and country-level partnerships.

***Qn: MakSPH has seen impressive growth in reputation both regionally and globally. What do you believe have been the key factors driving this success?***

Strong successive leadership over the years, with wide network of partners to expand the capacity and the reach of the activities and impact of the School. The intentional focus on identifying, attracting, and retaining highly competent young professionals, with mentorship and training opportunities provides a strong pipeline of academic and research staff. The grants management unit has also contributed significantly to the growth and impact by ensuring compliance to

externally funded research and other projects as well as coordinating training and support to staff—this unit has very strong expertise and experience with subcontract management and has enabled the School to successfully subcontract various projects to universities across Africa. The large number of well-placed alumni and students from partner universities hosted by the School expand our networks, partnerships, and other opportunities.

### *Qn: You've held several leadership roles at MakSPH, including serving as Dean since 2017. Could you share some key moments from your leadership journey and what motivated you to take on these roles at the School?*

My professional and leadership journey spans across clinical practice, management of public health programs, research projects and networks of partnerships within Uganda, the African region, and globally. Prior to joining MakSPH as academic staff, I was a project director for the leadership Fellowship and surveillance programs at MakSPH, and prior to that as project manager for the MJAP program. In addition to research and teaching, I have a passion for organizational development and have previously evaluated systems across academic and research institutions in Uganda and other countries in Africa.

### *Qn: As Dean, what do you consider to be the most significant achievements of the School, especially in advancing public health research, training, and its impact on the community?*

Over the past 6-7 years, we have had a very intentional and balanced attention to teaching and learning, expanding and strengthening our research partnerships, outputs and impact, as well as an ambitious infrastructure expansion plan to meet our growth in academic and research projects. With four new programs over the past six years, the number of graduate students has significantly increased (especially PhD training). However, we have also enhanced student support and timely completion. We enhanced support for young faculty and research associates through the grants and capacity building committee. We have doubled the number of research projects and outputs over the past 5 years—largely driven by increased contribution of young faculty and research associates. We have also grown our research partnerships, especially the regional networks within Africa. And the growth of infrastructure is significant, with our 500-seater auditorium in use as we continue with construction of the 8-storey main block, among others. We look to the future with excitement as we launch our strategic plan for 2025-2030 and as MakSPH transitions to a standalone School within Makerere University.

### *Qn: As MakSPH transitions into an independent School, what does this shift mean for its future, and what key lessons do you believe will shape the School moving forward?*

MakSPH evolved from an independent Institute of Public Health. With the level of growth in academic programs and number of students as well as research projects and partnerships, the independent status will provide a lot more traction in the engagements within and outside the university—especially efficiency in business development and operations. As an independent Institute, MakSPH worked with various faculties within Makerere university and especially the Faculty of Medicine. The Institute taught public health to medical students and implemented collaborative research projects with staff in the Faculty of Medicine—this is critical to ensuring a well-trained health workforce as well as robust research and we will ensure that it is sustained.

### *Qn: As MakSPH looks ahead to its centenary in 30 years, what is your vision for the School's future? How can it continue to thrive and remain relevant in the constantly evolving field of public health?*

My Vision is to see MakSPH as a sustainable, responsive and impactful School providing thought leadership for public health. With the increasing complexity of public health challenges, in Uganda, the continent and globally, MakSPH should further enhance its contribution to policy dialogue and engagement, production of high-quality workforce as well as knowledge generation and translation to contribute to the new public health order for Africa. We must sustain our engagement with communities and various actors in health to ensure relevance of our products and impact.

# Congratulatory Message from the Deputy Principal, College of Health Sciences

## Dr. Richard Idro

As an alumnus of the Institute of Public Health, now the Makerere University School of Public Health, it is indeed a great honour to celebrate this important milestone of 70 years of service. Looking back, I recall the exceptional training I received as a medical student, which not only shaped my career but also countless others who have walked through the same halls.

The Institute, and now the school, has been a foundation of public health in Uganda and the region. From its early days, it played a fundamental role in training public health professionals who would go on to shape the health landscape in Uganda and beyond. I myself am a proud product of the training that took place at IPH, where I had the privilege of learning from visionary professors like Professor Kikatahi, Professor Ndugutse, Professor Bazeyo and His Excellency the former vice president of Uganda, Professor Gilbert Bukenya.

What makes the School of Public Health truly remarkable is not just the academic excellence it fosters but also the practical application of knowledge in public health challenges. I remember, as a student, the deep insights into epidemiology and disease transmission that have remained with me throughout my career. The School's focus on both theory and practice continues to be a key factor in its ability to drive impactful change, from the health reforms in Uganda to its leadership in regional and international health initiatives.

Over the years, the School has played a crucial role in tackling public health challenges, including through its work on nutrition through the *Mwana Mujimu* Nutrition Unit, the fight against schistosomiasis, and its significant contribution to the HIV/AIDS response across Sub-Saharan Africa and building national and regional public health capacity through the public health fellowship programmes and support to the Ministry of Health. The success of these initiatives is a testament to the strong foundation laid by the school and its continual support for capacity-building and public health leadership.

Today, as we celebrate 70 years, we also acknowledge the School's ongoing contributions in training public health leaders and advancing health systems. It is here that some of the most influential figures in public health, including former and current health leaders, were trained. With new centres of excellence in maternal and newborn health, environmental health, and sustainable health, the school is pushing boundaries in research and service delivery. I am proud of all the work the school has done and continues to do, and I am confident that it will remain a leader in public health education and innovation for many years to come.

We in the College of Health Sciences say congratulations to all the students, staff, and alumni of the school who have made this journey possible. We look forward to continued collaboration and training, especially as we work together to tackle the health challenges of today and tomorrow.

***Dr. Richard Idro,***
***Associate Professor of Paediatrics and Child Health***
***Deputy Principal, College of Health Sciences***
***Makerere University***

# Congratulations to the Public Health community, Professor Emeritus Sewankambo

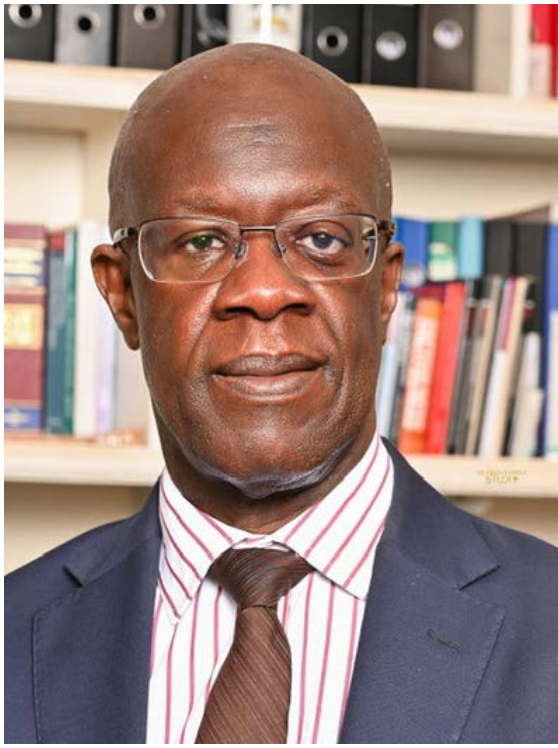
I have been part of Makerere University since 1981, witnessing its transformation from my student days to its current state. The School of Public Health, evolving from the Department of Preventive Medicine to an Institute and now a thriving school, has made remarkable strides. I congratulate the leadership, staff, students, and all contributors on its 70-year journey.

Public health, being preventative and cost-effective, remains essential. While eradication of diseases may be impossible, prevention and health promotion can significantly reduce their impact. Unfortunately, policymakers often undervalue public health, which extends beyond disease prevention to addressing broader determinants like climate change and urbanization.

Urbanization presents unique challenges. Poorly planned cities negatively impact health, and public health must play a greater role. The School's multidisciplinary approach offers vast opportunities, enabling collaborations with clinicians, engineers, lawyers, and social scientists to tackle challenges from hospital safety to health behavior. Communication specialists and educators further empower communities and shape healthy habits.

Despite financial and knowledge gaps, the School's policy influence, such as through the Climate Change Health National Adaptation Plan, is commendable. Strengthening collaborations, embracing emerging fields, and supporting newer public health institutions through partnerships are crucial for future growth. A consultative, inclusive approach with policymakers, academia, and communities will sustain and enhance its impact.

Research is the backbone of the school's mission, helping the public understand issues in public health, supporting the Ministry of Health, districts, and regions in service delivery across Uganda will remain key. We must also remember that we do not do research for the sake of it; many proven interventions already exist; we know they work. We should move away from just being satisfied that we have done research and put publications in journals and libraries, but ask ourselves, "Have those results impacted policy and practice?" Therefore, we must be able to communicate our results to the general public and to the policymakers in simple language. I wish the Makerere University



School of Public Health well in the next 70 years.

***Nelson K. Sewankambo,***
***MBChB, MSc, M. MED, FRCP, LLD (HC)***
***Professor Emeritus, former Dean of Makerere University Medical School, and past Principal Makerere University College of Health Sciences***

*Dr. Nelson Sewankambo and Dr. Seth Berkley during the late 1980s. Berkley, then with the CDC and the Task Force for Child Survival at the Carter Presidential Center, was assigned to Uganda's Ministry of Health in 1987. During this time, he served as an Honorary Lecturer at Makerere University. Later, while at the Rockefeller Foundation, he played a pivotal role in supporting the School of Public Health to establish the MPH program in the early 1990s.*

# Congratulatory Message from The Minister of Health

## Dr. Jane Ruth Aceng Ocero

I would like to congratulate the Makerere University School of Public Health on its 70th anniversary. As an alumnus, I am incredibly proud to be part of this institution. I draw a lot of strength, knowledge, and skills from the School that have shaped who and what I am today. Much of what I do stems from the wisdom I acquired here. A big congratulations to the entire team at the School of Public Health and all those who have passed through its doors. God bless you.

***Dr. Jane Ruth Aceng Ocero***

***Minister of Health- Uganda***

# 70 years is a good milestone for us to celebrate with the School

## Dr. Daniel Kyabayinze

I am excited and wish to congratulate the School of Public Health for making 70 years while contributing to the development of this nation. We are very sure that many diseases in our country, almost 75% can be prevented. The journey of moving from curative medicine to preventive medicines and health promotion has shown that we have been able to improve the livelihoods and the life span of people in Uganda. Personally, I wish to thank the school for contributing to the training of people who we deploy in epidemiology outbreaks in the fellowship of field epidemiology who have contributed to the number of people who have been responding to our outbreaks. For instance, the Ebola outbreak and the malaria outbreaks we've had the students and the fellows participating. We are also excited to know that your continuous implementation science improves our programming as a Ministry as we move from clinical research to public health research to implementation then better programming.

We are also able to measure the impact of our outputs and outbreaks, the indicators that we follow to see how we are making progress. I know that the School is currently also supporting us to document evidence of progress towards implementing or elimination of some of the diseases including HIV indicators, TB indicators which we are working with the school to assess progress, especially in the last 20 years. We are also keen on continuing to work with the school with so many research grants that we get here in the Ministry of Health and we collaborate to work with the School of Public Health.

Most of the lecturers and students are part of our teams in projects for M&E, for digitalization, for impact assessment, for maternal and child neonatal prevention and interventions. We also want to thank the people who are beginning to bring up trainings in malaria interventions and elimination. All these collectively help us to come up with better policies.

In fact, also, many Faculty from the School sit on majority of our technical working groups as policy developments and guidelines are being written. So, in that spirit I think 70 years is a good milestone for us to celebrate with the school and also to wish them even greater heights as they progress to aspirations beyond being just a school of public health but becoming an international institution to serve the region. You also know that many of the alumni from this training in public health serve the whole region, almost the whole of Africa and in fact internationally. We are able to send our qualified practitioners in public health and epidemiology and statistics to serve this nation.

On behalf of the Ministry of Health we congratulate you and especially in the Department of Disease Surveillance, in the Departments of Nutrition, in the labs and informatics now and analytics. We want to continue this collaboration but we also want to see more interactions as we take this work from research to policy.

Thank you.

***Dr. Daniel Kyabayinze,***
***Director of Health Services in charge of Public Health***
***Ministry of Health, Uganda***

# U.S. CDC's vision and the future with MakSPH

## Dr. (Mary) Boyd Adetinuke

Congratulations on celebrating 70 years of impactful service. This is a remarkable achievement, especially considering the significant contributions you've made to public health in Uganda. The U.S. government has had a long and proud history of supporting Makerere University for decades. From our HIV/AIDS collaborative research through NIH to educational and scholarship programs through USAID, PEPFAR funding for essential public health education, research, and surveillance to our contributions in building Uganda's public health capacity through CDC, it is a remarkable history!

The U.S. government's collaboration with Makerere University School of Public health began in 1994 with the establishment of public health school without walls. This is when MakSPH was tagged to become a Center of Excellence, providing leadership in public health and better health for Uganda through public health training, research and community service.


As part of this, for nearly a decade until 2014, U.S. CDC funded an HIV/AIDS Fellowship Program aimed at enhancing leadership and management skills in HIV/AIDS, maternal and child health, and malaria. Over 1,000 alumni of this program now lead health programs across Uganda, including Prof. Rhoda Wanyenze, the Dean of MakSPH, one of the distinguished alumni!

In 2015, due to a continued shortage of field epidemiologists, Uganda Ministry of Health (MoH) worked with Makerere University School of Public Health (MakSPH) and US Centers for Disease Control and Prevention (CDC) to establish the Uganda Public Health Fellowship Program (PHFP) in 2015, fashioned after the US CDC Epidemic intelligence program. PHFP is an in-service, post-master's-degree field epidemiology training program (FETP) that attempts to address human resources for health needs. Fast forward 30 years of collaboration, the PHFP remains enshrined in MoH's long-term sustainability plan and is in full operation under the Uganda National Institute of Public Health (UNIPH).

It now has an advanced national level (2 years), a regional program (9 months), and a district program (3 months). We are jointly implementing the Laboratory Leadership Program, which trains public health professionals in laboratory management as well as the Infection Prevention and Control (IPC) fellowship that strengthens IPC practices, such as hand hygiene and medical waste management in healthcare settings.

Another program I'll touch on is the PEPFAR funded surveillance project called the Crane survey. True to its mission for service to the community, MakSPH through CDC collaboration have designed an Enhanced Surveillance Project (Crane Survey). This project has helped establish a robust surveillance system for key populations in Uganda and implement evidence-based HIV programming that ensures our most vulnerable populations are not left behind and these studies are shaping national policies and strengthening civil society organizations' ability to control HIV in Uganda.

Lastly, another important collaboration with PEPFAR funded partnership through CDC has been in strengthening Uganda's health systems, particularly in data use, reporting, and analysis. Through initiatives such as the Monitoring & Evaluation Technical Assistance (METS) project, we have helped build Uganda's capacity to generate high-quality health data, essential for making evidence-based decision making and improving public health responses. A key achievement of this collaboration was the recent launch of Uganda's first National Data Warehouse, a vital step in improving the management and use of health data across the country and one that will play an essential role in strengthening health systems in Uganda for years to come.

For the future, it's most important for MakSPH to remember its roots. From the time of the Public Health Schools without Walls MakSPH was tagged as Center of Excellence, providing leadership in public health and better health for Uganda through public health training, research, and community service. USG commits to continued partnership in these areas to continue to improve for all Ugandan people.

***Dr. Adetinuke (Mary) Boyd,***
***CDC Uganda director***

# 70 years is a great achievement

## Dr Yonas Tegegn Woldemariam

In the last six and a half years as the World Health Organization (WHO) Uganda Country Representative, one of the good achievements we have managed is to have a strong collaboration with the Makerere University School of Public Health (MakSPH). The School of Public Health is one of the excellence institutions in Uganda and I can be a real witness for that because in our collaboration the School of Public Health was able to provide us with expertise and evidence that would influence the policies we are implementing in Uganda. Quite uniquely, I found out that the collaboration between the Ministry of Health and the Makerere University School of Public Health and WHO had some magic around it. It has led to a number of significant research results and based on that we were able to strengthen our work in Uganda and save lives by ensuring the right policies are implemented.

We also have a memorandum of understanding with the School of Public Health which helped us to interact more systematically and address the priority evidence needs of Uganda. It has been a great pleasure and a most productive collaboration. I know the School of Public Health has also partnerships with other partners and the very fact that it is working with a number of stakeholders also gives us a better understanding of who is doing what and they were able to guide us on a number of policy issues. I think it is one of the major milestones and achievements I would say that we were able to do and these policies do not only influence what we wanted to do. They have a real meaning. The right policy leads to saving lives and these partnerships I believe have also resulted in saving lots of lives.

I know the [MakSPH] also works with our regional office and other countries and its experts and scientists are helping other countries and I think we should further strengthen that and use Makerere University to influence global health and ensure that Africans benefit from the knowledge which this School has generated and continue to influence the public health landscape of Africa and continue being productive and being proactive in addressing the bigger global issues be it climate change, be it pandemics and so forth. I think more than any other time we have realized public health is not just a simple science. It saves lives and it saves lives in millions and the School of Public Health is at the center of it and influencing it and we should continue doing that and with the new advances it also has to expand its contribution to global health.

At this celebration I congratulate the school, 70 years is not a short time. To sustain a public health school for 70 years is a great achievement but I am sure in the next 70 years and beyond the Makerere University School of Public Health will continue making a mark in the well-being of humanity and I think Uganda is a place where a lot of discoveries have happened in public health and it will continue enriching knowledge in public health globally and ensure that it contributes most of all to the well-being of Ugandan people.

***Congratulations!***
***Dr Yonas Tegegn Woldemariam***
***WHO Representative to Uganda (January 2018 -July 2024)***

# 70 years of

## Shaping Health, Empowering the future

Special thanks go to the individuals who led efforts to document the history of MakSPH. The following pages capture our journey from humble beginnings to key milestones, offering a glimpse into the future. This chronicle reflects our dedication to shaping public health in Uganda and beyond.

**DAVID M. SERWADDA**

**MICHAEL EDIAU**

**CHRISTOPHER G. ORACH**

**RHODA K. WANYENZE**

We extend our gratitude to Robina Komuhendo and Davidson Ndyabahika for their contributions to stakeholder interviews and literature searches. Special thanks go to all individuals who participated in interviews, including Prof. Francis Omaswa, Prof. William Bazeyo, Dr. Nelson Musoba, Prof. Gilbert Balibaseka Bukenya, Mr. Stephen K. Lwanga, Prof. Josephine Nambooze, Dr. Edward Kanyesigye, Prof. John Tuhe Kakitahi, Dr. Robert Mayanja, Prof. Fred Wabwire-Mangen, Prof. Joseph Konde-Lule, Prof. Nazarius M. Tumwesigye, Prof. David Guwatudde, Dr. Sebastian O. Baine, Dr. Annet Kisakye, and Dr. Henry Mwebesa. We also acknowledge the Principal Investigators of various MakSPH projects for their valuable input, particularly in sharing project reports.

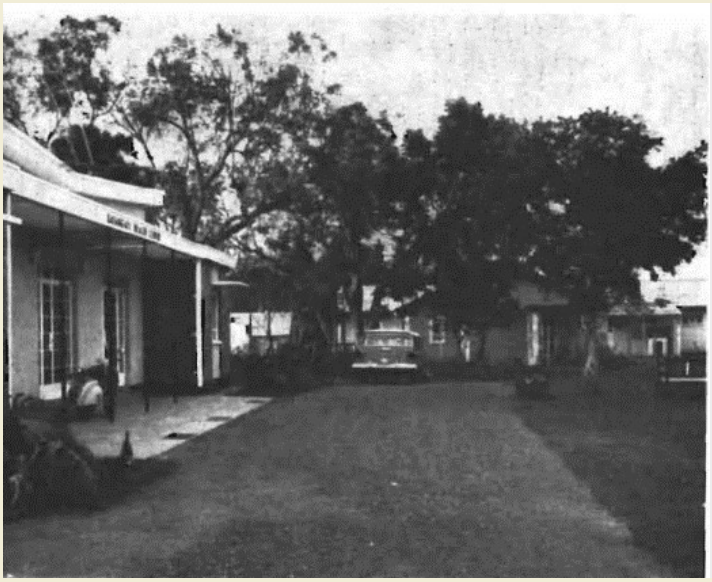
# School of Public Health Through Makerere University's Century of Existence

## OUR HISTORY

Makerere University School of Public Health (MakSPH) is among the leading public health education and research institutions in subSaharan Africa. The school is mandated to provide training, community services, and research in the public health field. The origin of MakSPH dates back to the early 1950s when preventive medicine was introduced as an academic discipline of medical sciences in the faculty of medicine of the University of East Africa that later transformed into Makerere University. Later in 1957, the public health discipline evolved into a fully-fledged department of preventive medicine. At the onset, the department was headed by Professor George W. Gale [1, 2] and manned by a few expatriates [2].

### The growth and development of the public health department through the years

The department of preventive medicine worked closely with other departments in the medical school to deliver on its mandate of teaching, community service, and research in an integrated and complementary manner. The department implemented its activities mainly through the Kasangati health center (Figure 1). Kasangati, one of Africa's pioneering community health centers, was established by the faculty of medicine in 1959 with the support of the Rockefeller Foundation [1, 3].



*Kasangati Health Center in the early 1960s (Source: The Central African Journal of Medicine, 1964)*

Under the leadership of Dr. John Bennet, a renowned preventive medicine practitioner and researcher at the time, Kasangati health center evolved to become one of Africa's preeminent community health centers. Dr. John Bennet and his team mapped out households served by the health center and promoted preventive and curative care interventions. Through this contribution, Kasangati health center recorded a tremendous improvement in population health indicators, most notably, the sudden and sustained

reduction in infant mortality rate to as low as 24/1000 live birth, which was only comparable to the indicators in developed countries at that time. The model of service delivery that Kasangati health center implemented contributed to the concept of primary health care (PHC) that the World Health Organization would later roll out to other countries. These achievements made the Kasangati health center well recognized internationally, particularly by the WHO, and was considered a center of excellence for community health service delivery and research in Africa [4].

The achievements of the department of preventive medicine resulted from the increased staffing in the 1960s [4]. The staff, notably Drs. Menocoso and Adetokumbo Lucas,Nigerian nationals,developed a cordial and vital relationship with the department of preventive medicine, and Dr. Joseph Lutwama. Dr. Lutwama was later appointed Dean of the medical faculty and was pivotal in the growth of the preventive medicine department. When Dr. Menocoso and Lucas later left the department to join the World Health Organization (WHO) in leadership positions, they maintained a good relationship with Dr. Joseph Lutwama and the department. Through that cordial relationship, the department of preventive medicine enhanced its partnership with WHO. Right from its early years, the department of preventive medicine played a pivotal role in advancing preventive medicine in Uganda, the east and central Africa region. The WHO supported the establishment of a regional center of preventive medicine (public health) after 1969. This was a multinational preventive medicine center of excellence for the African region and beyond. The WHO also supported the establishment of the epidemiology and biostatistics unit within the department of preventive medicine, which eventually evolved into the current department of epidemiology and biostatistics in the Institute of Public Health. Figure 2 shows the staff of the department of preventive medicine in the 1960s.

**Right from its early years, the department of preventive medicine played a pivotal role in advancing preventive medicine in Uganda, the east and central Africa region.**

*Department of Preventive Medicine members of staff in the 70s.*

*The four-storey department of Preventive Medicine (current MakSPH) building*

The department of epidemiology and biostatistics and the department of preventive medicine provided statistical support to all other departments conducting research in the faculty of medicine. This support was pivotal in expanding health research at Makerere University at that time. The WHO also used the department of statistics to promote the teaching of statistics in the medical schools in the African region. Through this support to other medical schools in the region, the Institute of Public Health's influence expanded beyond Uganda's borders. Mr. Stephen Lwanga, a statistician in the department, played a critical role in providing statistical support to the rest of the departments in the faculty of medicine at Makerere University and those in the region. Through the broadening of public health issues that the department handled and the impactful influence of the department of preventive medicine, the proposal to transition from the department of preventive medicine to an Institute of Public Health was initiated. The department referred to as an institute before it was formally declared one.

While the idea of elevating the department of preventive medicine to an institute of public health (IPH) was conceived in 1967, the assumption of political power by Idi Amin's regime led to the exodus of the remaining expatriates, and the idea of setting up the IPH was shelved almost indefinitely. However, on July 1st, 1975, with the leadership of Prof. Joseph Lutwama as the Dean of the medical faculty and Prof. Suleiman Jabir Farsey as head of the department of preventive medicine, the department was elevated to the Makerere Institute of Public Health [2]. Subsequently, the institute became fully autonomous from the faculty of medicine in 2001. In 2007 the institute was renamed Makerere University School of Public Health (MakSPH) and was autonomous until 2008, when it became a constituent school of the Makerere University College of Health Sciences.

The young institute upgraded its infrastructure and units to cater for growth and development. The statistical unit previously in what is now the Uganda Cancer Institute, the nutrition unit in old Mulago, and other related units in the medical school, were consolidated into the IPH. Dr. George Saxton an American physician who was supported by the Rockefeller Foundation and was at Kasangati health center (and head of the center in the late 1950s) coordinated the fundraising for the construction of a building for the institute. In the late 1960s [2], the Rockefeller Foundation, and the governments of Denmark and Norway provided financial support to construct the four-story building, and equipped it with modern scientific equipment. By January 1971, the IPH (the present MakSPH) building (Figure 3) was in place, complete with furniture and ready for occupation [2]. The Rockefeller Foundation in particular, had special interests in providing services for family planning and maternal and child health, and this was duly provided for in the new building.

# One-on-One with Professor Josephine Namboze: Reflections on Preventive Medicine Training in Uganda

Professor Josephine Namboze was a Director of the Institute of Public Health (IPH) from 1979 – 1988, making her the first woman to head the Institute which later became Makerere University School of Public Health (MakSPH). She is also a Professor of public health and the first female medical doctor in East Africa.

During her tenure as the Director of IPH, which commenced when there was political instability in the country, Prof Josephine Namboze, triumphed over fear to lay a strong foundation for MakSPH in reproductive health, particularly family planning research and service delivery. Being one of the academicians with high qualifications and good leadership experience at the time, she became the head of the Institute, replacing Prof. Captain Dr. Virginio Lachora Ongom who had passed on.

***Please share with us your journey in education and how what it was like to lead then?***

I joined Makerere University first as a student, and I had the honour of graduating at a ceremony that was presided over by the Queen Mother of England because at that time Uganda was still a British protectorate.

I did my medical internship at Mulago Hospital, after which I went for further studies at the University College of London Great Ormond Street Institute of Child Health (ICH), where I received my diploma in child health over the year.

I went to the School of Public Health in Berkeley, University of California, where I received a Master of Public Health and majored in maternal and child health.

I did my field training in Central and South America and Caribbean islands. I came back and started working at Makerere as a medical officer for Kasangati Health Centre, which was attached to the Department of Preventive Medicine at Makerere University Medical School.

That Health Center was built with a grant from the Rockefeller Foundation of New York, the same foundation that sponsored my study in London and gave me a fellowship. They made it possible for me to get to see other parts of the world, see other institutions, learn more about maternal and child health, and how to provide service to the people of my country.

After working as a medical officer at Kasangati Health Centre, I joined Makerere Medical School, Department of Preventive Medicine, as a faculty member of the department until it became IPH.

***Please take us through the journey to the formation of MakSPH.***

The School of Public Health did not start automatically. There was a transition. At first, it was a department of preventive medicine. And that department used to teach public health.

*Prof. Josephine Namboze, Director of the Institute of Public Health, 1979 – 1988.*

And every doctor who went through medical school had to sit for public health just as much as they sat for surgery, obstetrics and gynaecology and other subjects. So, it was a Department of Preventive and Social Medicine.

Initially, it was called preventive medicine, then social and preventive medicine, and then finally it became public health. The names kept changing, but the material that was being taught remained the same.

So now, it was the department, just like any department, that had a professor. The first professor was G.W. Gale. Then he was succeeded by Professor Bennett. We had a big staff. We had doctors from the School of Public Health in London.

We had Dr David J. Bradley, he was teaching there. I also, after my term of service at Kasangati expired because I was there for two years as a medical officer, joined the Department of preventive medicine as a full-time faculty member.

Dr John Bennett was the professor at the department, which later became the Institute of Public Health. The Institute also had a postgraduate course in public health. Doctors who had graduated were receiving all the studies for a whole year and received a diploma in public health. But the medical students and undergraduates continued to be taught the same stuff and they would receive a final paper in the final examination in preventive medicine.

So, I think the main thing that happened was the initiation of the Diploma course in Public Health for the graduates in medicine and this was not only for Uganda but for students [that] came from West Africa, Ghana, Nigeria, Liberia, Tanzania, Zambia.

We had also one British, Dr. Teresa Watts, she also studied at the Institute of Public Health. She was a wife of a faculty member in agriculture, her husband was at the Faculty of Agriculture and she was a medical person from Britain.

There was a time when an MMed public health course was initiated. But that one didn't go on for a long time because we had only one student when I was there.

*[In July 1975, the department was declared as the IPH and Prof. Suleiman Jabir Farsey as the Director and it became the MakSPH in 2007].*

### *What was it like to study public health then?*

The students, when doing Preventive Medicine, would go to Kasangati Health Centre for orientation and see the type of work that health workers were doing and how we are implementing primary health care. Because that was the period when primary health care was being talked about. You know the components of primary health care, preventive, promotive and rehabilitation.

So, we used to run clinics on a daily basis for all people, adults and children and we used to also examine women who were expecting and select those who were at high risk. [*We would*] Identify those who are at high risk and refer them to Mulago hospital. As part of the school health, they would undertake vision examination so that those who had defective vision if they were identified would be referred for corrective measures.

### *Please share with us how you became the leader of the IPH (which later became MakSPH)?*

I was a faculty member at the Department of Preventive Medicine which became the IPH. Dr John Bennett heading it and when it was declared as the IPH, and Prof. Suleiman Jabir Farsey from Zanzibar was the first Director. Prof Suleiman also later went back to Oman and then I was told to apply [to replace him]. I said "I'm not applying" because there was someone who was very much interested and would be able to handle the situation better than a lay (civilian) person like me. So, I didn't apply. But Dr. Ongom applied. He was a captain in the army.

He had been through our school of public health –with diploma in public health. So, he became the head. And that was when things were really beginning to be very difficult. Because there was a time when we were not even sure whether our students from other countries would be able to graduate because Kampala was on fire or something [*due to political instability/insurgencies*]. It was difficult. At some point, we were under lockdown.

I became a professor, I think in 1979. I achieved professorial status. But it didn't mean that being a professor one would have to be the head of the Institute. But I reached professorial status. I had passed through all the ranks, lecturer, senior lecturer, associate professor, then professor.

But I was not the head. When he [*Dr Ongom*] passed away, then I had to be the head. Because somebody had to lead the institute of public health. And I was the most senior person at that time.

The leadership was tough, because by then things had started to be very difficult. Quite a number of staff members left. Those who were expatriates would not renew their contract. But others, the locals, a few that we had, they just vanished.

### *How did you manage the declining number of lecturers/trainers?*

When the numbers started going, it was tough. We had to share the

lectures we were taking. So, the workload became very difficult to manage. One would say, and I take the lecturing of two to three people, instead of lecturing the only subject that she was supposed to take. So, you have to go and read up the other subjects of people who were missing and be able to teach, continue teaching. But when it became so difficult, I appealed for outside help. I also went to the European Economic Community (EEC) *[a regional organisation created by the Treaty of Rome of 1957 by six European countries with the goal of providing economic stability and preventing future wars]*, the leader of the economy of the European Economic Community, I told him my problem, because you couldn't get some people from anywhere. They were considered to be imperialists. You see? [laughs] You had to be careful. But the European Economic Community, they were safe people. I wrote my problem, documented my problem, that we had staff shortage and appealed to him to assist us with people, with some staff from European community.

And he contacted the Royal Tropical Institute in Amsterdam. And they were very willing. I remember Professor Forman from that institute came down and a young doctor who was a statistician because our statistician had also left. He first went to Zambia and later he joined the WHO headquarters.

### *What would you highlight as some of the achievements at this time?*

I was like a captain on a ship, running a ship or being in charge of a ship, you say, oh, I hope this ship doesn't sink, I hope we don't get drowned. My duty was to stay in the place, keep it from sinking. I think I managed to do that because there was a time when we had a few people. I did my best to get people to come and help us, not transport. I managed to get transport. There was a time I got four new vehicles, two for the students, minibuses for students, one for the head of faculty and one for Kasangati Health Centre for the health educator to go around. I had to make sure that the teaching continues uninterrupted.

### *What is your final message to current leadership of MakSPH?*

I'm also grateful for the work that is being done, the big expansion that is being done, and the availability of various specialties of members of staff who could not be attained in our time because of a limitation of funds. I wish the School of Public Health the best. I hope it will grow and prosper more and more.

*Prof. Josephine Namboze (front row fifth from the left) during her days in the medical school*

## Kasangati Health Center set up

When the University of East Africa (Makerere University) was established, there was a need to strengthen community health, health care delivery, teaching, and research on African diseases. In 1959, the faculty of medicine, with support from the Rockefeller Foundation, developed an interdepartmental program at the health center at Kasangati, situated about 14 km north of Kampala on Gayaza Road. Kasangati Health Center acted as a model Health Centre for integrated service delivery, teaching, and research. The department of preventive medicine managed the health center. At that time, it was one of Africa's few outstanding public health training centers.

Kasangati Health Center thus played a pivotal role in facilitating community-based teaching, primary health care (PHC) delivery, and maternal and child health promotion, among other population health services. These were delivered in a more pronounced interdepartmental collaborative approach involving several departments of the faculty of medicine working together.

Through this collaboration, Kasangati Health Center, under the management of the preventive medicine department, made significant improvements in PHC and population health.

Figure 4: Dr. George Saxton (Kasangati HC Director in the late 1950s) and Mr. Letihaku, a health educator, examine a patient at the Kasangati rural health center in Uganda. (Source: Angela Matysia (2014).

**The early 1950s**

### Preventive medicine introduced

Preventive medicine was introduced as an academic discipline of medical sciences in the Faculty of Medicine of the University of East Africa the present Makerere University. Makerere University Faculty of Medicine was founded in 1923 on Mulago Hill in Kampala, Uganda, as the first medical school in East and Central Africa.

**1957**

### Preventive medicine evolves into a department

Preventive medicine evolves into a department: The preventive medicine discipline evolved into a fully-fledged department in the faculty of medicine Makerere University. Professor George W. Gale was the first head of the department.

**1959**

**The late 1950s**

### Mwana MugimuNutrition Center

Mwana Mugimu Nutrition Center was set up with support from Rotary International. It evolved to be recognized by Rotary International as the best nutritional unit in the East African region and was related to the Save the Children Fund, which provided administrative and financial support. Through this support, similar nutritional units/ sites were later set up all over the country, when Prof. John Kakitahi headed the unit in the 1990s. The program would later be recognized as a successful Save the Children Program and was visited by Princess Royal, Anne Elizabeth Alice Louise as seen in figure 5.

Figure 5: Princess Royal, Anne Elizabeth Alice Louise (3rd left and Prof. John Kakitahi) during her visit to Mwana Mugimu Nutrition Center in late 1950s.

# LANDMARKS IN THE HISTORY OF MAKSPH

## Pre-Autonomous


The 3-year Masters in Medicine (Public Health) was developed and added to the Diploma of Public Health program. The Masters in Medicine (Public Health) was developed to produce public health specialists who would grow into the academic ranks as Public Health consultants, given the staff shortage at the department and managerial ranks. The department of preventive medicine and later the IPH produced this cadre to support Primary Health Care (PHC) services at the district and central policy levels.

**1967**

### The idea of the institute conceived

The idea of elevating the department of preventive medicine to IPH was conceived. However, the realization of this idea was delayed mainly because of the political turmoil followed by the exodus of the remaining expatriates, especially in the early 1970s.

**1969**

### Postgraduate Diploma of Public Health

The 9-month-long Postgraduate Diploma of Public Health (DPH) Training Program was established in the department of preventive medicine. It was the first post-graduate program in IPH and was intended to build the capacity of doctors who would become District Medical Officers (DMOs).

**1967 - 1971**

### The IPH/ MakSPH building

In 1967, the construction of the IPH/ MakSPH building commenced in the new Mulago. In 1971, the four-story building, the present MakSPH home, was completed, well equipped, and furnished with support from the Rockefeller Foundation and the governments of Denmark and Norway. Dr. George Saxton Jr, an American expatriate, hired by the Rockefeller Foundation and Director of Kasangati Health Center and who taught in the department of preventive medicine at that time, obtained the grant. The department of preventive medicine moved from its initial home in the clinical research building in old Mulago near the cancer institute to the new building [3].

**1971**

### Masters in Medicine (Public Health)

Rakai Health Sciences Program

Improved Health Through High Impact Research

Rakai Health Sciences Program (RHSP), a collaborative biomedical research and service delivery organization, was set up by a team of researchers from Makerere University in collaboration with researchers from the Columbia and John Hopkins Universities, the Division of Intramural Research at the National Institutes of Allergy & Infectious diseases and the International Centre for Excellence Research (ICER). The pioneers included Prof. David Serwadda, Prof. Nelson Sewankambo, and Prof. Maria Wawer, and were eventually joined by Prof. Ronald Gray, Prof. Fred Wabwire-Mangen, among others. RHSP has strived to improve the local population's quality of life through community-based research, curative services, and prevention strategies in the districts of South-central Uganda. It has grown to an institution with multidisciplinary investigators, high-impact research, and substantial public health implications.

# LANDMARKS IN THE HISTORY OF MAKSPH

## Pre-Autonomous

### The early 1970s

**Parasitology unit/ laboratory**

The parasitology unit/laboratory for schistosomiasis/ bilharzia, malaria, and filariasis was set up by Professor VL Ongom. The unit became the national laboratory (under the Makerere University epidemiology unit) and later moved to the ministry of health (MoH).

### 1975

**Preventive medicine department elevated to IPH**

The department of preventive medicine was elevated to the Makerere University Institute of Public Health, the first public health institute in sub-Saharan Africa. This happened on the 1st of July 1975, when Prof. Joseph Lutwama was the Dean of the medical faculty, and Prof. Suleiman Jabir Farsey was the head of the department. However, administratively, the institute of public health remained under the Makerere university faculty of medicine until 2001 when it became fully autonomous.

### 1989

**Rakai Health Sciences Program established**

### 1991

**Advanced Diploma Programme in Health Services Management**

The 9-month Advanced Diploma Programme in Health Services Management was introduced. This program targeted different middle management health staff in Uganda. The program was housed at IPH and IPH ran it in conjunction with the Ministry of Health.

## Master of Public Health

Established in 1994, the Master of Public Health (MPH) Training Programme is one of the oldest MPH programs in Africa. The IPH, the MoH, and the Rockefeller Foundation assumed joint commitment to implement the two-year Master of Public Health (MPH) Degree Full-time Programme based on the concept of a Public Health Schools Without Walls (PHSWOW). This concept was based on the principle that 75% of the training occurs outside the walls of a classroom in district-based field training sites. The U.S. Centers for Disease Control and Prevention (U.S. CDC) provided technical support for the program, through Mark White and later Dr. Larry Marum as a technical Advisor. Other partners including WHO and UNFPA eventually provided additional support for student scholarship. The MPH Programme aims to produce practically oriented-public health specialists who possess the knowledge, skills, and professional attitudes required to assume leadership roles within Uganda's public health systems and meet the current and future challenges of public health. The school of public health has maintained the MPH program since its inception.

1994

1994

## PhD in Public Health by research

Makerere University School of Public Health offers a PhD in Public Health by research as a three-year program. The PhD program prepares students for careers in research, university teaching in graduate programs, policy analysis and development, and high-level public health positions.

1998

## Regional Centre for Quality of Health Care

The Regional Centre for Quality of Health Care (RCQHC), affiliated with Makerere University through the School of Public Health, was formed in 1999. Its mandate was to improve health care quality in East, Central, and Southern Africa through capacity building and promoting better patient-centered practices. RCQHC provided training, quality of care approaches and other programmatic interventions in four (4) focus technical areas of Child Health and Nutrition, Maternal and Reproductive Health, Infectious Diseases (HIV/AIDS, TB, and Malaria), and Non-Communicable Diseases.

2012

# The ResilientAfrica Network – RAN

To-date, the ResilientAfrica Network (RAN), a center of excellence in resilience research and innovations brings together 36 African universities. Researchers and innovators in these universities have continued to engage in multisectoral research while translating research findings into innovative solutions to build and strengthen resilience to recurrent livelihoods shocks and stresses affecting vulnerable communities. The areas of research and innovation include but are not limited to health, education, agriculture, environment, climate change, youth livelihoods, financial inclusion, and engineering.

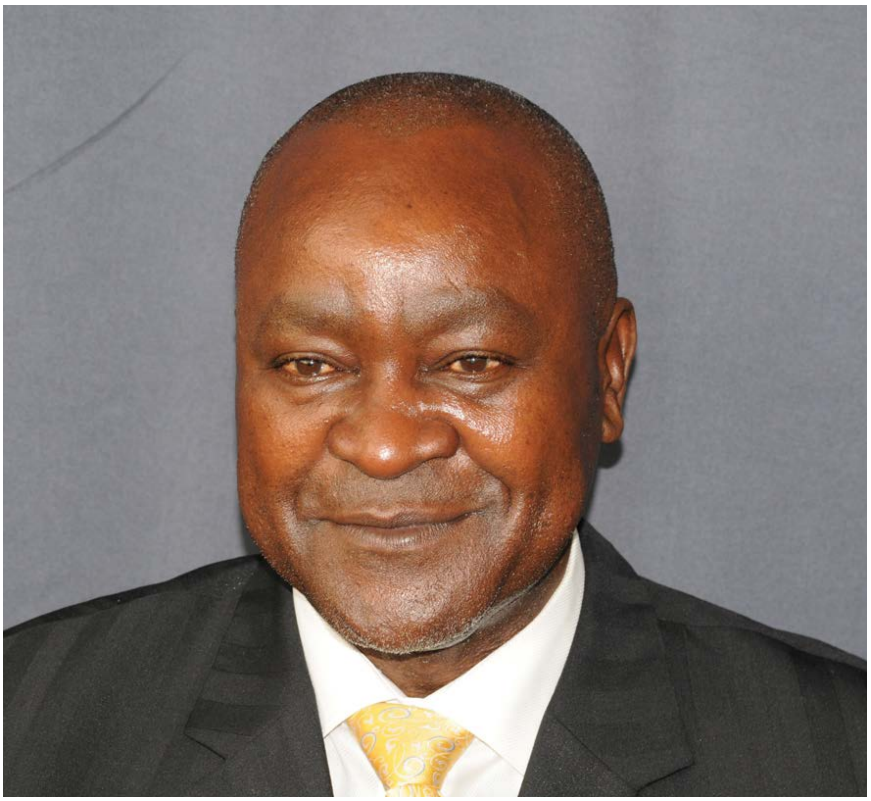
With support from USAID's Higher Education Solutions Network, RAN has incubated over 340 start ups and brought to scale at least 50 innovations across Africa. With support from USAID's Innovation Technology and Research Hub, RAN currently leads 8 studies on education system strengthening in Africa and the RAN team is working to set up the first Education System Resilience Observatory for Africa, with support from Infectious Diseases Research Collaboration (IDRC).

**MakSPH Research and capacity building-related landmarks**

**Achievements and Policy Influence**

| Sector | | Solution | Description of innovation |
|---|---|---|---|
| Tech. for climate risk mitigation | 1 | RootIO | Content agnostic, peer led portable radio-broadcast system |
| Scaling sustainable agriculture | 2 | Low-cost Solar Irrigation | Cheap irrigation pump to increase off season yields |
| | 3 | m-Omulimisa | An App to improve farmer access to agricultural extension services |
| | 4 | EazyAgric | An App to increase farmer access to agricultural inputs |
| Value chains | 5 | Fruiti-Cycle | Bicycle pedal powered cooler for cold transportation of perishable fruit |
| | 6 | Kungula | The Maize thresher that also winnows |
| | 7 | Low cost solar dryer | Rapid produce preservation using a low-cost solar dryer |
| Scaled health outcomes | 8 | Matibabu | Non-invasive POC malaria test that uses red light and the magnetic properties of haemozoin |
| | 9 | Weekebere | Hand-held personal fetal well-being sensor |
| | 10 | Safe Bangle | A bespoke bangle for emergency reporting of threats for SGBV in high risk urban slum areas |
| | 11 | BV Kit | Rapid Point of Care detection of Bacterial Vaginosis using a phone app and a vaginal sensor |
| | 12 | Epitent | A low cost, rapidly deployable tent for emergency humanitarian service delivery that self-cools in hot humid climates |
| | 13 | Bulamu | The low-cost medical ventilator |
| Agricultural markets 2.0 | 14 | Village Egg Bank: Eggs as a bankable currency | One-by-one bulking of eggs as a currency to link subsistence-based egg producers to the supermarkets |
| Diversify production | 15 | Nubricks | Expand a tested model for brick making using waste paper |
| WatSan for health | 16 | Pedal tap | Retrofittable no-touch foot-operated sanitation tap |

# Prof. Gilbert Bukenya on MakSPH's Strategic Role in Uganda's Public Health



*Prof. Gilbert Balibaseka Bukenya, Director, Institute of Public Health 1991 – 1994.*

My mother pushed me into medicine; I did it as my first degree at Makerere University between 1971 and 1976. At the time, most students preferred clinical medicine compared to preventive medicine, but somehow, I was attracted to the life of Prof. Kakande, who taught us epidemiology, and I loved epidemiology. He was a wonderful man, and may he rest in peace. Later on, I met Prof. Josephine Namboze. She was into maternal health, immunization, and so on. I loved the way she was passionate about disease prevention. It was also around this time when Kasangati Community-Based Preventive Medicine was set up.

Namboze left a lasting impression on me as a student. She took me under her wing, and together, we visited homes, conducted immunizations, and even carried out a small case-control study. It was during this time that I realized the power of disease prevention over disease management, sparking my interest in preventive medicine. The person who inspired me the most was Prof. Virginio Lachora Ongom, whose work in infectious disease epidemiology, including schistosomiasis and trypanosomiasis, deeply influenced my career path. His passion and dedication pushed me to pursue this field, which I am proud to have built my career around. Later, I connected with David Bradley, who was also focused on schistosomiasis. He became a mentor and played a significant role in shaping my education and professional journey, particularly after my first degree.

So, I left and went into practice after qualifying as a medical doctor. And, when I was in Bundibugyo, for example, I started this outreach program for immunization, because up there in the hills, the immunization coverage was very low. Let me emphasize one point: I was never taken up by family planning. And now I realize that maybe my hesitancy was very important. However, when I went to the UK, I did a diploma in public health at the Royal Institute of Public Health and Hygiene. And it is through that that I enjoyed very much environmental health, because the emphasis there was on the environment, excreta disposal systems, and sanitation. That is why I asked David Bradley for me to do a master's degree at the University of London, to re-emphasise my desire to do infectious disease and its relationship with sanitation. Eventually, I was in a faecal-oral disease, and at that time, it was diarrheal disease.

I came back and spent one year in Makerere; that was the worst time of my life; the guns were blowing, the institute was in chaos, and I decided to go back abroad. That was 1985. That was the liberation war. It was terrible. I used to live in Kololo, and you would walk to the Institute of Public Health and find people running away. It was impossible to educate. That's why I gave a lot of recognition to Prof. Namboze, and she persisted. She was our Head of Department, and she later went to WHO, but all her brain and mind, I think, were in the Institute of Public Health. So, when I came back in 1991, I found a shamble at the institute. They had asked me if we had a computer room; I went and visited a machine,

and it was a sorting machine. You punch cards, then you sort them, then you add, and that was the computer. I was very depressed having come from the University of Queensland, Department of Community Medicine, where everything was the computer you have today.

And then I come and find trouble. My decision then was that we must do collaborative research to beef up the way we manage the institute. And we did a lot of collaboration, and they were good at assisting us. WHO and UNICEF were the first partners that came on board to bring back the activity of simple research that could fundraise and bring equipment to the Institute. It worked. Eventually, I went back into Schistosomiasis, and we had a lot of funding from UNICEF; we did the Schistosomiasis in Eastern Uganda, the Kibimba rice scheme, and that helped us a lot. Dr. Aklilu Lemma, the man who was the Director of UNICEF here, was an Ethiopian who had discovered that a certain leaf, Phytolacca dodecandra, was very helpful in killing snails, and he got a Nobel Prize; he funded us a lot. We then started having vehicles because vehicles were important for our students. We started having computers, real computers, and then we started having a library. I don't know whether it is still there, on the ground floor.

I had a friend, Seth Barkley, who had worked in Uganda and later became Director of Health at the Rockefeller Foundation in the USA. He supported Makerere's training program, introducing the concept of 'public health schools without walls,' which emphasized training people in public health without large physical infrastructure. I became a consultant on this initiative, and we launched the program. It was transformative, as students were deployed to districts to organize data and monitor emerging diseases, enabling early detection of epidemics. With strong support from Seth Barkley and Bill Bertrand, the program thrived, securing significant funding and driving research. We replicated this model in Zimbabwe and Ghana. Unfortunately, when Seth left the Rockefeller Foundation for an HIV/AIDS organization, the momentum slowed. However, he helped me connect with Case Western Reserve University in Cleveland, Ohio, which further enriched my work and collaborations.

I travelled to Cleveland to establish a research collaboration on HIV/AIDS and initiate an exchange program for students. That trip became the foundation for what the School of Public Health is today. Alongside Prof. Roy Mugerwa, who was the Dean at the time, and the Vice Chancellor, Prof. George William Senteza Kajubi, we visited Case Western Reserve University in the middle of winter, around February. There, we signed a bilateral collaboration agreement, which I consider pivotal in reviving research at the school.

This partnership brought funding and opportunities for extensive research in tuberculosis and HIV/AIDS, revitalizing our academic environment. Case Western's involvement played a key role in transforming the school, and I believe the collaboration continues to this day.

I was later invited to Case Western Reserve University and the NIH to defend the TB-RU, which became one of the largest NIH-funded research programs during my career. This funding led to the establishment of Case Western's presence in Old Mulago and allowed me to deepen my work in HIV/AIDS research. It was then that I invited Dr. David Serwadda to join the institute, transitioning from internal medicine because he was famous for the paper he had written in The Lancet on HIV/AIDS. We also brought in Madam Mugerwa, who was then head of clinical medicine, to expand our team. This marked a significant growth for the institute; we broadened student exchange programs and welcomed external experts to teach. But it was at this time that I transitioned from leading the institute to serving as dean of the medical school.

I am aware Medical School is 100 years old this year. Let me be honest with you: Mulago Medical School is very famous throughout the world. When I went to the UK, I just registered myself as a practitioner; I gave in my papers from Makerere Medical School, and they would register me to start practicing. You didn't have to do any exams—nothing. That's how important that medical school was, and I think we must fight to go back to where we were, and I'm very glad that now the School of Public Health is doing exactly that.

I thank the new dynamism in the School of Public Health, especially in the way they have reshaped the administration. But reshaping the administration must be done in such a way that collaboration with other institutes in the world must continue. And when I see Africa, there are emerging diseases, which are mainly chronic, but there are still very many incidences of infections. So, we are lagging, in between infections and chronic diseases, and I think this intermediary we are in must be taken the same way.

Going forward, as a school, we must reemphasize cancer epidemiology. We must also continue being aware that we can have here an epidemic; the recent COVID-19 taught us a lesson. So, I would wish Makerere University School of Public Health to have a unit for epidemic monitoring infectious and non-infectious diseases, and also, the way I see this country, we have to have a unit for accident control. We have a lot of accidents on the roads. Then drug use. The School of Public Health has the responsibility to manage the public affairs of this country.

# Institutional Achievements

## Makerere University School of Public Health Centers for Disease Control HIV/AIDS Fellowship Program

The MakSPH, in conjunction with the Centres for Disease Control and Prevention (CDC), started implementing a leadership and management capacity-building program for HIV/AIDS, the MakSPH-CDC HIV/AIDS Fellowship Program. The program aimed to enhance program leadership and management capacity in Uganda through training individuals (Fellows). The program was later redesigned and transformed into the two-year Public Health Fellowship Program (PHFP) in 2015 and was implemented in collaboration with the MoH and the CDC as an initiative to develop a competent workforce by learning through service and responding to real public health problems in Uganda.

## Master of Health Services Research

To address some of the identified challenges faced by the health care systems in Uganda and beyond, the MakSPH in collaboration with the School of Medicine, Division of Health Services Research; Case Western Reserve University, Cleveland, Ohio developed a training program leading to the award of a Master of Health Services Research (MHSR).

**2001** | **2002** | **2006** | **2007** | **2009**

## Bachelor of Environmental Health Science

As soon as the IPH got autonomous status, the three-year Bachelor of Environmental Health Science degree program was introduced as the first undergraduate program hosted by the Institute.

The major aim of the BEHS is to prepare professionals in Environmental Health with the appropriate attitude, adequate skills, and scientific knowledge for managing all duties and technical procedures in the broad areas of health promotion, disease prevention and control, management, and the administration of public health in the community, research and training in the field of Environmental Health.

## Master of Public Health – Distance Education (MPH DE)

In 2005, the MPH DE program was established to provide a training opportunity for individuals who wished to remain at their workplaces while studying. This was the first distance graduate program at Makerere University, and Prof. Joseph Konde Lule is credited for initiating and leading the design of this program.

## Master of Public Health Nutrition (MPHN)

MakSPH, in collaboration with the MOH and partners, developed a training program leading to a Master of Public Health Nutrition to address identified human resources capacity needed to address public health nutritional challenges.

The graduates of this program have the skills to work as managers of programs within ministries and international nutrition agencies, as nutrition researchers in universities and research institutes, as well as lecturers in Universities. They are also competent to work as nutrition officers or as part of the district health management team (DHMT) and the nutrition teams that provide patient care in the health care facilities.

# MAKSPH TRAINING TIMELINES

## Post-Autonomous

### Health systems management fellowship program

MakSPH, in collaboration with the Institute of Tropical Medicine (ITM) - Antwerp Belgium, the Ministry of Health Uganda, and the Uganda Public Health Specialists Association, implements the Health systems management fellowship program. The program aimed to strengthen senior managers' capacity and specific competencies working in health systems. This work-based fellowship creates the opportunity for professional development and a sense of professionalism.

### Master in Health Informatics (MHI)

MakSPH collaborates with the College of Computing and Information Sciences -Makerere, most especially the School of Computing and Informatics Technology, to implement a Master's degree in Health Informatics (MHI) as a full-time program. The program is designed for individuals who desire to be trained to identify constraints in health information flow and design innovative automated systems to solve them in the shortest time possible to aid timely decision-making.

2012 | 2014 | 2016 | 2018 | 2019

### Master of Public Health Disaster Management (MPHDM)

Given the high incidence of a variety of disasters and yet the capacity to minimize risks and effectively respond to, manage and mitigate the effects of disasters remains limited in Uganda and several low-income countries the MakSPH worked with the World Health Organisation Africa Region (WHO AFRO) to set up the 22 month Master of Public Health Disaster Management. The design and establishment of the program were also informed by the experiences from the two-week short course called Public Health in Complex Emergencies (PHCE) that MakSPH had been running for years. It is an international course that targets participants from UN agencies, NGOs, Ministries of Health, and districts affected by emergencies.

### Master of Biostatistics

MakSPH started the master of biostatistics program to train and produce graduates with practical skills and the ability to meet local and regional biostatistics demands. Specifically, the program strives to 1) To contribute toward the creation of a— critical mass of professional Biostatisticians to meet the increasing demand, 2) To expand the capacity for teaching Biostatistics in the tertiary academic institutions in the country and the region, and 3)To strengthen capacity for Biostatistics analysis in research and academic institutions, industry, and programs in both government and non-government institutions

### Master of Public Health Monitoring and Evaluation (MPHME)

MakSPH established the MPHME program to respond to the increasing demand for governments and organizations to demonstrate results towards the achievement of development goals, leading to a surge in demand for skilled Monitoring & Evaluation (M&E) practitioners. The program builds the capacity of both upcoming and already existing M&E paractitioners, managers, planners, and professionals from diverse development sectors to build a critical mass of individuals with the technical expertise to institute functional M&E systems at policy and operational levels in Uganda and the Sub-Saharan region.

# Public Health administrative timelines - Post-autonomous phase

## 2001 — IPH becomes autonomous

The Institute of Public Health, headed by Prof. Fred Wabwire-Mangen as its director, was granted autonomous status and thus became independent from the faculty of medicine. The attainment of the autonomous status of IPH was accompanied by the establishment of four departments, including departments of 1) Epidemiology and Biostatistics (with Dr. Joseph Konde Lule as the first head of the department), 2) Health Policy, Planning, and Management (with Dr. George William Pariyo as the first head of the department), 3) Community Health (with Dr. Christine Zirabamuzaale as the first department head) and 4) Disease Control and Environmental Health (with Dr. David M. Serwadda as the first head of department).

## 2004 — The Iganga-Mayuge Health and Demographic Surveillance (now Makerere Centre for Health & Population Research, MUCHAP) by Makerere University in collaboration with Karolinska Institutet and Iganga and Mayuge districts in Eastern Uganda, with funding from the Swedish International Development Cooperation (SIDA).

Operations started in August 2004 with a baseline census. The site aimed to serve as a training site and platform for graduate student and faculty operations and epidemiological research to inform policy and practice. The center has facilitated and conducted several groundbreaking research studies in various areas, including but not limited to maternal, newborn, and child health and non-communicable diseases (NCDs). These have informed policy and practice at different levels in the country and beyond.

## 2007 — IPH elevated to MakSPH

The institute of public health, then headed by Prof. David Serwadda, was elevated to a School of Public Health and later made a constituent school of the Makerere University College of Health Sciences.

## 2009 — Establishment of Finance Management Unit (FMU)

The accounting unit was officially transformed into a Financial Management Unit in 2009 with **CPA Elizabeth Nambi**, as the first and current head.

## Provision of statistical support to the different research teams in the medical school and capacity building in the region

In the 1960s and 1970s, through its epidemiology and biostatistics unit, which had been set up and mainly run by Mr. Stephen Lwanga, a statistician, the department of preventive medicine provided statistical support to all other departments doing research at Makerere university medical school. The department thus strengthened the quality of research conducted in the medical school and ultimately positively impacted the community through different research disciplines in the medical school. The WHO supported the statistics unit to promote the teaching of statistics in the medical schools in the African region. This increased the influence of the department beyond the borders of Uganda.

## The schistosomiasis, malaria, and filariasis research

The IPH, through the leadership of Dr. Virginio Lachara Ongom a Professor of parasitology, as the lead researcher and at some point as its director in the 1970s, conducted groundbreaking research into bilharzia, malaria, and filariasis. This research notably documented the epidemiology and consequences of bilharzia infection. In particular, it demonstrated the burden of Schistosomiasis disease in Uganda and its effect on childhood health. This work contributed to what later became the national laboratory (under Makerere University Epidemiology Unit), and hosted the national laboratory, which later moved to MoH.

**1959** | **1960s - 1970s** | **1960s–1990s** | **1970s** | **Early 1980s**

## The Kasangati Health community surveillance and health promotion

The department of preventive medicine, now MakSPH led the design and implementation of community health surveillance and promotion intervention through Kasangati Health Center since its establishment in 1959. This was mainly through the leadership of Professor John Francis Bennett and later Professor Josephine Namboze as the heads of Kasangati Health Center. This model of community surveillance and intervention (at Kasangati HC) demonstrated a dramatic drop in infant mortality and a high impact on training. It was the genesis of primary health care.

## Mwana mugimu nutrition center

The institute of public health impacted the communities through the Mwana mugimu nutrition center, which was co-founded and later headed by Prof. John Kakitahi, a faculty member and at one point the director of the IPH. It promoted the management of malnutrition in children. This was replicated all over the country by establishing similar nutritional management sites. Because of its contribution to the population, Mwana mugimu was recognized by Rotary International as the best nutritional unit in the region (Africa) and earned a visit by Anne Elizabeth Alice Louise, Princess Royal.

## The discovery of AIDS/ HIV in Uganda

The institute of public health in the early 1980s contributed to the discovery of HIV (slim disease) in Uganda. In particular, Professor David Serwadda, a faculty member of IPH was one of the earliest physicians in Uganda to recognize and describe the new disease, HIV/ AIDS, in Uganda. This informed the HIV/AIDS response since it was discovered in Uganda.

# MakSPH Research and capacity building-related landmarks

## Achievements and Policy Influence

### Contribution to the health workforce development

MakSPH has made a tremendous contribution to the public health workforce development through its academic programs both undergraduate and postgraduate. For example, since its inception, the MPH program has registered over 700 graduates. Most graduates work in Uganda, while others work in the region (Africa) and beyond. They hold different positions through which they contribute to improving public health. These include but are not limited to District Health Officers, Health Program Managers, Directors of Health Programs, Health Program Coordinators, Epidemiologists, Health Program Advisors, Research Fellows, Lecturers, Professors, Health Program and Project Consultants, Public Health Specialists, Senior Medical Officers, Monitoring and Evaluation Managers, Commissioners of Health Services and Chiefs of Party. Similarly, other training programs at the MakSPH have produced graduates who occupy varying positions through which they contribute to public health locally, nationally, and beyond.

### Uganda Newborn Survival Study (UNEST)

The intervention significantly improved essential newborn care practices such as immediate and exclusive breastfeeding, Skin-to-skin care immediately after birth, and cord-cutting with a clean instrument were marginally high; skilled attendance at delivery increased. The study informed an integrated maternal newborn care package.

**1994 to present** | **2002-to date** | **2007** | **2007- 2012**

### The MakSPH-CDC HIV/AIDS Program and Public Health Fellowship Program

Since the year 2002, MakSPH has been working in collaboration with partners, including the US CDC, to strengthen Uganda's MOH capacity to execute its essential public health functions through the provision of technical assistance, public health workforce development, and institutional capacity-building in the republic of Uganda. This has been through the implementation of the MakSPH-CDC HIV/AIDS Program and the Public Health Fellowship Program. Over 200 professionals were trained in both programs. This has resulted in an increased number of health workers managing HIV/AIDS programs and an increased number of field epidemiologists responding to public health emergencies. Additionally, through the medium-term (8-month) Fellowships in monitoring and evaluation and continuous quality improvement, over 1000 professionals were trained.

### Safe male medical circumcision

Through the Rakai health sciences program, MakSPH, specifically Professor David Serwadda and a team of other researchers, conducted one of the landmark randomized controlled trials that demonstrated the effectiveness of male medical circumcision (MC) in preventing HIV acquisition in men who are in heterosexual relationships. Consequently, the WHO and the Joint United Nations Programme on HIV/AIDS (UNAIDS) recommended that MC be added as an important strategy for the prevention of heterosexually acquired HIV infection in men, particularly in thirteen eastern and southern African countries (Uganda inclusive) with hyperendemic or generalized HIV epidemics and low MC prevalence. Thus, the respective countries adopted and revised or developed HIV prevention policies incorporating MC.

# MakSPH Research and capacity building-related landmarks

## Achievements and Policy Influence

### WHO–MakSPH memorandum of understanding (MOU) to implement capacity building and operational research and to provide technical support to MOH in the development of national policies and guidelines:

Building on the longstanding relationship with the WHO, through the support of the MPH program and several joint projects, MakSPH and WHO signed an MOU in 2018. Through this MOU, MakSPH and WHO have implemented over 50 joint projects to support the Uganda MOH and other partners. Notable among these are: the Mid-Term Review of the Health Sector Development Plan (HSDP) 2015/16 – 2019/20, the health care waste management study, the regulatory impact assessment for the proposed eHealth policy for Uganda, 2019, a cross programmatic efficiency analysis for 5 health programs: HIV/AIDS, TB, Malaria, RMNCAH and Immunization in Uganda, and estimation of the potential numbers of target populations that will be prioritized for access to COVID-19 vaccines in Uganda.

### Safe Deliveries Study

The study demonstrated that vouchers could improve access to maternal health services by incentivizing health workers in public and private facilities to perform better. Experiences and results from the survey contributed to guidelines included within the National Results-Based framework for the country.

**2007 to date** | **2008 to present** | **2009- 2011** | **2011 to date**

### The Crane survey

With support from the US CDC, the Crane Survey, which is bio-behavioral HIV-related surveillance for key and priority populations in Uganda, has conducted over 14 surveys and a range of other interventions, for example, those addressing Sexual and Gender-Based Violence (SGBV) for Women Key Populations and vulnerable groups. The surveys and interventions informed policy and practice, particularly in Uganda. Notably, the surveys generated surveillance information on the: size estimation of all groups and confirmation of selected key populations, HIV and other sexually transmitted infections burden, risk behaviors, and service uptake among key and priority populations that supported and continue to support HIV programming and policy in Uganda.

### The Centre for Tobacco Control in Africa (CTCA)

The core mandate of CTCA is to enhance African governments' capacity to formulate and implement Tobacco Control programs. Its goal is to reduce the production and consumption of tobacco by supporting governments in implementing evidence-based tobacco control strategies in Africa. Thus, CTCA collaborates with ministries of health in several African partner countries to build their capacity to implement tobacco control through research, training, policy development, and policy implementation. It supported developing, revising, and passing relevant tobacco control policies and legislation in several participating countries. These have been assented to and are operational in some of the supported countries like Uganda, Kenya, South Africa, and The Gambia, while it is ongoing work in other supported countries.

In Uganda, the CTCA provided technical assistance/scientific evidence in the British-American Tobacco (BAT) legal suit vs. Uganda. Uganda emerged victorious against BAT. This was a major milestone in tobacco control in Uganda.

## Nottingham Trent University – Makerere University (NTU – Mak) partnership

2011-2017

A partnership that has existed since 2012 and under which many community service-related and academic projects have been implemented and have positively impacted the target populations in Wakiso district. These resulted in knowledge exchange and student and staff research capacity building at both Makerere University and NTU. Following the first Community Health Worker (CHWs) symposium that was held in Uganda, these conferences have been institutionalized by Health Systems Global. They are now held every two years, with the second held in Bangladesh in 2019, third held in Liberia in 2023 and fourth to be held in Thailand in 2025. The interventions also led to improved antimicrobial stewardship practices at Entebbe Regional Referral Hospital, lower-level health facilities, and among CHWs, and contributed to the Uganda Antimicrobial Resistance National Action Plan through promoting public awareness, improving infection prevention and control, enhanced surveillance, research and innovation.

## MANIFEST study

2013-2015

MANIFEST was a 3-year (2013-2015) study involving the Makerere University School of Public Health and the districts of Kamuli, Pallisa, and Kibuku. It involved the use of a participatory action research approach at the district level. In 2012, the study team engaged various stakeholders in designing a sustainable and scalable intervention aimed at improving maternal and newborn health outcomes. The design had three major components, with district health teams leading their implementation. The components included: Community mobilization and sensitization, savings and transport, and health systems strengthening. The study changed the communities perception of maternal health and birth preparedness and opened doors for multisectoral involvement in birth preparedness and promoting the safety of mothers during delivery.

## Community and District Empowerment for Scale-up (CODES) project

2012 to date

With support from Unicef, this led to significant net increases in the treatment of Malaria, Pneumonia, Diarrhea, Improved stool disposal, Coverage rates for immunization and vitamin A consumption, improved reporting through DHIS 2, and a decrease in health worker absenteeism. It also supported the development of evidence-based work plans in 13 districts, thus increasing funding for child health. It led to an improved change in the conduct of health workers at government health facilities and community-led construction of Health facilities, as well as increased male involvement in antenatal care.

## Global Fund-MakSPH-MOH-TASO Operations research projects

2012 to date

For the past ten years, MakSPH has implemented multiple operations research projects with support from the Global Fund through the MOH and The AIDS Support organization. Several of these studies have directly informed MOH and partner actions through improvements in policy and implementation of programs. Notable among these are the: national TB prevalence survey (2014 – 2015), key populations studies, surveys among adolescent girls and young women, and collaboration with the Ministry of Education and Ministry Gender to develop the second chance guidelines for girls who drop out of school due to pregnancy, evaluation of the national partner notification and testing and HIV-self testing programs, among others.

**Specific examples of such studies include:**

The National TB Prevalence Survey 2014 – 2015 measured the prevalence of bacteriologically confirmed pulmonary TB (PTB) in Uganda's population aged >15 years. As a result, the TB National Strategic Plan was revised based on the findings of this study. The findings also informed the Global Fund proposal development for 2017.

In 2015 MakSPH conducted a rapid assessment of comprehensive condom programming that determined the successes and gaps in implementing the national condom strategy. It revealed the low demand, access to condoms, and condom self-efficacy skills. There was also weak monitoring of program implementation. The study findings informed the 2017 Global Fund country proposal for Uganda and the drafting of the comprehensive condom strategy 2017-2021 for Uganda. In addition, the ministry of health has drafted a 5-year Operational Costed Plan for condom use promotion.

# MakSPH Research and capacity building-related landmarks

## Achievements and Policy Influence

### Knowledge Translation Network Africa (KTNET)

The project aimed at building the capacity of Researchers in nine African countries to synthesize evidence and package it and engage in and enhance uptake of health systems research in their countries. Work done by the project contributed to the adoption of guidelines on prescribing tests for mothers during ANC, and these were developed and disseminated across Senegal by the research team in Senegal with support from KTNET. Products developed by researchers included newspaper articles, blogs, policy briefs, and infographics.

### Sub-national (regional and district) health manager capacity building

MakSPH implemented a project to build the capacity of regional and district health managers in governance, leadership and management to improve health service delivery at sub-national levels. Overall, 133 managers were trained and implemented 50 projects to improve service delivery at district and regional levels. Many of the trained managers have advanced to senior positions within the Ministry of Health and are driving programming in various areas.

**2013 -2016** | **2014-2017** | **2015- 2017** | **2015- 2020** | **2015 to date**

### Maternal Newborn Scale-up project (MANe SCALE)

MakSPH co-designed and co-implements a locally designed package of interventions to improve the quality of care in hospitals in the Busoga region. The project institutionalized Newborn Care spaces in maternity units in all six participating hospitals by establishing kangaroo mother care areas, resuscitation corners, and routine maternal and perinatal death reviews (MPDRs). These improvements were also associated with reduced maternal and neonatal deaths.

### Supporting Policy Engagement for Evidence-based Decisions for Universal Health Coverage in Uganda (SPEED)

This project aimed at generating evidence that can inform policy decisions geared at aiding Uganda to achieve UHC. Work done by the project contributed to the development of the UHC roadmap for Uganda.

### Monitoring and Evaluation Technical Support (METS) Program

MakSPH, through the METS Program with support from the US CDC is implementing several interventions to strengthen the Government of Uganda's capacity for regionally centered and district-implemented HIV and TB programming through health information systems, case-based surveillance, monitoring, evaluation, and quality improvement. The MakSPH-METS program is implemented through three program areas, namely: a) Health Systems Strengthening (HSS); b) Disease Surveillance and Response (DSR); and c) Data Science and Informatics (DSI).

## HIV self-testing study

MakSPH in collaboration of the University of South Carolina implemented an HIV self-testing intervention for partners of women attending antenatal care (ANC) in Central Uganda to promote uptake and linkage to care post-test. The study demonstrated an improved (74.1%) male partner uptake of HIV tested in the intervention arm compared to 36% in the control arm. Similarly, linkage to care was higher (70%) in the intervention group than in the control group (21%). Accordingly, the ministry of health made an addendum to the Uganda national HIV testing policy to include HIV self- testing as a testing strategy in Uganda. HIV self-testing was rolled out countrywide and is currently offered at HIV clinics in all public facilities in Uganda.

## Safer Conception studies in collaboration with RAND Corporation

A cluster Randomized Controlled Trial evaluating two implementation approaches of integrating safer conception counseling to transform HIV Family Planning Services demonstrated that the provision of safer conception counseling results in the greater and more accurate use of the appropriate reproductive methods among HIV serodiscordant couples than usual care. Consequently, the provision of safer conception counseling services and safer conception methods have been integrated into the MoH guidelines on routine HIV care in Uganda. This integration enables HIV care providers to regularly discuss childbearing needs with people living with HIV and offer contraception to those who may want to defer or delay pregnancy or safer conception services to those who desire to have children.

2016-2019 | 2016-2019 | 2016-2022 | 2018-2020

## Preterm birth initiative (PTBi)

Done in six hospitals of Busoga; the initiative involved conducting data strengthening activities, building the capacity of providers in emergency newborn and obstetric care using PRONTO simulation and team training, and conducting a quality improvement collaborative. Using trail design which the study team published in the Lancet global, the study shows that the interventions led to a drop in fresh stillbirth and neonatal mortality among low-birthweight and preterm babies.

## Supporting Uganda's response to the HIV/AIDS and Tuberculosis Reduction strategy: Adolescent Girls and Young Women (AGYW) Baseline, Midline, and End line Survey Activities

This study involved surveying d 8,236 AGYW (50% of them were in school) to determine HIV, sexual and reproductive health, and gender-based violence status among 10-24 year-old AGYW in 20 priority districts across Uganda. Girls were also tested for HIV and syphilis.

Survey findings informed the design of: A social and behavior change communication (SBCC) strategy to address HIV and pregnancy risk behavior among in- and out-of-school AGYW aged 10-24 years; and Information, education, and communication (IEC) print materials, videos, and radio messages to address HIV and pregnancy risk behaviors to reduce teenage pregnancies and new HIV infections, and keep girls in school. The findings also guided the development of the second-chance education (SCE) guidelines for non-formal education to support the enrolment of out-of-school AGYW in non-formal and skills-based training institutions to equip them with skills necessary to improve their socio-economic independence and reduce their vulnerability to HIV, other STIs and unwanted pregnancies.

# MakSPH Research and capacity building-related landmarks

## Achievements and Policy Influence

### USAID–Funded Research for Scalable Solutions (R4S)

In collaboration with the Ministry of Health (MOH), MakSPH together with FHI360 and partners through the R4S Project, developed the Uganda family planning research and learning agenda (FPRLA) 2020–2025. MOH widely disseminated the FP RLA through the Ministry's knowledge management portal. It is also integrated into the new FP costed Implementation Plan (CIP) II to encourage ongoing research and use of evidence in FP policy and programming.

**2019 -2022**

### Application of the district health system progression model

With financial support from United Nations Children's Fund (UNICEF), MakSPH implemented Operations Research (OR) for Strengthening District Health System Capacity for Quality Service Delivery: Application of the Progression Model. The project findings revealed improved district health systems capacity and quality of health service delivery. This progression model has been adopted by the ministry of health for application at the national level to strengthen district health systems for quality health service delivery.

**2019- 2024**

**2020-2022**

### Assessment of the COVID–19 Response in Africa

MakSPH in collaboration with partners and funding from Bill and Melinda Gates Foundation, conducted an assessment of the COVID-19 Response in Central, Eastern, and Western Africa. The findings revealed a disruption of access to essential healthcare services during the early response to the COVID-19 pandemic in Uganda. Thus, Uganda implemented various interventions to promote continuity of access to essential health services during the COVID-19 response. The findings also showed that when implemented in combination, public health and social measures such as movement restrictions, hand hygiene, and mask-wearing positively impacted reducing COVID-19 transmission. The study informed the revision of the guidelines on continuity of access to care during the COVID-19 pandemic. Specific modifications included the establishment of regional committees for coordinating efforts to maintain essential health services and expanding the list of critical health services to include mental health and other neglected tropical diseases. Findings also informed the adoption of rapid test kits into the testing algorithm.

# 2.3 Landmark projects and networks coordinated by MakSPH at the regional levels—within Africa

### Partnership to Enhance Technical Support for Analytical Capacity and Data Use (PERSUADE I and II), East and Southern Africa - August 2018 to December 2020 (PERSUADE I) and August 2021 to December 2023 (PERSUADE II)

With financial support from the Global Fund, MakSPH coordinates this partnership that aims to enhance the capacity of the ministries of health in thirteen countries to analyze and use their routinely collected program data for HIV, Tuberculosis (TB), and malaria to inform improvements in programming. In addition, the project studied the impact of the COVID-19 pandemic on the programming of the three diseases in partner countries. MakSPH collaborates with 13 universities and ministries of health in the 13 countries to achieve the project objectives.

### COVID-19: Assessment of the COVID-19 Response in Eastern, Central, and Western Africa – September 2020 to June 2022

With funding from Bill and Melinda Gates Foundation and Gates Ventures, MakSPH hosts and coordinates the research project that assesses and curates the (i) response to the COVID-19 pandemic in Africa and the outcomes in terms of COVID-19 control and (ii) continuity of essential non-COVID-19 services within the COVID-19 period to inform the COVID-19 response and recovery as well as health system resilience to future disease outbreaks in four Eastern, Central, and Western Africa countries. The findings from this study have been widely shared and utilized to inform development and/or revision of national and regional level guidelines for Covid-19 testing and surveillance, mentainance of essential health services during Covid-19 and future pandemics as well as the rollout of Covid-19 vaccination across the participating countries.

### African Leadership and Management Training for Malaria Eradication (ALAMINE) – September 2021 to August 2023:

MakSPH hosts and coordinates this project that builds capacity for malaria elimination in seven high-endemic countries in sub-Saharan Africa. MakSPH collaborates with six other universities in the respective countries to achieve this aim. The Bill and Melinda Gates Foundation funds the project.

### Campaign worker digital payment evidence building – October 2021 to July 2024:

This project aims to enhance and inform national, regional, and global efforts to digitize payments for health workers by fostering and supporting evidence-based and evidence-driven decision-making in six countries in Sub-Saharan Africa. Bill and Melinda Gates Foundation funds the project.

### Resilient Africa Network (RAN) – 2012 to date

A USAID-funded partnership, RAN, MakSPH collaborates with over thirteen universities in thirteen countries all over Africa to apply science and technology to strengthen the resilience of African communities against natural and man-made stresses.

### The Centre for Tobacco Control in Africa (CTCA) - July 2011 to date

This is hosted and coordinated at MakSPH, the Centre works with Ministries of Health in six African partner countries to build their capacity to implement tobacco control through research, training, policy development, and policy implementation. The Bill and Melinda Gates Foundation (Through African Capacity Building Foundation – ACBF) provides financial support to CTCA. CTCA has made a tremendous contribution to advancing tobacco control legislation and operationalization of the Acts in several countries. CTCA supported the Uganda tobacco control regulations to operationalise the Uganda Tobacco Control Act 2015, supported the Gambia tobacco control regulations to operationalise the Gambia Tobacco Control Act 2016, development of the Tobacco Control Research Agenda for Africa, the National Tobacco Control Program for The Gambia, National Tobacco Control Program for Niger, the National Tobacco Control Program for Burkina Faso, and Tobacco control position papers for 7 countries (Uganda, Kenya, Niger, The Gambia, Burkina Faso, Zambia and Benin), among other guidance and plans.

### Supporting Policy Engagements for Evidence-Based Decisions (SPEED) for Universal Health Coverage for Uganda – March 2015 to February 2020:

The SPEED project broadly addressed universal health coverage (UHC) and systems resilience in Uganda. The initiative was implemented by a partnership of institutions that specialized in health policy and systems research, economic policy analyses, social science research, national planning, and advocacy for health rights. Its objective was to strengthen the capacity for policy analysis, advice, and influence at MakSPH and partner institutions and to accelerate progress towards universal health coverage and health systems resilience. Partner countries and institutions included Uganda (MakSPH), Belgium (Institute of Tropical Medicine Antwerp), and South Africa (Human Science Research Council). The European Union provided funding for the project.

# PAST AND PRESENT LEADERSHIP

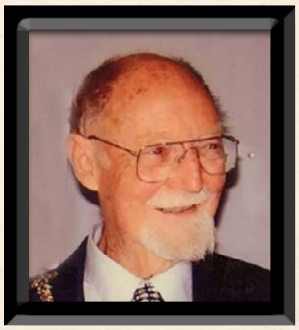
Makerere University School of Public Health has had several leaders who have successfully played the school's leadership role since its origin. The titles of the leaders have also changed over time, particularly with the evolution of the school's administrative structure and autonomy. In particular, the designation has changed from Head of Department for the department of preventive medicine to the Director for the institute of public health and then to the Dean of the school. Each of these leaders made important and varied contributions during their respective tenures across the pre-autonomous and post-autonomous phases of MakSPH growth and development. The MakSPH leadership is presented below under the pre-autonomous (table 5) and post-autonomous (table 6) phases of MakSPH.

## Pre-autonomous phase

### Prof. George W. Gale

**Head, Department of preventive medicine (1957 –1962)**

Prof. Gale was the first head of the department of preventive medicine. He at some point at the beginning of the department singlehandedly ran/ operated it before other staff members joined.



### Prof. John Francis Bennett

**Head, Department of preventive medicine (1962 – 1967)**

Professor Bennet was the second head of the department of preventive medicine. Born in Sesheke, Barotseland (now Zambia), Professor Francis John Bennett devoted his life to the improvement of public health in Uganda and throughout Africa. He is regarded as the "Father of Primary Health Care in Africa" [5]. During his tenure as a professor of community medicine and the head of the department of preventive medicine at Makerere University, the department made tremendous research and community service contribution to primary health care, particularly in maternal and child health.

### Prof. Suleiman Jabir Farsey

**Director, Institute of Public Health (the late 1960s – 1975)**

Under Prof. Suleiman Jabir Farsey as the head of the department, the department of preventive medicine occupied its newly constructed four-story home in new Mulago in 1971 (the present MakSPH building). The department of preventive medicine also transformed into the Institute of Public Health under his leadership. He, therefore, became the first head of the Institute of Public Health. He significantly promoted sexually transmitted diseases research and service delivery by the institute.

## Prof. Virginio Lachara Ongom

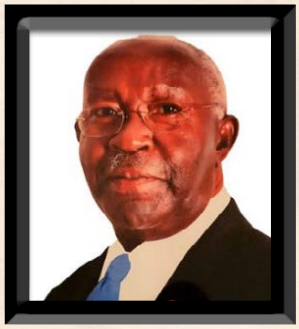
### Director, Institute of Public Health (1975 – 1979)

A public health researcher and an army Captain, Prof. Ongom was the first Ugandan head of the Institute of Public Health. He made a significant contribution in leading and expanding the groundbreaking research on schistosomiasis, malaria, and filariasis research.

## Prof. Josephine Namboze

### Director, Institute of Public Health (1979 – 1988)

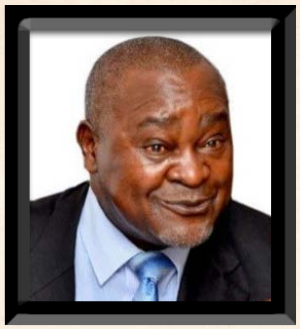
A Professor of public health and the first female medical doctor in East Africa, Dr. Josephine Namboze rose in the ranks to become the first woman to head the IPH. During her tenure as the Director of IPH, she is credited for laying a strong foundation for MakSPH in reproductive health, particularly family planning research and service delivery. Before joining the Makerere University department of preventive medicine, she worked as a medical officer at Kasangati health center and eventually headed the health center. She eventually transitioned to the WHO Afro region and served as the WHO Country Representative in Botswana.



## Prof. John Tuhe Kakitahi

### Director, Institute of Public Health (1988 – 1991)

Before heading the institute of public health, Prof. Kakitahi had established and headed Mwana Mugimu Nutrition Center in Mulago hospital in the 1990s. Mwanamujimu was pivotal in treating kwashiorkor with the support of Rotary International. He later set up other nutritional units/ sites all over Uganda. After his tenure as the Director of IPH, Prof. Kakitahi continued to teach public health nutrition with an emphasis on community-based extension work. In 2008, he served as Deputy Principal of the Makerere University College of Health Sciences.



## Prof. Gilbert Balibaseka Bukenya

### Director, Institute of Public Health (1991 – 1994)

Prof. Gilbert Bukenya headed the IPH from 1991 to 1994. After his tenure as the Director of IPH, in 2005, Prof. Bukenya's work on HIV/AIDS was recognized and earned him an honorary Doctor of Science (DSc.) by the Case Western Reserve University, Cleveland Ohio. During his tenure as the director of IPH, the MPH full-time program based on the concept of PHSWOW, the first community-based MPH program in Uganda and the region was established. The MPH program has remained one of the flagship programs of MakSPH to date. After his tenure at the institute, he became the Dean of the Faculty of Medicine before moving into a political career.

# Post-autonomous phase

## Prof. Fred Wabwire-Mangen

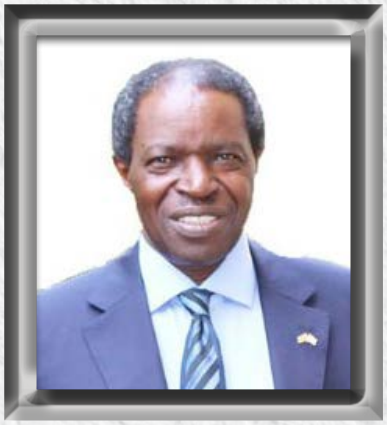
**Director, Institute of Public Health (1995 –2000) – Pre-autonomous) and 2001 – 2003) – post-autonomous**

An Associate Professor of Infectious Disease Epidemiology, Dr. Fred Wabwire-Mangen headed the IPH as a director from 1995 -2003. Under Dr. Fred Wabwire-Mangen, the IPH became autonomous from the Faculty of Medicine, a statuss which was formally issued in 2001. Dr. Wabwire-Mangen was interested in developing innovative experiential learning methods for adult education in Public Health. In 1994, before he assumed leadership of the IPH and during his leadership as the Director, he was key in developing the innovative experience-based MPH Training curriculum using the PHSWOW model. He also led the development of the Masters in Health Services Research curriculum in 2007. Both programs have produced graduates deployed in positions of Public Health leadership in Uganda and globally. He contributed significantly to expanding the teaching space at the current MakSPH building at Mulago hospital.

## Prof. David Musoke Serwadda

**Director of IPH (2003–2007), and Dean of MakSPH (2007–2009)**

A professor of infectious diseases and the first head of the department of disease control and environmental, Dr. David Serwadda was the head of MakSPH from 2003 to 2009. Under Professor David Serwadda, the IPH was elevated to a School in 2007, and he was promoted from the director of IPH to the first Dean of MakSPH. He is a holder of a Bachelor of Medicine and Surgery degree (1982) from Makerere University; Masters in Metabolic Medicine (1986) from the University of Newcastle upon Tyne, Masters in Internal Medicine (1990) from Makerere University, Masters in Public health (1991) and an honorary doctorate ( 2011) both from Johns Hopkins University. Professor Serwadda, has worked in HIV-related research and prevention since the mid-1980s and was among the first to report the occurrence of AIDS in Uganda. He founded the Rakai Health Sciences Program (RHSP), which is a collaborative biomedical research and service delivery organization that strives to improve the quality of life of the local population through a combination of community-based research, curative services, and prevention strategies in the districts of South-central Uganda. Within MakSPH, Prof. Serwadda founded and led the CDC Fellowship program and the Enhanced surveillance program with funding from the US CDC, among other key networks and projects. Prof. Serwadda made a significant contribution to further expanding the space for the School to accommodate the expanded portfolio, by raising resources for the Fellowship program office and teaching space at the MakSPH Kololo Annex.



## Prof. William Bazeyo

**Dean, MakSPH (2009 – 2017)**

A Medical Doctor and Professor of Occupational Medicine, Prof. William Bazeyo was the Dean of MakPH 2009 – 2017. Under Prof. Bazeyo, MakSPH widened partnerships with key stakeholders. These collaborations included widening the funding base leading to an increased number of grants at MakSPH. He supported several staff to undertake Ph.D. training. Under his leadership, MakSPH conceived the idea of constructing a new home (building) and initiated resource mobilization. He also further expanded the space for the School through the construction of the Resilient Africa Network (RAN) Building at the MakSPH Kololo Annex. He has served as the Director of the Centre for Tobacco Control in Africa to date. The center supports government efforts to build and sustain the capacity to regulate tobacco in Africa. Prof. Bazeyo also serves as the Chief of Party at RAN, composed of 20 universities in 16 African countries and whose mission is to strengthen the resilience of communities through education and innovative technologies and approaches. From September 2017 until October 2020, he served as the deputy vice-chancellor in charge of finance and administration at Makerere University.

## Prof. Rhoda Wanyenze

**Dean, MakSPH (2017 – present)**

A medical doctor with a master of public health from Makerere University and a Ph.D. in Public Health from the University of Antwerp in Belgium, Dr. Wanyenze is a professor in the disease control and environmental health department who serves as the current Dean of MakSPH since 2017. Prior to joining MakSPH she served as the Program Manager for the Mulago-Mbarara Teaching hospitals joint AIDS program. She is passionate about and and has promoted improvement in the quality of teaching and learning at MakSPH. Under Professor Wanyenze's leadership, the School has expanded and consolidated a wide range of partnerships with key stakeholders, including a formal MOU with WHO, formal partnerships with UNICEF and the Word Bank, and expanded the portfolio of regional grants that are coordinated by the School within Africa, among others. Under her tenure, MakSPH significantly increased resource mobilization in research grants and construction and initiated the construction of its new home for the School, located at the Makerere University main campus. Dr. Wanyenze has provided leadership for several large networks and grants within MakSPH with funding from CDC, the Covid-19 response assessment in Africa with funding from the Bill and Melinda Gates Foundation and Gates Ventures, and the PERsUADE initiative with funding from the Global Fund, among others.

# Evolution of academic departments, and their leadership

In 2001, the Institute of Public Health was granted semi-autonomous status within the Faculty of Medicine. It started with four departments: Epidemiology and Biostatistics (EPIBIO), Health Policy Planning and Management (HPPM), Community Health and Behavioural Sciences (CHBS) and Disease Control and Environmental Health (DCEH). In July 2007, the Institute of Public Health changed its name and status to "Makerere University School of Public Health". These are the heads of departments over the years

## Health Policy Planning and Management (HPPM)

**Dr Sebastian O. Baine**
2001-2003
& 2008-2011

**Prof. George William Pariyo**
2003—2007

**Professor Elizeus Rutebemberwa**
2011-2014

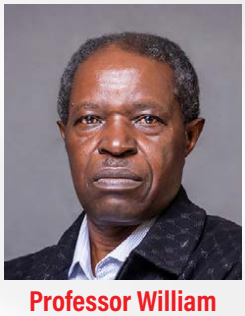
**Professor Freddie Ssengooba**
2014-2018

**Associate Prof. Elizabeth Ekirapa**
2018-2022

**Dr. Suzanne Kiwanuka**
2022- todate

## Disease Control and Environmental Health (DCEH)

**Professor David Serwadda**
1999- 2002



**Professor William Bazeyo**
2003-2004

**Professor Fred Nuwaha Ntoni**
2004-2008

**Associate Professor John C. Ssempebwa**
2009-2017

**Associate Prof. Esther Buregyeya**
2017-todate

## Community Health and Behavioral Sciences (CHBS)

**Dr. Christine Zirabamuzaale**
2001 - 2007

**Professor Christopher Garimo Orach**
2007 - 2020

**Dr. Christine Nalwadda**
2020-todate

## Epidemiology and Biostatistics (Epi-Bio)

**Prof Konde-Lule**
2001-2005

**Prof. David Guwatudde**
2006-2010

**Associate Professor Fredrick Makumbi**
2010-2014

**Prof Nazarius Mbona Tumwesigye**
2014-2018

**Associate Professor Noah Kiwanuka**
2018-2022

**Dr. Joan Mutyoba**
2023-todate

# Global Voices: Faculty Shaping Public Health on International Boards

Faculty members and researchers are driving global health transformations, serving as board members, chairs, and advisors in leading international organizations. Their roles amplify the School's influence, fostering impactful policies and practices that resonate worldwide, championing a healthier, more equitable future for all.

## Department of Disease Control and Environmental Health (DCEH)

**Prof Rhoda Wanyenze**

| Organisation | Position held by Staff in the organization |
|---|---|
| **Gavi, Vaccine Alliance** | Jan 2023 to date: Alternate Board Member for Gavi, the Vaccine Alliance—representing the Research and Technical Health Institutes |
| **WHO** | Jan 2023 to date: Member of the World Health Organization Pandemic Influenza Preparedness (PIP) Framework Advisory Group |
| **Declaration of Research Assessment (DORA)** | June 2018 to date: Member of the Advisory Board for the Declaration of Research Assessment (DORA)—also currently serving as a member of the Executive Board |
| **University of Oslo Lancet Commission on Global Governance for Health** | Co-Chair of the University of Oslo Lancet Commission on Global Governance for Health |

**Dr. David Musoke**

| | |
|---|---|
| **Health Systems Global** | Co-Chair, Community Health Workers Thematic Working Group |
| **International Federation of Environmental Health** | President Elect |
| **Community Health Worker (CHW) Central** | Member of the Technical Advisory Group |

**Dr John Bosco Isunju**

| Organisation | Position |
|---|---|
| **Consortium for Advanced Research Training in Africa (CARTA)** | Board Member |

**Dr. Esther Bayiga Zziwa**

| Organisation | Position |
|---|---|
| **WHO Technical Advisory Group (TAG) on motorcycle safety** | Member |

**Dr. Frederick Oporia**

| Organisation | Position |
|---|---|
| **WHO Technical Advisory Group (TAG) on Drowning** | Member |

# Department of Health Policy Planning and Management (HPPM)

**Prof. Ssengooba Freddie**

| Organisation | Position |
|---|---|
| **Medical Research Council (MRC) UK** | Member |
| **Applied Global Health Policy Research Board (AGHRB) The Board Reviews, and Advises MRC on Research Grants to award, MRC Strategy and Performance of the Grantees of the AGHRB.** | Member of the Applied Global Health Policy Research Board (AGHRB) The Board Reviews, and Advises MRC on Research Grants to award, MRC Strategy and Performance of the Grantees of the AGHRB |
| **National Institute for Health Research (NIHR) UK** | Member for the NIHR's Global Health Research Programme Board. |
| **KEMRI-Wellcome Trust (UK & Kenya)** | Member of the Science Advisory Committee Responsible for Commissioning and Oversight of Research at the KEMRI-Wellcome Trust. |
| **WHO Africa Office, in Congo-Brazzaville.** | Member of the African Advisory Committee on Health Research and Development (AACHRD) for the Director WHO-Afro Office. |

**Dr Peter Waiswa**

| | |
|---|---|
| **WHO** | Independent Advisor to WHO Director-General through the Strategic and Technical Advisory Group for Maternal, Newborn, Child and Adolescent health and nutrition (STAGE) |
| **UNICEF** | Technical Advisory Group Member, Small and Sick Newborns |
| **Gates Ventures- Exemplars on Global Health** | Technical Advisory Group Member, Newborn Health Exemplars in Global Health |
| **Countdown 2030** | Technical Advisory Group Member |
| **ADARA Group** | Board Member |
| **INDEPTH Network Maternal Newborn and Child Health Working Group, 2019 to present** | Director |
| **Lancet Commission on Evidence-Based Implementation in Global Health** | Commissioner |
| **Africa CDC** | Member Reproductive Maternal & Child Health Sub-committee for the Africa Health Intelligence Report |
| **XRP Healthcare** | Technical Advisor |
| **Applied Global Health Policy Research Board (AGHRB) The Board Reviews, and Advises MRC on Research Grants to award, MRC Strategy and Performance of the Grantees of the AGHRB** | Member of the Applied Global Health Policy Research Board (AGHRB) The Board Reviews, and Advises MRC on Research Grants to award, MRC Strategy and Performance of the Grantees of the AGHRB |
| **National Institute for Health Research (NIHR) UK** | Member for the NIHR's Global Health Research Programme Board. |

**Perez Nicholas Ochanda**

| Organisation | Position |
|---|---|
| International Society for Pharma-economics and Outcomes Research (ISPOR) | Board Member |

**Dr Suzanne Kiwanuka**

| Organisation | Position |
|---|---|
| AFENET | Board Member |

**Assoc. Prof Elizabeth Ekirapa**

| Organisation | Position |
|---|---|
| AMREF Health Africa | Board Chair, AMREF Uganda |

## Department of Epidemiology & Biostatistics (Epi-Bio)

**Assoc. Prof. Frederick Makumbi**

| Organisation | Position |
|---|---|
| International Union for the Scientific Study of Populations (IUSSP) | Member, steering Committee for the IUSSP-panel on Rethinking Family Planning Measurement with a reproductive rights and Justice lens |

**Prof. Nazarius Mbona Tumwesigye**

| Organisation | Position |
|---|---|
| Association of Researchers in Substance Use in Africa (ARSUA) | Deputy President |
| Association of Researchers in Substance Use in Africa (ARSUA) | Deputy President |

**Dr. Victoria Nankabirwa**

| Organisation | Position |
|---|---|
| WHO-Immunization and Vaccines related implementation research advisory -IVIR-AC | Member |

**Assoc. Prof. Noah Kiwanuka**

| Organisation | Position |
|---|---|
| Uganda National Council for Science and Technology (UNCST) | Chairperson National Biosafety Committee |

**Dr. Edith Nakku Joloba**

| Organisation | Position |
|---|---|
| World Medical Association | Member and Uganda-representative |
| International Editorial Teams for Biomed-Central Journal and Frontiers in Health | Associate Editor and Member editorial Committee |

**Dr. Roy Mayega**

| Organisation | Position |
|---|---|
| Resilience Africa Network (RAN) | Board Member |

## Department of Community Health and Behavioral Sciences (CHBS)

**Dr. Phyllis Awor**

| Organisation | Position |
|---|---|
| Health Systems Global | Co-Lead of a Technical Working Group of Health Systems Global |
| Social Innovation in health initiatives, Africa | Coordinating Committee member |

**Prof Orach G. Christopher**

| Organisation | Position |
|---|---|
| Canadian Physician Aids and Relief- Uganda | Chairman |
| International Disaster Risk Reduction | Vice Chairman |
| Integrated Research on Disaster Risk Science Committee | Vice Chair |

**Dr. Dathan Byonanebye**

| Organisation | Position |
|---|---|
| Africa CDC NCDs experts developing the "Africa Health Intelligence Report" | Member |

**Dr. Ronald Olum**

| Organisation | Position |
|---|---|
| International Advisory Board The Lancet Global Health | Member |

# Lessons for the Future

## PARTNERSHIPS

Partnerships with a wide range of stakeholders, including academic institutions, policymakers, health program implementers, and communities, are key to the realization of the mandate of public health teaching, research, and community service. From its inception as a department of preventive medicine, rooted in community-based teaching, research, and service at Kasangati health center in collaboration with MOH, and supported by the Rockefeller Foundation and WHO, MakSPH has sustained its networks with key stakeholders. Within Africa, MakSPH has maintained strong partnerships across >30 countries over the past 2-3 decades. These partnerships have been critical in expanding the portfolio of regional research and capacity-building grants. MakSPH should prioritize and emphasize the sustainability of these strategic partnerships.

## RESPONSIVENESS TO STAKEHOLDER AND COMMUNITY NEEDS

At inception, Makerere university produced people who helped the colonialists to govern the region (Uganda and beyond). The medical school strongly supported the colonial health system (and the department of preventive medicine inclusive). The teaching combined the community component where students apply what they learned in class to the community in Kasangati health center and in the process, identified research questions that they answered through research and later implemented recommendations in the same population. The medical school and, thus the department of preventive medicine was very responsive to population health issues. By maintaining strong linkages with global, regional and local stakeholders including the MOH, districts, non-public sector and communities, MakSPH has remained responsive and aligned to the stakeholder needs, which has sustained its relevance over the years. MakSPH should endeavor to stay attuned to stakeholder needs in relation to the emerging and re-emerging public health needs and contribute to generating relevant solutions to remain relevant and sustain its leadership.

## INTERNATIONALIZATION

Makerere University medical school, including the department of preventive medicine, was a learning site for young professionals in the region (Africa) and beyond (including some from the United Kingdom). This contributed to the growing influence of the department beyond Uganda. The MakSPH should ensure that this regional outlook is maintained.

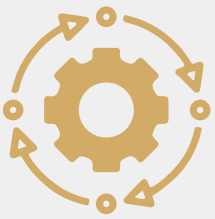
## HANDS-ON FIELD TRAINING MODEL

The academic programs at MakSPH, from inception, have maintained the hands-on field-based teaching, which is implemented in partnership with the MOH, district health services, and multiple non-government organizations with real-life challenges that promote critical thinking and problem solving, making its graduates more attuned to the community needs. The School maintains 8-10 field sites within the districts, has worked with >60 non-government organizations for placement of students and fellows, and has hosted several excanhenge programs with international universities in Europe and the USA. All the current programs admit students from various disciplines and experiences to enhance multi-disciplinary work. The opportunities for exposure and solving real-life challenges within communities and the health system make the graduates more solid and relevant to the increasingly complex public health challenges.

## LEADERSHIP

MakSPH has had committed leadership with continuous growth and development of the infrastructure and systems, partnerships, and new academic, research, and service programs through subsequent leadership change pre- and post-autonomous period. The school has integrated strong staff development with a pipeline of strong researchers—over 90% of the current academic staff have PhD level training and are actively engaged in research, service, and capacity-building partnerships. To remain competitive, MakSPH should maintain or further improve the skills of its human resources.

## AUTONOMY AND EFFICIENCY IN SYSTEMS



This has contributed tremendously to the growth and expansion of research, capacity building, and academic programs. The fastest growth of MakSPH was experienced in the post-autonomous phase, which generally coincided with the expansion of public health as a discipline in the African region and globally, with increased funding, technology, and other opportunities. Further growth and sustainability of MakSPH as a leader in public health will require the sustainability of an efficient structure and systems.

## INTEGRATION OF TEACHING AND LEARNING, RESEARCH, AND SERVICE FOR SYNERGIES

In the past, the management of service, teaching, and research were well integrated to the extent that for example, the head of the department at Mulago hospital/ Makerere University medical school was the same head for that field/ department in the whole country. This structure promoted a more robust integration of service, teaching, and research. The collaboration was practiced at the interdepartmental level, with all the departments working together, including pediatrics, orthopedics, etc, to address common problems. Kasangati health center facilitated this collaboration. As MakSPH grows with more specialization and emerging centers, the school leadership must endeavor to sustain the collaborative engagement across departments and centers, and integration of teaching, research and service to maximise the synergies across these three components of the core mandate of the school, and ensure that each component receives adequate focus, and continues to grow.

As noted in this history, preventive medicine was overemphasized during medical training. That's why it was a very successful strategy in improving population health. Similarly, there is a need to emphasize public health in teaching, service delivery, and research for medical and other students in health professions to ensure appropriate competencies and impact at the community level.

Recognition of historical contributions to the growth and development of MakSPH: Many people made a tremendous contribution to medical school and public health in the past. There is a need to name the same sites in memory of some of these people. While the MakSPH is located in Uganda, many non-Ugandan nationals significantly contributed tremendously to its growth and influence in Uganda and the region.

The school of public health has been one of the success stories of Makerere university, particularly in fundraising, research outputs, and internationalization. That should therefore be matched with infrastructural growth and organizational realignment to further expand the productivity of the school.

## THE MakSPH STRATEGIC DIRECTION, 2020-2030

Despite the tremendous growth of the School and the major contribution it has made to public health in the region, there are several emerging and protracted public health challenges that must addressed and opportunities that should be embraced to ensure the relevance of MakSPH teaching and learning and research and innovations to enhance the impact on the health and wellbeing of the targeted communities. The MakSPH strategic direction has in focus health security and resilient health and other relevant systems, climate change and environmental degradation, rapid urbanization, and rapid population growth, particularly of the youth demographic, especially in sub-Saharan Africa. Further, the rapid changes in the socio-cultural and political environment have had a dynamic impact on the social determinants of health. The rapidly changing context and the need for health promotion and prevention demand a rethinking of public health policy and strategies as well as training. Increased access to the internet and multimedia offers the opportunity to rethink the delivery of learning through a broad network of students and teachers globally. In addition, the promise of the digital age to improve health outcomes will be exploited. The MakSPH strategy further integrates strengthening of strategic partnerships and institutional as well as staff development for sustainability.

# Uganda Public Health Fellowship Program

It is exciting to note that Makerere University School of Public Health (MakSPH) is celebrating 70 years of being a leader in public health education, research, and service. Its partnership with the Uganda Ministry of Health (MoH) and other important stakeholders shows how important it is for it to fill Uganda's critical health workforce gaps. The Uganda Public Health Fellowship Program (UPHFP) is one of the programs that is changing the way public health is done.

To address the pressing shortage of essential health professionals in the public sector, the Uganda Ministry of Health (MoH) established the Uganda Public Health Fellowship Program (UPHFP). Housed within the Uganda National Institute of Public Health (UNIPH), this program offers training in six specialized areas: Field Epidemiology, Laboratory Leadership, Health Informatics, Health Economics (Prevention Effectiveness), Implementation Science, and Monitoring & Evaluation. While some components of the program are already up and running, others are in advanced stages of development.

The UPHFP is a two-year post-master's degree program designed as part of the Ministry of Health's long-term vision to build sustainable public health leadership in Uganda. The program focuses on developing a skilled workforce through hands-on learning while addressing real-world public health challenges in the country. UPHFP also plays a critical role as a key component of the National Rapid Response Team, serving as the frontline in responding to public health emergencies.

The **Advanced Field Epidemiology Training Program** (**Adv FETP**) that started in 2015, remains the foundation of UPHFP. It was modeled after the U.S. CDC's Epidemic Intelligence Service program and it enrolls a diverse range of professionals, including veterinarians, physicians, nutritionists, laboratorians, biostatisticians, social scientists, and environmentalists. Fellows spend 80% of their time conducting studies under the mentorship of UNIPH and MoH experts, with the remaining 20% in interactive training sessions delivered by MakSPH and UNIPH. Through this rigorous program, fellows gain expertise in outbreak investigations, public health surveillance, cost analysis, disease burden estimation, quality improvement projects, and leadership.

*Dr. Alex Riolexus Ario*

The **Laboratory Leadership Program** (**LLP**), was introduced in 2023, focuses on equipping fellows with the skills to enhance laboratory systems and infrastructure, disease surveillance, quality management systems, and laboratory-based outbreak investigations. In 2024, with support from Korea Foundation for International Healthcare (KOFIH) and the U.S. CDC, we launched the **Health Informatics** (**HI**) track. The track leverages cutting-edge tools such as Python, R programming, and data visualization to address informatics challenges in healthcare delivery. Fellows in this track play critical roles in improving health data systems across public health facilities and regional referral hospitals.

Over the years, UPHFP fellows have made outstanding contributions to Uganda's public health system, including leading outbreak investigations, designing quality improvement projects, and publishing over 160 articles in peer-reviewed journals. Graduates have seamlessly transitioned into influential roles within the MoH, MakSPH, World Health Organization (WHO), Africa CDC, and other leading institutions. These achievements highlight the program's success in developing a competent workforce to support the nation's health priorities.

As MakSPH commemorates seven decades of advancing public health not only in Uganda but the region and globe, it continues to play a critical role in shaping the UPHFP's trajectory. The program's expansion into new tracks, including **Implementation Science**, **Prevention Effectiveness**, and **Monitoring & Evaluation**, will further boost its capacity to address Uganda's evolving public health needs. This collaborative effort between MakSPH, the MoH, and international partners is testimony to the shared vision of creating sustainable health systems that respond to the needs of the population.

On the occasion of MakSPH's 70 years of renewed commitment to excellence in education, research, and service. The UPHFP is only a demonstration to the School's ambition to build capacity of public health professionals with the requisite skills and competences to drive meaningful change and build a healthier, more resilient Uganda.

***Dr. Alex Riolexus Ario,***
***Director,***
***Uganda National Institute of Public Health (UNIPH)***

# Walking Side by Side with The Rockefeller Foundation Since 1950s

Q&A

*Mr. William Asiko, Vice President, Rockefeller Foundation, Africa Regional Office.*

The Rockefeller Foundation has helped MakSPH evolve since the 1950s. Its funding has transformed the School and public health education in Uganda and abroad. From building capacity of our faculty, contributing to the construction of our current home in Mulago in the 1970s to funding our initial works in family planning and maternal and child health research, the Foundation has been instrumental. It also helped us build our MPH program through Public Health Schools Without Walls, enabling us tackle emerging public health issues. This shows what we can do with purpose and commitment. To commemorate MakSPH@70, we spoke to William Asiko, Vice President, Africa at the Rockefeller Foundation. William leads the Foundation's work across the continent, fostering partnerships to help African governments advance their development goals. With two decades of experience in the private sector and a deep understanding of Africa, Europe, and North America, William's perspective on the Foundation's work is priceless. Below are the excerpts from a conversation with him

***Qn: Can you share about on Rockefeller's work in Africa, especially in Uganda? What are its key focus areas and goals for stakeholders across the region?***

**Ans:** Thank you very much for having me, Rockefeller Foundation has a long history, its 111 years old this year. Over years, it has focused very much on matters of food security, on matters of public health and matters of technology and data science. Today, more recently over the last 20 years, the foundation has begun a large focus on matters of climate and more recently on climate change and renewable energy. Globally, the Foundation is one of the oldest foundations in the world and certainly has set the standard for many other foundations around the world which are doing great work. In Africa our focus has been on food security, public health and largely education around food security and public health. We have supported many public education institutions, especially universities to establish institutes of development, institutes of research but also public health schools and schools for food security. That is all a legacy, there are many university examples around the continent, and here in Uganda we have had a long history with the Makerere University School of Public Health. Makerere University was one of the first universities we worked with here on the continent and since the beginning of the Institute of Public Health, which is celebrating 70 years this year. Therefore, public health, food security, renewable energy and more recently climate change, those are the areas of focus for the Rockefeller Foundation. Thank you.

***Qn: The Rockefeller Foundation has invested significantly in Uganda's Climate Change National Health Adaptation Plan. What drives this commitment, and why is addressing climate change critical for the health sector?***

**Ans:** Thank you very much. So, like I said, we have a long history of

being involved in public health as a Foundation globally, and here in Africa, public health obviously has been driven by a number of things. But today what we are seeing is; issues around public health is very much related to issues around climate and climate change. That makes us interested in this area since The Foundation has got a global focus today. In Uganda we have a long history of supporting public health, food security. Uganda as a country has been a Foundation's partner for a long time. We also know that the country is very vulnerable to climate change and the effects of climate change and also Uganda is a country that has had to deal with a number of public health emergencies in the last few years. We came together with the Ministry of Health, here in the Makerere School of Public Health to start a focus on how we could assist the government to start thinking through its preparation for matters around health and climate change. So the first thing that we did was to help them with a vulnerability assessment; so this is a methodology that has been developed by the World Health Organization (WHO) that allows countries to determine how vulnerable they are to the issues around climate change and how it affects health. We were able to complete that and that was presented at COP28 last year (2023) in Dubai, and the next step after developing the vulnerability assessment of health then was to develop an adaptation plan. The Health National Adaptation Plan (H-NAP), which is essentially how do you adapt the health system to meet the challenges around climate change. Again, this is a methodology that has been developed by WHO. It's a global methodology, we are going to use it to a number of countries across the continent, but Uganda is the demonstration country, and I am very pleased for us to be launching this health national adaptation plan together with the Ministry of Health here in Uganda this year.

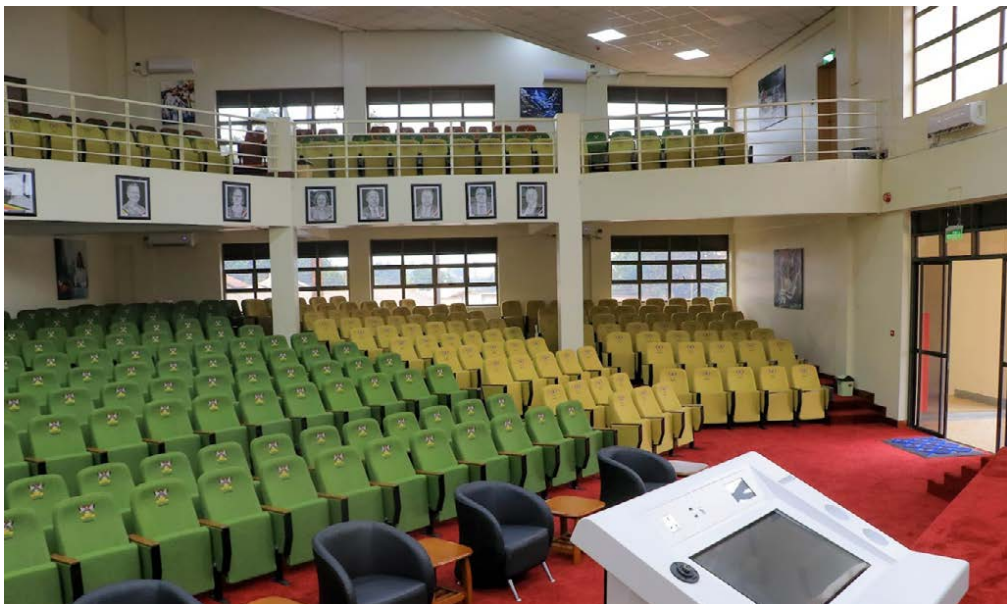
***Qn: Reflecting on the capacity built over the years and the development of the Health National Adaptation Plan, how would you assess Uganda's preparedness to handle public health emergencies and address climate-related challenges?***

**Ans:** Africa is highly vulnerable to the impacts of climate change, despite contributing minimally to global emissions. Unfortunately, the continent bears a disproportionate share of climate-related challenges. While it's difficult to pinpoint Uganda's exact standing among other countries, what stands out is Uganda's leadership in conducting a vulnerability assessment and developing a National Health Adaptation Plan. These steps are crucial for preparedness.

Uganda has faced numerous public health challenges in recent years, including outbreaks of Ebola and COVID-19. In many countries, we are seeing an increased disease burden as a result of climate change. As a direct result of flooding, we see more cases of vector-borne diseases like cholera and malaria and drought impacting nutrition, particularly for children. These issues are not unique to Uganda but affect the entire continent, underscoring the urgent need for adaptive strategies.

***Qn: What is Rockefeller's vision for this collaboration with MakSPH, and how do you see the partnership evolving in the future?***

**Ans:** Makerere School of Public Health has been a long-standing partner of the Rockefeller Foundation, and we are very proud of this partnership. One thing that we have done with Makerere School of Public Health is we're proposing to make a center of excellence in Africa, particularly in partnership with the Africa CDC, focusing on behavior change—a critical public health area. Health and behavior are deeply intertwined;—how we live, what we eat, and how we relate to one another. Today, public health has become a pressing issue, and the School has emerged as a continental leader in creating courses that other universities utilize to train public health officials on these issues. We are supporting efforts to start a Master of Health Promotion and Communication.



*The New MakSPH Auditorium, located at Makerere University Main Campus was furnished with a grant from the Rockefeller Foundation.*

As you are aware, following the COVID pandemic, we experienced a vaccine shortage in Africa. Later, even when we got them, then it was difficult to get people to agree to take those vaccines. Makerere again, in partnership with the Rockefeller Foundation, became a leader in addressing vaccine uptake issues in Wakiso through the wok we supported. After resolving the initial vaccine shortages in Africa, the focus shifted to encouraging communities to vaccinate. Makerere, supported by the Rockefeller Foundation, developed effective methodologies for promoting vaccine acceptance. These efforts, trialed successfully in Uganda, are now those learnings are being shared across the continent.

***Qn: In respect to your recent tour of their new MakSPH facility, how does Rockefeller plan to continue its support, especially considering the The Foundation's role in the current Mulago building?***

**Ans:** Thank you. Yes, we had the opportunity to visit the impressive new infrastructure that the Makerere School of Public Health is developing. Obviously, over the years, student enrollment has increased significantly, and so its current home is not sufficient to meet the demand for training students here in Uganda. To address this, the School is undertaking an ambitious project to build a new home within Makerere University, and we are proud to support them in this effort. We have helped them to equip one of the rooms that they are going to be using for their lectures and public events. I know the project itself is huge and we have supported a small part, but I was impressed by the progress that is being made. The vision of the leadership of the School is to develop such an impressive facility within the university. This is needed to train public health officials and public health students in Uganda for now and for the future.

***Qn: What message do you have for the government and stakeholders on climate change and health? Given your global experience, how do you think we can better address the health impacts of climate change in Africa?***


*Mr. William Asiko, receiving an award from Uganda's third Deputy Prime Minister and Minister without Portfolio, Rt. Hon. Lukia Isanga Nakadama in August 2024.*

# Celebrating the Rockefeller Partnership

## Key Contributions to Public Health

- The Foundation's earliest contributions, dating back to the late 1950s, included hiring technical experts and expatriates to build local capacity in teaching, research, and disease prevention.
- Dr. George Saxton, an American expatriate who served as Director of Kasangati Health Centre and led fundraising efforts for the Mulago MakSPH building, was hired and supported by the Rockefeller Foundation.
- Supported fundraising efforts for the then IPH culminated in the late 1960s with the completion of a modern facility equipped with essential scientific resources, advancing public health education and research.
- Supporting public health emergency response, including the most recent, COVID-19 and the 2022 Ebola outbreak
- The MPH program, launched in 1994, received initial funding for scholarships, laptops, and field vehicles, supporting the growth of a skilled regional public health workforce.
- Supported the development of curricula for Health Promotion and Communication program
- Improved vaccination outreach and health education through joint efforts.
- Supporting research and adaptation plans to enhance Uganda's healthcare resilience.
- The Foundation furnished the current MakSPH auditorium with beautifully crafted branded convertible chairs
- The Rockefeller Foundation's partnership with MakSPH has advanced public health training and research.

**Ans:** Thank you for the opportunity. As an African, I understand that we Africans can get very impatient with our governments' development efforts. But let me assure you, Uganda is not alone in the challenges it is facing, be it climate change. While contributing little to the crisis, Uganda, like many African countries, is leading the way with its Health National Adaptation Plan, preparing to access global finance for adaptation and mitigation. Recently, we had the Ebola outbreak, and to the surprise of everybody in the world, Uganda was able to contain that Ebola outbreak within a period of 90 days. This is a record, and for a country like Uganda to not just contain the virus within Uganda but from spreading outside to the other neighboring countries was a feat I think everybody can be proud of. And so that is a message that I want to deliver strongly: that Uganda has the capacity and the knowledge to do amazing things. As a development partner, we are committed to supporting Uganda in building on its strengths and preparing for future climate-related challenges.

***Qn: In your meeting with the School of Public Health leadership, you emphasized the need for more evidence on the connection between environmental health and climate change. Could you elaborate on this, and what kind of research would the Foundation be looking to support or finance?***

**Ans:** Yes, that's a very important question. Climate change is the single largest threat to humanity today, not just in Uganda but globally. My message to the leaders at Makerere School of Public Health was that as they expand their programs and research on the intersection of environmental science and public health, they must focus on understanding the drivers of the emerging disease burden linked to climate change. Changes in weather patterns—such as unpredictable rainfall—will significantly affect food production, which in turn impacts public health. We discussed how research today can help governments create policies and allocate resources to manage the health risks posed by climate change. The leadership at Makerere is already thinking in this direction and plans to develop programs around it. I look forward to returning next year to see their progress and explore further ways to support these initiatives.

***Qn: Like you rightly observe that climate change is a major threat to humanity, how can universities and research institutions play a more active role in addressing its impacts, particularly in relation to health, food production, and migration?***

**Ans:** Universities around the world are increasingly focusing on the intersection of climate change with health, migration, food production, and employment. These are critical areas shaping human behavior and should be key research priorities for institutions globally. This shift is already happening worldwide, with many research centers exploring how climate change impacts various aspects of life.

*Multi-stakeholder Partners at the Launch of Uganda's Health National Adaptation Plan in August 2024, including Mr. William Asiko, Vice President, The Rockefeller Foundation's Africa Regional Office.*

# Research Highlights

# Rising Aflatoxins Threat in Uganda and Implications for Public Health and Food Safety

*Left to Right: Dr. Charles Ssemugabo and Dr. Jimmy Osuret, both Research Associates in the Department of Disease Control and Environmental Health at MakSPH.*

After an evening meal at a nearby restaurant, Jocelyne Nakibuule, a resident of Kisaasi, a Kampala suburb, woke up with stomach rumbling. Suddenly, she started sweating profusely, and her stomach started aching. Her condition would soon worsen with bloating, vomiting, and stomach swelling. It's then that she started contemplating her last meal, comprising posho, rice, and beans accompanied with vegetables.

Nakibuule recalled having a minor stomach unease after that meal; little did she know she would end in hospital admission. She had suffered food poisoning, doctors said.

*"I was sweating non-stop. I tried to take hot water, but it did not work, and I took Panadol, but still it didn't work. Meanwhile, my stomach had started swelling so much,"* she recounts.

Upon discharge from the three days' admission, Nakibuule was warned to stay away from street food. Doctors warned her that food poisoning could be fatal, and as she reports, they said many patients are reporting symptoms related to eating contaminated food, at times laced with aflatoxins.

Aflatoxins are natural toxins produced by fungi that grow on agricultural crops and dried foods, and they are a growing threat in Uganda. Several policymakers, researchers, and scientists have raised a red flag about the presence of these toxins, especially grains in Uganda.

These toxins are produced by molds that infect inadequately dried foods like maize, groundnuts, sorghum, soybeans, millet, cassava, sweet potatoes, spices, and fish, as well as animal feed made from contaminated foods.

*Fruits being sold at the Nakasero market in Kampala City. Nakasero market, Kampala.*

Though research about food safety has been going on for long, the issue of aflatoxins was widely discussed in Uganda during the COVID-19 era when free food supplied by the government of Uganda to the vulnerable populations was found to be contaminated with aflatoxins.

More recently, in 2023, the Ministry of Health issued a stern warning that the threat was rising and noted the danger with exposure to these toxins. While appearing before the parliamentary Joint Committee on Health and Agriculture, which was investigating the rates of aflatoxins in Ugandan food, Margaret Muhanga, Minister of State for Primary Health Care, reported that the Uganda Cancer Institute receives 170 to 200 liver cancer cases annually, with aflatoxin exposure responsible for around 48 to 56 cases.

Muhanga explained that aflatoxins present significant health risks to both humans and animals, causing acute and chronic toxicity, nutrient malabsorption, immune suppression, and, in severe cases, immediate death from acute toxicity. Muhanga warned that contamination of Uganda's food surpasses the permissible limit of 20 micrograms per kilogram. Her revelations are in tandem with what researchers are finding.

A study conducted by researchers at Makerere University School of Public Health (MakSPH) found aflatoxins in 80% of the samples that they had collected, a rate far higher than acceptable limits by both the US Food and Drug Administration (FDA) and the World Health Organisation (WHO) of 20 micrograms per kilogram.

Researchers have found that the widespread presence of aflatoxins in many food samples is largely due to environmental issues. However, factors like inadequate transportation, poor storage practices, and weak regulation of food safety in Uganda contribute significantly to this problem.

Also, extended storage periods in shops and stalls, often in warm and humid conditions, create an ideal environment for fungal growth. The study focused on commonly grown crops like maize, groundnuts, and cassava, which are staples in the diets of about 40% of both rural and urban populations.

Osuret's findings speak to what is being highlighted globally, whereby the Food and Agriculture Organization (FAO) of the United Nations estimates that 25% of the world's food is contaminated with aflatoxins. Relatedly, research by the Partnership for Aflatoxin Control in Africa (PACA) revealed high and widespread aflatoxin contamination in key Ugandan crops like maize, groundnuts, and sorghum. For instance, up to 65% of maize in Mubende District and 45% in Kamwenge District contained aflatoxin levels exceeding Uganda's maximum limit of 10 parts per billion, or ppb, for total aflatoxins.

With such high levels of contamination, Osuret warns that aflatoxin exposure can have disastrous effects among all age groups and is a significant risk factor for cancer such as hepatocellular carcinoma, especially when hepatitis B infection is also present. The researchers also note that aflatoxin exposure could be linked to stunted growth among children.

This is particularly concerning, especially that there are other ways, apart from aflatoxin contamination, that other foods are getting contaminated with dangerous chemicals, and yet those would be a safer alternative.

For instance, a study done by Dr. Charles Ssemugabo, another researcher at MakSPH, found fruits and vegetables to have contaminants arising from pesticides and other chemicals used to give these a longer shelf life.

In his PhD study, in which he measured pesticide residues in commonly consumed fruits (watermelon and passion fruit) and vegetables (tomato, cabbage, and eggplant) in Kampala, Dr.

Ssemugabo found some to have residues of long-banned chemicals such as monocrotophos in fruits and vegetables, which could be lethal to the human nervous system. Other chemicals they found in fruits and vegetables included those belonging to the class of organophosphates, carbamates, pyrethroids, and neonicotinoids.

*"The concentration of pesticide residues in fruits and vegetables has the potential to harm consumers health, especially that of children. I also found that the potential for risk decreased with an increase in age, implying that children were subject to the highest level of health risk. Although consumers applied mitigation measures like washing, peeling and cooking or their combination, some did not apply them appropriately,"* Dr. Ssemugabo.

With this double danger to both human health and trade, researchers recommend the establishment of a routine monitoring and surveillance program for aflatoxin contamination to support risk assessment, regulatory enforcement, and public education to reduce exposure.

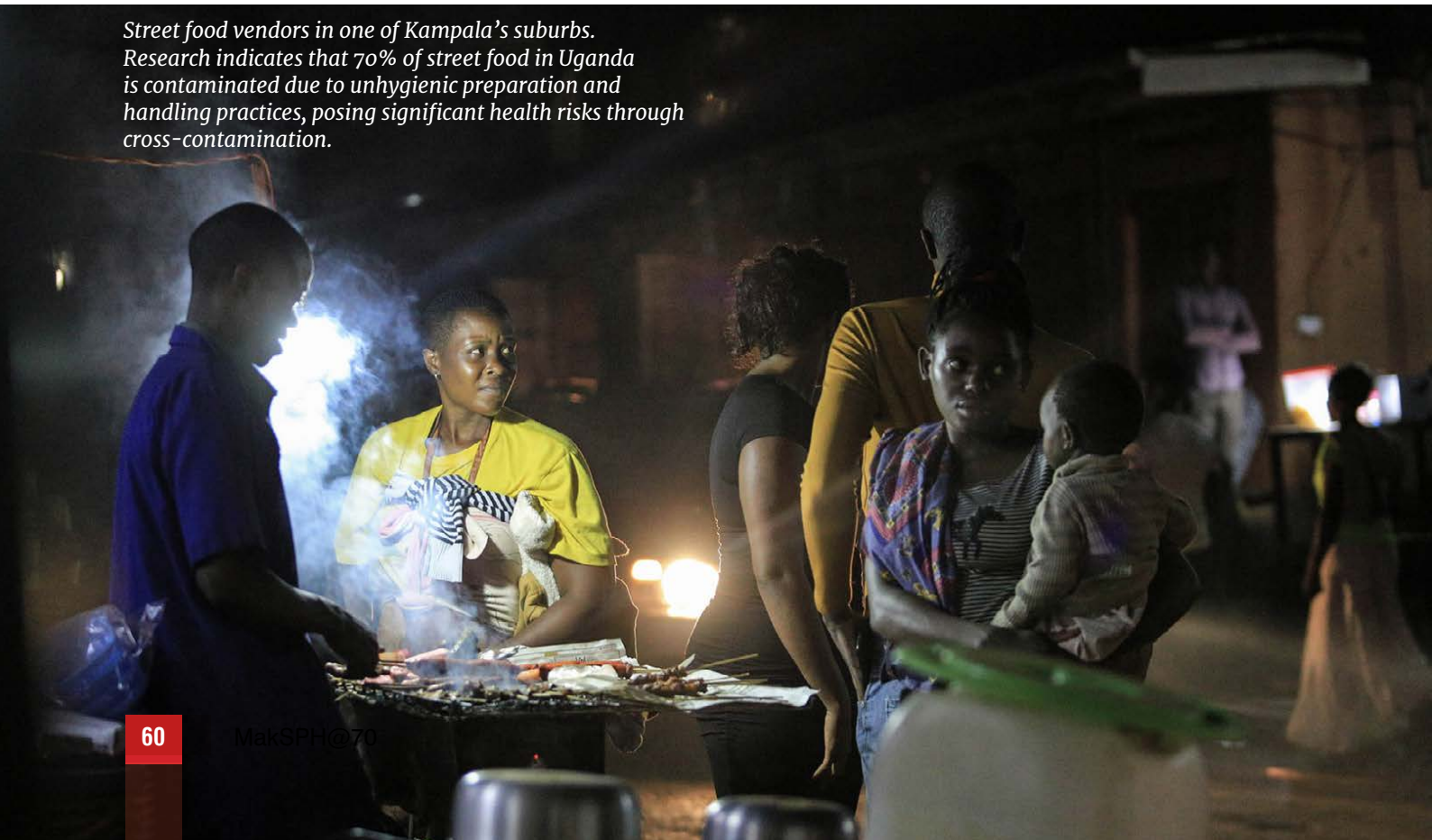
They also recommend that the Uganda National Bureau of Standards (UNBS) sets a national regulatory limit for food safety aligned with global agencies such as the WHO and the FDA guidelines and tailored to local needs and for the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to train farmers in good agricultural practices to prevent contamination and ensure safe post-harvest handling.

## COST ON THE ECONOMY

Uganda sees around 1.3 million cases of foodborne illnesses each year, making up 14% of all treated cases according to the Ministry of Health. Aflatoxin contamination hampers economic growth by 0.26%, and the Food and Agriculture Organization (FAO) estimates that Uganda loses $77 million annually on treating 3,700 cases of aflatoxin-related cancer.

Meanwhile, without proper measures and regulations in place, Uganda has faced major challenges, especially when it involves exporting food products. For instance, last year, Uganda's maize was rejected because of failure to hit the permissible limits by the East African Community (EAC). As a result, Uganda lost an estimated 7.5 billion shillings when about 1700 tonnes of our maize were rejected by South Sudan due to high aflatoxin levels exceeding the agreed permissible levels in food in the EAC, which is a maximum of five parts per billion (ppb).

Earlier, before that, Kenya had also rejected Uganda's grains over the same complaints. Now, researchers say in addition to creating awareness on proper food handling, they push for developing guidelines on post-harvest handling and cultivation of crop varieties with lower susceptibility to fungal growth. For consumers, the School of Public Health recommends always applying proper domestic handling by washing foods properly and ensuring they are stored appropriately to keep the aflatoxins and other contaminants away.



*Street food vendors in one of Kampala's suburbs. Research indicates that 70% of street food in Uganda is contaminated due to unhygienic preparation and handling practices, posing significant health risks through cross-contamination.*

# Snakebites, a neglected public health issue



*Dr. John Bosco M Ddamulira, Dr. Susan Kizito and Dr. Alfred Mubangizi, Ag. Assistant Commissioner for Vector Borne and NTDs Division at the Uganda Ministry of Health.*

Edwin Muhindo, a 17-year-old house manager in Mukono Municipality, will never forget the day a black snake bit her in 2018 in her home district of Kasese in Western Uganda. All she felt was a pinch as she picked up a basin from her aunt's house. To her aid was a village herbalist who tied herbs on her leg for a week.

"I felt dry and thirsty after the bite, then later, a lot of pain," she recalls. "The (herbalist) waited for the teeth to burst out, and later she removed the medicine. I had a scar, but it disappeared sometime back.".

Snakebites are dangerous incidents that could lead to loss of life. It was incidents like Muhindo's that prompted seven researchers and health professionals from Makerere University School of Public Health (MakSPH) and Ministry of Health to devote their efforts around herpetology, the study of reptiles and amphibians.

The seven were: John. B. Ddamulira, Dr. Simon Kasasa, Dr. Alfred Mubangizi, Dr. Julius Kyaligonza, Dr. Susan Kizito, James Ntulume, and Ronald Senyonga. Their work was rooted in snakebites and venomics, laying a good foundation for future studies and information banks for the country's healthcare system.

The study, which was funded by the Government of Uganda through Makerere University Research and Innovations Fund (Mak-RIF), sought to determine the burden of snakebites, snakes involved, characteristics of the bites, community knowledge and practices, as well as health facility capacity to manage snakebites. The study was conducted in six Ugandan districts: Arua, Gulu, Kamuli, Kasese, Nakapiripirit, and Mubende

Snakebites and envenoming are medical emergencies that, if left untreated, can result in permanent disability, disfigurement, or even death. Available data indicates that worldwide, snakes bite 2.7 million people—125,000 of whom die—every year. The majority of these cases are in sub-Saharan Africa and Asia.

## THE FINDINGS

There are over 120 known snake species in Uganda, about 80% of them non-venomous. Of all the snakebites that occur, less than 20% are from venomous snakes, and about 50% are from non-venomous ones, normally dry bites with no venom injected.

Participants in the study reported a wide range of both venomous and non-venomous snakes as being present in their communities. The venomous snakes included Brown Forest cobra (even though its black in colour), Egyptian cobra, black-necked spitting cobra, Puff adder, Black mamba, Gaboon viper, Rhinoceros viper, Eastern Blanding tree snake, spotted bush snake, and vine tree or Twig snake. The non-venomous included Rock Python, House Snake, Blind Snake, and Battersby's bush snake.

Out of 1,080 households enrolled in the Ugandan study, 341 (31.6%) had a case of snakebite. In 2018, Uganda integrated snakebite envenoming into the country's Neglected Tropical Diseases (NTD) program and drafted the first national snakebite prevention and management strategy. However, the absence of country data on snakebites hampers implementation of the strategy.

Most snakebite cases were not reported to health care because they happened in remote rural areas far flung from health centres. The study findings also indicate that 50% of the victims did not see

the kind of snake that bit them and even delayed seeking medical attention, making it difficult for health workers to give a proper diagnosis. The health facility personnel are left with no option but to entirely rely on history and observation of the patient to carry out a diagnosis.

The researchers also found out that most bites occur at night. Furthermore, most victims are frequently bitten by snakes while walking along footpaths (26.5%), at home inside the house (25.4%), at home outdoors (20.4%), and while in the gardens (17.2%).

## NEED FOR INFORMATION, CONCERTED EFFORTS

Successful management of snakebites, notes researcher Dr. Kizito, requires information on the snakes, snakebite characteristics, and correct knowledge of management. With such information, it would help train health workers and the community on what to do when these cases happen.

"Most cases are managed traditionally, until the situation escalates and the victim will look for healthcare," adds Kizito. "Shockingly, most of our health workers have little knowledge about snakebites."

The other challenge is that there are not enough approved anti-venoms on the market. The researchers agreed that there were opportunities for research, with the view of making anti-venom or any other medicine from plants or even domesticated animals, apart from horses and sheep, as is currently the case.

To Dr. Kizito, battling snakebites requires bringing all actors, including health workers, the Ministry of Health, and herbal and traditional healers, on board for orientation and awareness campaigns.

Dr. Ntulume agrees and is hopeful. "I am so optimistic that many actors across board have seen and embraced the need for Snake bites and Venom production," he says. "I pray we kick off with venom production not only for the country but for the continent."

**In order to reduce morbidity and mortality due to snakebites in Uganda, we do recommend a number of actions which aim at increasing community awareness, knowledge on management of snakebites and health capacity to manage snakebite cases.**

# The Power of Vaccination and Public Health Research

Vaccination is one of the most effective public health interventions to prevent diseases and improve population health, particularly for vulnerable groups such as newborns. Dr. Victoria Nankabirwa, a Senior Lecturer at MakSPH, epidemiologist, and passionate public health researcher, has dedicated over two decades to improving maternal, newborn, and child health.

Dr. Nankabirwa's journey into public health began during her medical internship in 2004 at Mulago Hospital, where she witnessed the devastating impact of preventable diseases like measles. "That year, we admitted countless children in the measles ward, many of whom did not survive. However, after a vaccination campaign, the admissions dropped drastically. It showed me the power of vaccines and public health interventions," she recalls.

That year alone, an estimated 454,000 people, the majority of whom were children, died from the measles outbreak, and the impacts were dire in Uganda. The situation was only salvaged by the rollout of a mass vaccination drive. For Dr. Nankabirwa, this experience inspired her to pursue a career focused on disease prevention and maternal and child health.

Relatedly, a 2023 survey conducted by the Ministry of Health, with technical support from MakSPH and partners, confirms that Uganda loses over 62,000 lives per year around birth. This unacceptable number includes the lives of 4,800 mothers who die during pregnancy, childbirth or within 42 days of delivery, 26,000 stillbirths, and 32,000 neonatal deaths.

This always concerned Dr. Nankabirwa. After completing a Master of Public Health at Burk University and a PhD at the University of Bergen, she gained global experience working in Norway, Switzerland, the UK, the USA, and Bangladesh. Despite opportunities abroad, she chose to return home, motivated that it was where she could make the greatest impact.

"I always felt this is the place where I can make the most difference," Nankabirwa explains emphatically. "We have unacceptable health indicators, but because we know better outcomes are possible elsewhere, these indicators can and must be improved here too."

Dr. Nankabirwa is unapologetic about her commitment to cutting-edge research, particularly clinical trials. Her work spans vaccines, antiseptics, and methods of epidemiology to improve child survival and maternal health outcomes. It is through these decades of work, that Dr. Nankabirwa was recently inducted as a fellow at the prestigious Uganda National Academy of Science (UNAS) in November 2024, among other colleagues from MakSPH.

In Uganda, just as it remains around the region, Tuberculosis (TB) remains a leading cause of death in the country, surpassing HIV and malaria. Although the BCG vaccine has been used for over a century, it is only effective against severe TB cases, leaving a gap for other types. To address this, Dr. Nankabirwa recently led a head-to-head clinical trial of nearly 6,000 children,

*Dr. Victoria Nankabirwa, a Senior Lecturer, MakSPH.*

comparing the existing BCG vaccine with a new recombinant vaccine, VPM1002. Data analysis is underway, offering hope for a more effective TB vaccine.

Dr. Nankabirwa and team also recently conducted a randomized trial involving 4,700 newborns to test the use of chlorhexidine, a low-cost antiseptic, used for umbilical cord care. The study demonstrated a 60 per cent reduction in severe newborn illnesses. "Scaling up the

use of chlorhexidine could save countless lives, especially in low-resource settings," she notes.

Beyond survival, Dr. Nankabirwa is exploring ways to enhance children's potential. A study funded by the Bill & Melinda Gates Foundation is tracking brain development in children from birth to five years, examining factors like cognitive growth and school readiness. From this research, she has published over 80 publications in high-impact journals, as evidence to inform policy and practice in improving maternal and child health.

Important to note today, is that while vaccines are life-saving, barriers persist affecting uptake and equity. According to the researcher, this includes transportation, health worker attitudes, and stockouts. "Most parents don't refuse vaccines because of misinformation but because of logistical challenges like being asked to pay for what should be free or facing long queues," she explains. To address these challenges, Dr Nankabirwa advocates for improved maternal education, health system efficiency, and empathy from healthcare workers.

Since returning to Uganda, Dr. Nankabirwa has been instrumental in shaping the public health research landscape at MakSPH. She credits the institution for its strides over the past 70 years in training health leaders and advancing public health research.

*"Africa must start producing its own vaccines and building its research capacity,"* she emphasizes. Reflecting on the inequities revealed during the COVID-19 pandemic, she notes the urgency of self-reliance in vaccine production. Dr. Nankabirwa's journey, marked by passion, perseverance, and purpose, underscores the transformative power of research in advancing public health.

As MakSPH celebrates its 70th anniversary, Dr. Nankabirwa envisions a future where the school leads in cutting-edge research, vaccine development, and simple yet impactful public health interventions. *"We must continue implementing evidence-based solutions, from vaccinations to oral rehydration therapy, while investing in innovative approaches to tackle emerging challenges,"* she says.

**Africa Must Start Producing Its Own Vaccines And Building Its Research Capacity**

**Dr. Victoria Nankabirwa**

# Why Uganda Needs to Take Decisive Actions to Stem Alarming Newborn Deaths

*Left to right, MakSPH's Dr. Peter Waiswa, Prof. Joy Lawn and Hon. Margret Muhanga.*

Uganda faces the daunting task of reducing newborn deaths. The challenge emerges as a key highlight from the *Accelerating Newborn Survival and Thrival in Uganda: High-level Round Table Discussion on Newborn Health*, recently concluded by the Ministry of Health in Kampala in June 2024, which featured the launch of the new *Situation Analysis of the National Newborn Health in Uganda*, a survey assessing current gaps and status.

The situation analysis was conducted by Uganda's Ministry of Health, with technical support from the Makerere University School of Public Health based Centre of Excellence for Maternal, Newborn and Child Health, National Planning Authority, Medical Research Council, London School of Hygiene and Tropical Medicine, Exemplars in Global Health, The ELMA Philanthropies, UNICEF, FHI360 and Maternal and Child Health and Nutrition Activity.

The Minister of State for Primary Health Care, Hon. Margaret Muhanga, launching the situation analysis, which is the latest for the country, commended the partners, observing that there is now a need for a critical reflection on strategies to prevent newborn deaths through active engagement with communities and different stakeholders, towards meeting the UN SDG target to reduce neonatal mortality to under 12 per 1,000 live births and under-five mortality to under 25 per 1,000 live births and end preventable deaths by 2030.

Dr. Peter Waiswa, an Associate Professor and health systems researcher on newborn health and development and maternal-

*A mother holds a newborn. These are vulnerable, with high mortality rates in Uganda.*

newborn-child health services, and the Team Lead for Makerere University Centre of Excellence for Maternal and Newborn Health, involved in the research as part of the technical support to the Ministry of Health, presented the findings from the new *Situation Analysis of National Newborn Health in Uganda - 2023 Update*, results that painted a sobering image of the current reality of newborn health in Uganda.

According to the situation analysis report, which is confirmed by the United Nations estimates, each year, Uganda loses over **62,000** lives around the time of birth alone. In an annual cycle, we experience about 1.714 million babies born per year and **4,695** per day. Of the above deaths, over **4,800** are women who die during pregnancy, childbirth or within 42 days of delivery, usually caused by complications relating to pregnancy or its management.

Again, the findings confirm that at least **26,000** of the estimated total deaths are a result of stillbirth, which is usually the death of a baby in the womb at or after 20 weeks of pregnancy. Still, a whopping **32,000** are neonatal deaths, which imply deaths of a newborn within the first 28 days of life, often occasioned by complications relating to prematurity, birth defects, infections, or birth-related conditions. All of which, are preventable deaths.

A lived experience by Prof. Joy Lawn, a Ugandan-born British paediatrician and perinatal epidemiologist with over 30 years of remarkable work championing newborn care, research, and policy worldwide, and a key partner of the School, affirms the need to curb newborn death.

"I was born in a hospital in Karamoja and nearly died at birth, but I survived because people fought for my mother and me. Here in Uganda, we can change this," Prof. Joy Lawn, a newborn health expert and researcher at the London School of Hygiene & Tropical Medicine, said with deep emotion, during the high-level round table discussion on newborn health in June 2024.

She argues that Uganda is behind in meeting its SDG commitments on neonatal care and health by 2030, emphasising the need for the country to move twice as fast. One critical issue, she points out, is the rapid population increase and unmet need for family planning, which necessitates building twice the number of schools and hospitals just to keep still.

Currently, nearly 90 per cent of births occur in hospitals in Uganda, although the country faces challenges in the quality of care essential for reducing stillbirths and saving newborns and mothers. Uganda also grapples with high neonatal mortality rates, insufficient hospital facilities, inadequate access to family planning, and a lack of trained healthcare staff and essential medical devices. Currently, our neonatal mortality rate, which is the number of neonatal deaths within the first 28 days of life, measured per 1,000 live births in a year, stands at 22. The goal is to reduce this to 19 by 2025, to meet Uganda's National Development Plan III targets and 12 by 2030, to meet Uganda's joint SDG 3.2 targets.

However, findings from the situation analysis show that over the years, Uganda has made some strides, although the country is yet to realize its 2020 joint targets for better care, which aims at 80 per cent of babies and mothers receiving postnatal care, and 80 per cent districts having at least one WHO-recommended level II newborn care unit.

For Prof. Lawn, neonatal care isn't charity but an investment in Uganda's future. She advocated for a comprehensive approach to significantly reduce newborn mortality rates and improve health outcomes for its youngest

**Uganda loses over 62,000 lives around the Time of birth alone.**

citizens. This forms part of the recommendations of the latest situation analysis for newborn health and care in Uganda, conducted in 2023 with technical support from Makerere University School of Public Health, as part of our contribution to enhancing public health interventions through evidence generation.

The School has also supported initiatives with partners like the OMWANA trial's impact on neonatal care and the Investment Case for Small and Sick New-born Care and research to improve the use of kangaroo mother care and respiratory support for preterm infants.

The situation analysis survey notes that Uganda needs significant investments, in addition to adopting WHO recommendations like the kangaroo mother care for preterm infants, as an important intervention for small and sick newborns in communities and health facilities.

In the latest UBOS 2022 Uganda Demographic and Health Survey (UDHS), neonatal deaths remain unacceptably high. Persistent regional variations also exist, the highest being in West Nile, at 34 deaths per 1000 live births, and the lowest in the Karamoja, at seven deaths per 1000 live births, as found in the updated situation analysis.

"Based on the findings, birth asphyxia (lack of oxygen) was the leading cause of newborn deaths at 60 per cent, followed by prematurity (a baby born earlier than the normal 40-week

pregnancy period) and related complications at 23 per cent and neonatal sepsis (severe infections for newborns) at seven per cent." The situation analysis report reads in part.

According to the report, birth asphyxia, which is a condition where a newborn doesn't get enough oxygen before, during, or immediately after birth, potentially causing brain damage and other serious complications, is the leading cause of newborn deaths in Uganda. This condition is preventable, so the high number of deaths from it highlights problems with the care given during birth, especially in reviving newborns who are not breathing properly.

Still, some regions have shown notable progress while others continue to lag. Neonatal mortality in Busoga has remained relatively high, with no signs of change, suggesting challenges in healthcare delivery. In Kampala, a reduction from 32 deaths per 1000 in 2016 to 19 deaths per 1000 in 2022 was noted. West Nile experienced a setback with an increase in neonatal mortality rates from 28 deaths per 1,000 live births in 2016 to 34 deaths in 2022.

One of the key findings of the report is the alarmingly low rate of male involvement in maternal health, with only about 36.8 per cent of pregnant women accompanied by their male partners for antenatal care. This lack of male participation found in the survey is a significant barrier to comprehensive maternal and newborn healthcare, especially concerning decision-making and support by male partners during critical stages.

Moreover, the adoption of optimal essential newborn care practices stands at a mere 15 per cent countrywide, indicating a substantial gap in knowledge and practice regarding essential newborn care. Specifically, figures reveal that optimal cord care practices are at 45 per cent, optimal thermal care is at 27 per cent, and optimal breastfeeding practices are at 69 per cent.

The report highlights key strategies to address the root causes of newborn mortality in Uganda. These include reducing teenage pregnancies, improving awareness and access to family planning, strengthening contraceptive supply chains, and utilizing community health workers to boost health service uptake in underserved areas. Prioritizing quality antenatal and essential newborn care is emphasized as critical for improving maternal and newborn health outcomes, particularly in regions with low service coverage.

The recommendations emphasize enhancing health facility readiness by scaling up small and sick newborn care at national and regional referral hospitals and implementing quality standards for newborn care and infection prevention. At the community level, it calls for comprehensive care guidelines, aggressive education campaigns in hard-to-reach areas, and strengthened human resources for newborn care, with priorities that include evidence-based policymaking, data-driven decision-making, improved partner coordination, and research uptake to optimize healthcare programming for better maternal and newborn outcomes.

Prof. Rhoda Wanyenze, the Dean of Makerere University School of Public Health notes that as the School celebrates 70 years of excellence in training, research, and community service, the School reaffirms its commitment to generating evidence and driving initiatives aimed at reducing maternal and neonatal deaths, ensuring healthier futures for all families.

*Mother holding a newborn baby, Moroto RRF Hospital, Karamoja. Photo credit: Doctors With Africa CUAMM.*

# Urban Health in Uganda — A New Frontier

*L-R: Dr. John Chrysostom Ssempebwa, an Associate Professor of Environmental Health at the Department of Disease Control and Environmental Health. Prof. Lynn Atuyambe, the Head of GeoHealth-hub in Uganda and researcher on air pollution.*

As Uganda races toward a future of urbanization, the health landscape is evolving in dramatic ways. By 2040, Ugandan cities are expected to be home to over 30 million residents—six times the number a decade ago. As urbanization continues to rise at an annual rate of 5% in East Africa, the need for comprehensive strategies to manage urban health becomes increasingly critical.

Working with partners, MakSPH is committed to addressing urban health as a critical public health concern. With millions lacking access to basic sanitation and facing rising levels of pollution, Dr. John Chrysostom Ssempebwa, an Associate Professor of Environmental Health at the Department of Disease Control and Environmental Health since 2004, has been instrumental in educating students in environmental health and developing a skilled workforce dedicated to pollution prevention.

His research focuses on the interplay between social, physical, environmental, and infrastructural resources in urban settings and their implications on public health. As urbanization intensifies, it leads to increased population density, which exacerbates issues such as poor solid waste management, water supply, vector and vamine control, and various forms of pollution, including air, noise, soil and water.

Dr. Ssempebwa recognizes that a healthy environment is foundational to the well-being of its people. His work includes a 2007-2015 project funded by Higher Education for Development under USAID in the slums of Mukono, and Kampala and another 2007-2010 project funded by IDRC in the slums of banda and Kampala. From interventions to improve health, empowering them to improve their situations, to exchange visits among the

**As urbanization intensifies, it leads to increased population density, which exacerbates issues such as poor solid waste management, water supply, vector and vamine control, and various forms of pollution, including air, noise, soil and water.**

*Car leakage are one of the causes of environmental pollution in Uganda.*

residents of these communities, the projects impacted communities but also showed how much work and investment is needed to better urban health.

Improvement, notes Dr. Ssempebwa, will require sensitization efforts so that the urban community gets concerned and informed as well as public and private investment in urban health. He urges organizations like UNICEF and WaterAid to consider urban centre interventions on top of their largely successful programs in rural Uganda. He also thinks it is high time private corporate companies joined efforts to improve urban health.

## MORE THAN A NUISANCE, NOISE POLLUTION IS A HEALTH RISK

Noise pollution is increasingly recognized as a significant public health concern, transcending its traditional perception as merely a nuisance. Defined as the propagation of sound that adversely affects the physiological and psychological well-being of humans and animals, it is often overshadowed by more visible forms of environmental pollution, such as air and water contamination. However, the health risks associated with noise pollution are profound and multifaceted. Chronic exposure to noise can lead to a range of health issues, including cardiovascular diseases, sleep disturbances, and cognitive impairments, mostly among children and the elderly. The World Health Organization has identified noise as the second largest environmental cause of health problems, following air pollution, highlighting its critical impact on public health.

The sources of noise pollution include loud music, construction activities, traffic, and industrial operations. Residents near major roads, airports, and manufacturing sites are susceptible to the effects of high noise levels, including hearing loss. A recent WHO report indicates that approximately 1.1 billion individuals aged 12 to 35 globally are at risk of hearing loss due to the pervasive noise pollution in many urban areas. This risk is primarily attributed to unsafe use of personal audio devices and exposure to high sound levels in entertainment venues such as nightclubs, and churches. Noise pollution is also linked to various physiological and psychological effects, including increased blood pressure and stress-related disorders.

**A recent WHO report indicates that approximately 1.1 billion individuals aged 12 to 35 globally are at risk of hearing loss due to the pervasive noise pollution in many urban areas.**

Prof. Ssempebwa considers community engagements key to dealing with the ignorance around noise pollution. "In Uganda, we have standards that regulate noise pollution. NEMA has this, and it enforces that. The only challenge we have is that the general community is not well informed about the standards," he says. "*This brings us back to working with the urban authorities in that they need to disseminate the information about these. Most of our communities are ignorant; they don't know that we have noise-sound standards and there should be limits for different settings.*"

The Uganda National Environment (Noise Standards and Control) Regulations of 2003 establish safe noise levels for human health, setting a maximum of 85 decibels. In residential areas, allowable noise levels are capped at 60 decibels during the day and 40 decibels at night for venues such as discotheques, places of worship, and construction sites. Commercial areas have a permissible noise threshold of 75 decibels during the day and 50 decibels at night. For industrial zones, the limits are 85 decibels during the day and 65 decibels at night. This legislation also empowers local councils to develop regulations addressing noise and vibration pollution, in accordance with the Local Governments Act of 2015.

For water contamination, Dr Ssempebwa and his colleagues Abdullah Ali Halage, Charles Ssemugabo, David K. Ssemwanga, David Musoke, Richard K. Mugambe, and David Guwatudde (all from MakSPH Departments of Disease Control and Environmental Health, as well as Epidemiology and Biostatistics) conducted bacteriological and physical quality of locally packaged drinking water in Kampala. They found out that the majority of sachet water samples were contaminated with total coliform above acceptable limits for human consumption. The researchers recommended intensified surveillance and enforcing strict hygienic measures in packaged water industries and retail outlets to improve water quality. Currently, Dr. Ssempebwa is working on a project assessing the relationship between air pollution and TB transmission.

## WASTE OIL AND MUSHROOMING FUEL STATIONS

Waste oil consistently ranks among the top global pollutants, particularly in aquatic environments. Many drainage systems discharge directly into rivers, streams, and lakes, allowing oil to flow into the water. This pollution creates a thin film on the surface, blocking oxygen from reaching aquatic plants and animals, severely disrupting the ecosystem.

Furthermore, the construction of fuel stations in wetlands, notes Dr. Ssempebwa, poses a significant

threat to both community and environmental health. Fuel tank leaks compromise water supply. *"The oil creates a barrier on the water's surface, drastically reducing oxygen levels and leading to decreased fish productivity and the decline of plant life. As we continue to develop urban centers, we must recognize the long-term implications of these practices on both public health and environmental sustainability,"* explains Dr. Ssempebwa.

In 2009, Dr. Ssempebwa and colleagues conducted a study that found a lot of used motor engine oil being generated in garages and at fuel stations in Kampala city, but without proper recycling mechanisms. *"These oil residues contain harmful pollutants, some of which are known carcinogens, and can significantly impact aquatic life by disrupting reproductive systems and overall health.*

*As the number of vehicles on our roads increases and we seek cheaper fuel options, the volume of used motor engine oil will only rise, making it imperative that we address this issue before it becomes an even greater threat to our health and the health of our ecosystems."*

# Creating Safer Workplaces

## Issues in Occupational Health in Uganda

*L-R: Dr. Marianna Agaba Nyangire, Assistant Lecturer of Occupational Health, Department of Disease Control and Environmental Health, MakSPH. Prof. William Bazeyo, former Dean, MakSPH and distinguished researcher in occupational health.*

As the global workforce grows—now including nearly half of the world's population—there's an urgent need to prioritize the health and safety of workers. Every day, millions of people face workplace hazards, from physical dangers and chemical exposures to the pressures of psychological stress. Protecting their well-being isn't just about boosting individual productivity; it's about building a healthier, more sustainable society.

In regions like Uganda and much of sub-Saharan Africa, the situation is even more pressing. Without robust regulatory standards, workers in many industries are left vulnerable to avoidable risks. As cities expand and economies grow, the challenges posed by urbanization and environmental issues demand immediate attention. That's where comprehensive training in occupational health and safety becomes essential.

By equipping experts with the knowledge and tools to protect workers, we ensure that economic progress doesn't come at the cost of human health. This isn't just about preventing harm—it's about making a long-term investment in a workforce that can thrive. For us at MakSPH, prioritizing occupational health and safety today means securing a future where workers are not only safe but empowered to contribute fully to the development of their communities, the country and the world at large.

While all stakeholders—including the government, employers, and employees—are required to play their part, there are policy and knowledge gaps still hindering efforts to improve the wellbeing of workers.

Studies have linked workplace hazards to non-communicable diseases (NCDs). For example, reports from hospitals such as Mulago have indicated a rise in cases of silicosis (pulmonary fibrosis) associated with working in hardware stores, cement factories, and mining settings. Cancers, respiratory diseases like asthma, obesity, and mental disorders are the other NCDs linked to workplaces.

Apart from being breeding grounds for chronic diseases, unsafe and unhealthy workspaces are also responsible for accidents, injuries, disabilities, and deaths. These do not only pose serious setbacks for families, companies, or organizations, but they also affect realization of development goals such as human capital development, under which health and wellbeing are key pillars.

Despite the damning risks of inaction on occupational health and safety, the issue is yet to get the attention it deserves. Most employers and workers are either unaware of or simply choose to ignore safety and health at workplaces.

Concerned about the gaps in awareness around occupational health and safety, even among university graduates, Dr. Marianna

Agaba Nyangire, an Assistant Lecturer of Occupational Health at MakSPH's Department of Disease Control and Environmental Health, sought to make a difference. Transitioning from medical practice to academia, she set out to teach, sensitize, and advocate for better policies and interventions to make employees and workplaces safer.

- At MakSPH, occupational health and safety is embedded in the curriculum for academic programs such as Bachelor of Environmental Health Science (BEHS), Master of Public Health (MPH), and a more recent subject matter specific Master of Environment and Occupational Health (MEOH). In these programs, says Agaba, the school *"actively teach[es] occupational health and safety."*

With the number of students who are doing research or field reports in occupational health and safety increasing, efforts by Agaba and her colleagues are paying off. She is also on a mission to identify and engage colleagues in some areas of occupational health and safety where research can be done.

Her own research, assessing the prevalence of dermal (skin) symptoms and factors associated among flower farm workers in the Kampala Metropolitan Area, Uganda, found evidence of a number of injuries and skin symptoms like inflammation of the skin, especially among sprayers and greenhouse workers.

*"It was more to do with knowledge: workers not knowing. They are aware of the impact of the chemicals or the hazards in their environment, but to some degree, the caution is not taken on their part,"* she explains. *"Even when the employer has gone a step ahead to provide some things like personal protective equipment, you find that there is a gap in the use of the measures that have been put there."*

To improve occupational health and safety, Agaba says there is work to be done at levels, including national and workplace (employees and employers). At the national, the government needs to put in place a policy to implement the Occupational Safety and Health Act, 2006. The national policy can also be a guide for workplaces to draft policies for promotion of safety and health of their workforce.

## Changes in work

Agaba also notes that a lot has changed since the current Act was passed and that there is a need for an update. *"The nature of work activities in 2006 and now 2024 has changed over time. The types we have massively moved from analog to digital. So, the hazards have changed, which means the risks have changed,"* she says. *"Meaning that the nature of injuries and diseases have also transformed with that change. So, there's the issue of having regulations that need to be revisited, or to be revamped, given the time shift."*

She also thinks it is high time the bodies that oversee health and safety came out strong on advocacy and promotion of health and safety. Most of the advocacy and sensitization of workers and policymakers happens around the World Day for Safety and Health at Work, marked every April 28. All stakeholders, should develop the habit of vocalizing health and safety every month of the year as a way of promoting compliance.

The other key issue to focus on is inspection of workplaces to ensure compliance with existing guidelines, policies and law. According to Agaba, that would require the government to recruit more inspectors given how many new workplaces open up every year. She adds that workplaces themselves need to conduct routine inspections to identify different hazards, risks, and mitigation measures.

## Women's workload

The MakSPH researcher also emphasizes the issue of gender and occupational health and safety, noting that employers must be cognizant of the biological differences between female and male employees. These differences, she continues, should form part of the basis of the assignment of tasks. *"For certain chemicals, when females are exposed, it affects things like their fertility. So, in that case, if the science has shown that exposure to a certain chemical will affect women's fertility, we would discourage employees in that area,"* she adds.

Employers must also be mindful of women's workload since formal employment does not make them stop doing domestic work. *"You have two people stepping out of their home to go and serve in the same position, a man and a woman. But when we go back, the woman's duties continue: she still cooks, she still cleans, she still does childcare, and the rest,"* she notes. *"The workload on that woman affects her in such a way that we have now complaints of mental breakdowns, anxiety, depression, and stress more in women compared to men."*

*Two machine operators work on a construction site, handling terrazzo flooring. Using wet methods significantly reduces airborne silica dust generated during milling or grinding of silica-containing materials.*

# Family Planning in Uganda

## A Growing Success

*Dr. Fredrick Makumbi, Assoc. Professor, MakSPH.*

When families can plan and space their pregnancies, they invest more in each family member, and women with fewer children, have more opportunities to earn wages, and boost household income. Therefore, family planning plays a critical role in improving the quality of life for families and reducing poverty. Also, family planning saves lives by preventing unintended pregnancies, reducing abortions, and lowering the risks of complications from pregnancy and childbirth.

Recent data from the Uganda Demographic Health Survey (UDHS) 2022 shows encouraging progress: the modern contraceptive prevalence rate increased from 39% in 2016 to 43% in 2022, while unmet need for family planning decreased from 28% to 22%. Furthermore, the PMA Uganda survey (2022) reported that 64% of women access their modern contraceptives from public health facilities, and the unmet need for child spacing has dropped to 10%.

MakSPH has been at the forefront of family planning research, using Performance Monitoring for Action (PMA) surveys to gather critical data that informs national policies. Dr. Fredrick Makumbi, Associate Professor at MakSPH, emphasizes that MakSPH research has directly influenced national strategies, such as the Costed Implementation Plan (CIP) 2020-2025, which aims to reduce unmet need to less than 10% by 2025.

PMA-Uganda surveys have also provided essential evidence for improving family planning services, identifying regions where access is limited, particularly for rural women and adolescents. Moreover, these surveys track the discontinuation of family planning services and help to mitigate the risks of unintended pregnancies.

Dr. Betty Kyadondo, Director of Family Health at the National Population Council (NPC), notes the importance of PMA data for policy and programming, especially in addressing regional disparities, has been tremendous. The PMA's work has been instrumental in integrating family planning indicators into Uganda's national surveys and tracking adolescent use of family planning, a gap previously unaddressed.

Family planning research at MakSPH has supported policy advocacy and provided a reliable indication of the country's progress toward achieving family planning goals.

*"Using the facility-based indicators, PMA surveys showed the girls younger than 15 years who were using family planning,"* notes Dr. Kyadondo.

From a programming perspective, Dr. Kyadondo observes that the data from PMA fills in the gaps before the release of the next Uganda Demographic and Health Survey findings.

We need to ensure that every Ugandan, including men, women, and adolescents who are sexually active, has access to life-saving family planning services.

**Recent data from the Uganda Demographic Health Survey (UDHS) 2022 shows encouraging progress: the modern contraceptive prevalence rate increased from 39% in 2016 to 43% in 2022, while unmet need for family planning decreased from 28% to 22%. Furthermore, the PMA Uganda survey (2022) reported that 64% of women access their modern contraceptives from public health facilities, and the unmet need for child spacing has dropped to 10%.**

# The Future of Infection Prevention and Control in Uganda

*Mr. Fred Twinomugisha*

Infection Prevention and Control (IPC) is the cornerstone of safe and effective healthcare delivery, protecting patients, healthcare workers, and communities from healthcare-associated infections (HAIs) and antimicrobial resistance (AMR). In Uganda, where infectious diseases remain a leading cause of illness and death, the importance of robust IPC systems cannot be overstated. Yet systemic challenges that range from limited resources, and inadequate training to weak enforcement of IPC standards continue to undermine progress.

Healthcare-associated infections affect as many as 28 per cent of patients in Ugandan health facilities, far exceeding the global average of seven per cent, according to the World Health Organization. These infections significantly increase healthcare costs, prolong hospital stays, and contribute to the growing AMR crisis. "Without a well-structured IPC system, healthcare facilities remain vulnerable to outbreaks," explains Mr. Fred Twinomugisha, an IPC expert and a PhD student at Makerere University School of Public Health.

Mr. Twinomugisha argues that it is not just about addressing infections that occur but preventing them altogether, as prevention is the foundation of effective healthcare. MakSPH has been instrumental in addressing these gaps through innovative interventions, most notably the introduction of Uganda's first structured Postgraduate Diploma in Infection Prevention and Control (PGD IPC), for which Mr. Twinomugisha has been spearheading, an area where he is also currently undertaking his PhD training and research.

This programme was developed to provide healthcare professionals with the technical knowledge, leadership skills, and practical tools needed to design, implement, and sustain IPC measures. "The PGD IPC programme blends theoretical learning with practical application, ensuring that graduates can immediately translate their training into action. They leave the programme equipped to lead IPC initiatives in their facilities and promote safer healthcare practices." Mr. Twinomugisha notes in an interview. So far, seven fellows have already piloted the programme, setting the stage for its eminent rollout.

MakSPH's contributions extend beyond formal education, into practice. In collaboration with the Ministry of Health and with support from the Centers for Disease Control and Prevention (CDC), the School introduced virtual IPC Communities of Practice (CoPs). These digital platforms, implemented across 764 healthcare facilities in 130 districts, allowed healthcare workers to exchange knowledge and best practices on topics such as hand hygiene, antimicrobial resistance, and outbreak preparedness.

Over two years, the CoPs achieved a 30 per cent improvement in Infection Prevention and Control knowledge among participants, fostering peer-to-peer learning while minimizing logistical and financial barriers. The Communities of Practice were especially impactful during the COVID-19 pandemic. Twinomugisha argues that it made it possible to reach healthcare workers across the country, providing timely support and education at a scale that would have been impossible through traditional methods without the virtual platforms.

Despite the inroads made so far in entrenching Infection Prevention and Control practices in Uganda, some challenges persist. Many healthcare facilities still lack basic resources, such as clean water and hand hygiene supplies or personal protective equipment, which are critical for effective IPC.

Recognizing these barriers, Makerere University School of Public Health has worked to institutionalize IPC as a central pillar of Uganda's healthcare system. The CoPs platform has been integrated into the Ministry of Health's National IPC Strategic Plan (2023–2028), ensuring its sustainability. Similarly, the PGD IPC program is building a cadre of skilled IPC professionals capable of addressing Uganda's current challenges while preparing for future health crises like the experience we have had with Ebola and COVID-19.

As MakSPH celebrates 70 years of excellence in education, research, and service, its work in IPC exemplifies its enduring commitment to improving health outcomes for Ugandans. By fostering a culture of prevention, the School is positioning itself to address today's challenges and lay the foundation for a resilient healthcare system equipped to face future threats. In this regard, IPC is essential to achieving universal health coverage and ensuring the safety and well-being of all Ugandans, especially patients and frontline health workforce, to avoid tragic incidents like the death of Dr. Mathew Lukwiya, our fallen alumnus.

*Group photo with 2024 IPC fellowship graduates.*

# MakSPH pioneers ground-breaking graduate program in Health Informatics



*Left to right: Dr. Roy William Mayega, Ms. Irene Wanyana and Prof. Nazarius Mbona Tumwesigye, who have been at the fore front of the Health Informatics Programme.*

Makerere University School of Public Health (MakSPH) offers the first Master's Degree in Health Informatics (MHI) in Uganda at an opportune time. Not only is health information one of the central cross-cutting tools in the WHO Health Systems Building Blocks model, but data and information have become pivotal in optimizing public health programming and effective service delivery.

The health sector generates loads of data from routine surveillance activities, clinical care, and surveys. However, enormous challenges exist in harnessing this data to inform decision-making and planning. Systems for the capture of health data at the point of care are still largely paper-based, affecting timeliness, completeness, and accuracy, and causing duplication. Operational-level decision makers and national-level policymakers lack capacity to collate, analyze, and visualize data in usable formats.

Programs like the District Health Information System (DHIS), which has built immense capacity for local governments to manage health data, have realized tremendous progress. However, much more needs to be done to build systems necessary to transform how information is utilized for action and how large datasets can be mined for early warning signals for better management of pandemic preparedness and other priority health threats of the 21st century—and this is where MakSPH's Health Informatics training program comes in.

The Master's degree in Health Informatics is a cross-disciplinary graduate program that builds skills in the application of informatics approaches to support health programs. The goal of the program is to produce graduates with the competences and attitudes needed to apply robust informatics tools to solve problems in the healthcare setting to improve health service delivery.

The program equips students with leadership skills to identify and address challenges in organizational settings, as well as the ability to detect inequalities from gender, socio-economic status, and other disparities from existing health data.

The School of Public Health and the College of Computing and Information Sciences (CoCIS) jointly and equally deliver the program, showcasing its cross-disciplinary approach at the intersection of computer science, public health, and innovations. Launched in 2016, the MHI has helped students gain hands-on experience through field attachments and research projects that utilize advanced technologies such as big data analytics, artificial intelligence, and natural language processing (NLP).

The demand for health informatics skills in organizations is high. Since its inception in 2016, the MHI program has produced 31 graduates to contribute to addressing this need. Notably, before graduating, various industry players in the health sector and beyond engaged the majority of students in the program to support the development of their information management systems.

Illustrative examples of what the students have done in this domain include the following, to mention but a few:

- Students have helped to build dashboards to enable better visualization of healthcare data and health outcomes and to facilitate decision-making both in health care environments and by policymakers.
- Globally, there is a movement towards big data, artificial intelligence, and machine learning. Students from HI have experimented with developing new risk assessment tools for chronic non-communicable diseases, aiming to identify high-risk groups early.
- Students have conducted extensive studies to evaluate new machine-learning models for

the analysis of epidemiological data, which are more robust than traditional tools based on statistical models. We hope that these new approaches will improve the prediction of health outcomes.

- Students have experimented with natural language processing tools to build tools that can mine unstructured patient data on the go. These tools can be very handy in building patient triage systems and tailored messages for patient education.
- Students are experimenting with new analytical tools that can enable us to use existing data to look into the future for better disease forecasting and preparedness.
- Students are working with integration of artificial intelligence capabilities into existing health information systems such as DHIS2 and interoperability to reduce siloes.

Many of our alumni have secured leadership roles in organizations such as the Ministry of Health, METS, UNICEF, and Rocket Health and are contributing significantly to Uganda's health sector and policies.

The program's reputation is growing beyond international borders. Recently, a team of four MHI students won the Enterprise Architecture Student Award from the Open Group Architecture Framework Organization in India. Our graduates have also gone on to pursue PhD opportunities at leading universities in South Africa, Sweden, and Spain to further their academic and professional careers.

During a recent program evaluation, external stakeholders indicated that the program is very relevant to health services improvement. Organizations that hosted student interns from this program noted that they were well equipped with knowledge and skills required to support their informatics needs. The curriculum, in terms of internationalization, aligns with the consensus document on core competencies identified by the East African Health Informatics Association and benchmarks against several international HI curricula from leading universities.

We recently modified the curriculum to accommodate working professionals, offering more flexible options that blend on-campus, online, and self-paced learning. In addition, the introduction of a fully online Health Informatics Short Course has expanded the program's reach, attracted international participants, and demonstrated great strides towards health informatics education.

The MHI program also aims to establish advanced laboratories to foster student technological innovation in addressing critical health challenges. These labs should provide for increased computational power and servers that our students can use as they develop different applications in the field.

Through emphasizing international collaboration, the program aspires to attract a diverse range of students from Uganda, Africa, and beyond, reinforcing its role as a trailblazer in health informatics education. Makerere University's Master of Health Informatics is not only shaping future leaders but also transforming health systems through innovation, data-driven solutions, and a commitment to global health improvement.

**Dr. Roy William Mayega is the MHI Program Director, while Ms. Irene Wanyana is the MHI Program Coordinator**

*Master of Health Informatics orientation, 2024*

# The role of the Grants Office in Research Management

The Grants Office at Makerere University School of Public Health (MakSPH) is a vital force behind research and innovation. From helping with proposal submissions to managing final reports, the team expertly navigates the entire grant lifecycle, ensuring compliance, financial accountability, and smooth administration.

As MakSPH celebrates its 70th anniversary, the Grants Office shines as a cornerstone of success. It fosters collaborations, builds research capacity, and empowers researchers, allowing them to concentrate on their mission of advancing science and enhancing public health for everyone. The contribution of the Grants Office can be viewed through several lenses:

*Ms. Stella Kakeeto, MakSPH Grants Officer.*

### 1. Supporting researchers in the early stages of grant applications (pre-award)

A key aspect of the Grants Office's work is supporting researchers during the pre-award phase. The team actively seeks out funding opportunities and helps with proposal development, making sure everything aligns with donor standards. In taking care of the administrative details, the office allows researchers to concentrate on the scientific elements of their grants. Their efforts are guided by Standard Operating Procedures (SOPs) created by the Grants and Research Capacity Building Committee of the School, which help streamline the application process and make it more efficient.

### 2. Managing grants (post award)

Securing a grant is just the start of the journey. The Grants Office provides essential post-award support, ensuring that financial management, reporting, and compliance run smoothly. This support not only strengthens relationships with donors but also lays a solid foundation for future funding.

### 3. Fostering collaboration: MOUs and partnerships

Collaboration is essential for meaningful research and effective teaching and learning. The Grants Office is at the heart of fostering these partnerships, helping to connect people and ideas for greater impact.

### 4. Building the next generation of researchers: The Seed Grants Programme

One of the key contributions of the Grants Office is supporting the MakSPH Seed Grants Programme, which empowers early-career researchers through funding and mentorship. This support, enables early career researchers to conduct impactful projects, develop their skills and contribute to the school's research output.

To date, 27 seed grants have been awarded and implemented in underfunded and emerging areas of public health, as well as strengthening research in critical fields such as health systems, disease prevention and community health. The programme remains central to the MakSPH goal of nurturing the next generation of public health leaders.

### 5. Looking ahead to a bright future

The achievements of the Grants Office reflect the hard work and dedication of the grants support teams, the Grants and Research Capacity Building Committee, as well as the faculty and researchers at MakSPH. Looking ahead, the Grants Office will be committed to enhancing existing systems, supporting innovative research, and advancement of ongoing growth and excellence at MakSPH.

# MakSPH Redefining Fight Against Malaria




*Some of MakSPH researchers in malaria, left to right: Prof. Dr. Elizeus Rutebemberwa, Dr. David Musoke, Dr. Adoke Yeka, Dr. Victoria Nankabirwa*

Malaria continues to pose a significant threat to public health across Africa, despite years of efforts in prevention and treatment. In 2022 alone, the continent recorded 233 million cases and 600,000 deaths, with children under five, pregnant women, and other vulnerable groups bearing the brunt of the disease. Challenges such as climate change, drug resistance, and the ripple effects of the COVID-19 pandemic have further underscored the urgency for renewed commitments and innovative strategies to tackle this persistent health crisis, as highlighted in the 2023 World Malaria Report.

Uganda faces an alarming malaria burden, ranking third globally in the number of cases. In 2021, the country recorded approximately 13 million cases, representing about 5% of the global malaria burden. Tragically, Uganda also ranks among the top contributors to malaria-related deaths, with an estimated 19,600 fatalities in the same year. Malaria is the leading cause of morbidity and mortality in Uganda, accounting for 30-50% of outpatient visits at health facilities, 15-20% of all hospital admissions, and up to 20% of all hospital deaths. The climate in Uganda allows stable, year-round malaria transmission with relatively little seasonal variability in most areas. Malaria elimination and eventual eradication is a high priority goal for all endemic countries. It is a long-term, focused, and technical process that requires effective program management at all levels. Achieving Malaria eradication calls for re-aligning and reorienting the health system across all aspects of the building blocks but most importantly to address critical leadership and management capacity gaps.

Makerere University School of Public Health (MaKSPH) is contributing to the eradication of malaria efforts through training of human resources within high burden malaria countries. With support from the Bill and Melinda Gates Foundation, MaKSPH in collaboration with public health schools in five high-burden malaria countries (Uganda, Tanzania, Nigeria, the Democratic Republic of Congo, Niger, and Burkina Faso) has since 2021 been implementing the African Leadership and Management Training for Impact in Malaria Eradication (ALAMIME)

*Alamime Cohort 2 Training at RAN*

program. This work was later expanded to 9 countries and 11 universities across the 9 countries. The additional countries are: Sierra Leone, Togo and Benin. This initiative aims to transform public health strategies through leadership development. Effective leadership is required to successfully manage the continuum from malaria control to elimination and prevention of reintroduction. A key need going forward is a workforce that can rapidly assess failures and success and adapt to the changing malaria landscape. As part of this program, we have empowered leaders who are driving meaningful community change, fostering innovation, and leading the fight for a malaria-free future.

Dr. Tonny Opura, a clinician working with Amolatar District Local Government in Uganda, is a proud alumnus of the program from Uganda. The training has enabled him to effectively employ data-driven, SMART solutions to enhance malaria interventions in the region. His technical expertise has not only improved his own work but has also inspired colleagues to focus on malaria elimination. Reflecting on the program's transformative influence, Tonny notes how it has sharpened his perspectives and equipped him with essential skills to combat malaria. As a dedicated champion for malaria eradication, he and his fellow alumni are actively reshaping the narrative around malaria prevention in their communities.

"The training enhanced my analytic, data use, and evidence-based decision-making abilities," Dr. Opura states.

The ALAMIME program encourages alumni to design malaria control measures that are tailored to their specific region. Participants received hands-on training and interactive webinars to help them construct successful pilot projects that are being expanded. Adedoyin Oluwakemi, from Nigeria, worked with environmental sanitation officers and NGOs to distribute antimalarial drugs and mosquito nets while promoting hygiene.

"The training has increased my knowledge on eradication approaches and enabled me to involve primary health care facilities in our fight against malaria," Adedoyin Oluwakemi recounts.

From diversity to peer learning and collaborative work, the ALAMIME alumni network members describe the program as transformative, offering opportunities to "learn and unlearn" through their varied experiences. Adedoyin Oluwakemi emphasizes its value, crediting her continental collaborations for shaping her strategies in malaria eradication.

Banze Berchmans, a DRC trainee, says "understanding systems thinking and multi-sectoral action has deeply shaped my approach." Cross-border relationships are fundamental. ALAMIME helps alumni create long-term strategic goals and secure funding. The program acknowledges members' achievements to encourage them to fight malaria. Education from outstanding African professors and working together with peers inspired Banze, and every success story reaffirms his passion to ALAMIME's objective.

The ALAMIME story shows that tackling global challenges like malaria demands collaboration, innovation, and capacity-building. As alumni inspire, network, and innovate, the vision of a malaria-free Africa grows closer, paving the way for a healthier, more equitable future.

## Other Work

As the battle against malaria rages on, Uganda's situation underscores the urgent need for more resources, innovative approaches, and a solid health system strategy to tackle the malaria challenge and protect its most at-risk communities. Our role as MakSPH is to support actors with relevant evidence to act on.

For instance, Dr. Adoke Yeka, an MPH program alumnus (1999-2002) and Disease Control and Environmental Health lecturer, has made key contributions to malaria treatment research in Uganda. Dr. Yeka's extensive experience includes critical research on malaria treatment and prevention. Notable works include studies on the efficacy of various drug combinations for treating uncomplicated Plasmodium falciparum malaria, as well as evaluations of a combination of public health interventions such as indoor residual spraying and mass drug administration to accelerate

malaria burden reduction to achieve malaria elimination. These studies have led to major malaria treatment and control policy decisions across Africa.

A 2023 study led by MakSPH researchers including Douglas Bulafu, Bridget Nagawa Tamale, Rawlance Ndejjo and David Musoke uncovered serious problems with adherence to malaria treatment guidelines among healthcare workers (HCWs) in Uganda. While nearly all HCWs reported having access to diagnostic tools like microscopy and rapid tests, 47.5% still stocked non-recommended antimalarial drugs. Alarmingly, 36.0% did not refer severely ill patients to higher-level facilities in the past three months. Overall adherence to treatment guidelines was only 63.1%, falling short of the national target of 90%. The research indicated that HCWs with bachelor's degrees and greater knowledge were more likely to follow the guidelines, highlighting the urgent need for improved training and supervision.

For over 10 years, Dr. David Musoke, a Senior Lecturer in the Department of Disease Control and Environmental Health at MakSPH, has led a team doing research on integrated malaria prevention in rural settings in Wakiso District. The integrated approach advocates the use of several malaria prevention measures at households to prevent the disease such as improving housing quality through screening windows and vents, early closure of doors and windows in the evening, and removing mosquito breeding sites around houses. These interventions are being explored to complement core malaria prevention strategies such as sleeping under insecticide treated nets and indoor residual spraying. Current evidence from the research has shown that community members have a high willingness to implement multiple practices at their households to prevent malaria. However, lack of knowledge of various measures, as well as concerns such as the cost of some methods, potential health effects of insecticide-based measures including insecticide sprays, and lack of access to certain methods such as mosquito repellents are barriers to using integrated malaria prevention.

Uganda is set to introduce the R21 malaria vaccine, marking a significant milestone in the fight against malaria, one of the country's leading health challenges. This rollout is part of a broader initiative supported by the Ministry of Health and partners, aimed at reducing the devastating impact of malaria on children under five. This development complements existing prevention measures, such as insecticide-treated nets and indoor spraying, offering a comprehensive approach to malaria control. In the long term, the malaria vaccine could transform Uganda's public health landscape, saving thousands of lives annually and fostering healthier communities. As vaccine roll-out ramps up, equitable distribution should be main focus to ensure all at-risk populations benefit from this life-saving intervention. After vaccine roll-out, it will be important to monitor post-authorization effectiveness and safety. As such, Dr. Victoria Nankabirwa and her team will be involved in a phase IV vaccine study to evaluate real-world vaccine effectiveness against severe malaria and the impact of the vaccine on all-cause mortality.

*The African Leadership And Management Training for Impact in Malaria Eradication (ALAMIME) partner meeting at Imperial Golf View Hotel -Entebbe, in August 2023*

# Peter Waiswa: A Personal Mission in Maternal and Newborn Health

Growing up in eastern Uganda, Peter Waiswa watched helplessly as preventable deaths claimed some of his beloved siblings and community members. He resolved he would do something about it. Now an Associate Professor specializing in in health policy and systems with a special focus on maternal, newborn and child health, he has made an invaluable contribution to efforts for improving healthcare provision in Uganda through his decades-long dedication. He spoke to *the MakSPH@70 Magazine* team on his journey thus far. Below are the excerpts:

### *Who is Peter Waiswa?*

I was born into a large family. I grew up initially in a village, so I am a villager. I continued living in the village until I finished my primary four. Later on, I studied to be a doctor, and after my internship, I actually resigned from an international job here in Kampala and went to work back home in Iganga. I might be going to global cities from time to time, but giving back to my home area is best.

### *What inspired you to focus on this area?*

Looking back, I lost many siblings; I lost many people in the village. But why did they die? I developed an interest in understanding why my siblings and village mates died at a young age. My mom is one of these super moms. Every mom is a super mom, but I think mine is special because she had four sets of twins, including me. But of those four sets, it's my pair who are a full pair now. For the others, she lost one of the babies. This is not just my mother's story; it is the story of many families. I wanted to do something to change this.

### *What is the current maternal and child health situation in the country?*

Maternal and newborn child deaths have significantly reduced in Uganda in the last 10 years. The number that still dies every year, just around the time of birth, is about 73,000. This includes about 26,000 stillbirths, about 32,000 newborn deaths, and almost 5,000 mothers—related to being pregnant and giving birth. I have been calculating this. It is like losing 14 taxis full of people a day.

### *Whom should we blame whenever we lose a mother or child, say in a hospital?*

Well, it is the fault of multiple parties. Firstly, the government bears some of the blame, as we now enjoy the right to health in Uganda. Some time back we went to the Constitutional Court and we sued the government for abusing the rights of women. We won the case called Petition 16. The government did not appeal the ruling, upholding the right to health in Uganda. The Constitutional Court ordered the government to take certain actions. A requirement is that the government report annually on the number of women who die in facilities, why, and what they did. The court also ordered the government to improve everything that you require to save women and babies, including midwives and equipment.

But as I said, there are multiple parties to blame. Communities and families also have responsibilities to save each other. The husband

*Dr. Peter Waiswa*

or whoever is responsible for the pregnancy, and family members also have the responsibility to ensure that this mom gets care. And so, do our local leaders, churches, mosques, cultural leaders, and more.

***What would you say are some of the major contributions of the school towards addressing maternal and child mortality and morbidity?***

The School is the trusted source for evidence, science, and policy in the country today and beyond. So, we've contributed a lot! Have we solved the problem? No. The School has researchers in this space [to generate knowledge and evidence on how we can develop more effective strategies]. It's doing a lot of work. The team I work with at the Makerere University Maternal, Newborn and Child Health Centre of Excellence does a lot of work on maternal, newborn and child death, family planning, immunisation, other forms of reproductive health, HIV/AIDS, costing, and more.

***Which areas need more work to improve mother and baby survival?***

We have an agenda as part of our strategic plan, but I think we need to have proper funding to implement it. Undoubtedly, the school is making some progress by providing funding for younger researchers to compete, but it's not sufficient. I think the School has demonstrated that it can be trusted with money. It is perhaps the most powerful institution within Makerere University. You can trust it with money because of good management, good productivity, and positive engagement with partners like the Ministry of Health and partners in the country, in the region, and abroad. The school is also quite immersed in the communities.

I perceive a positive outlook. The school has made its contribution, but the challenge is bigger. We just need more research. There is no country that has solved this problem. So, if America is still losing mothers and babies a lot, then even countries like Uganda need to invest more. Uganda, in comparison to its regional peers, is lagging behind in certain areas. To make an impact, I believe we must combine this academic capacity with the ability to deliver quality and equitable services.

***In summary, from your work, what have been the major things learned and your main recommendations for the future?***

Three things for me. We need to empower households and communities to determine their own needs. As they say, health is made at home and in communities, and hospitals only fix it if it breaks down. We should never think we are going to do it for them. We need to do simple things first. Things like attending and getting antenatal and delivery care and providing the content; clean hospitals; people being treated well and with dignity; and being in a clean environment. If we can't do simple things, it's difficult to do more complex ones, like C-sections. We must also follow standards and ensure accountability for what we do. And if you cannot measure it, you cannot say you can improve it: so always measure and use the data to inform improvement.

## Prof Peter Waiswa Quick Profile

Dr. Peter Waiswa, a Ugandan medical doctor and public health specialist, holds a joint PhD and postdoctoral fellowship from Makerere University, Uganda, and Karolinska Institutet, Sweden. He is an Associate Professor at Makerere University School of Public Health and a visiting researcher at Karolinska Institutet since 2013. Before academia, he served as a district medical officer in Uganda's Ministry of Health for eight years. Dr. Waiswa founded and coordinates the INDEPTH Network Maternal and Newborn Research Group in Ghana and Makerere University's Maternal, Newborn, and Child Health Centre of Excellence. He is highly published, with over 200 peer reviewed articles to date, and an H-index of 50. His extensive publications span across health systems, policy, and implementation research, with a particular focus on maternal, newborn, and child health. He actively contributes to policy, advocacy, and planning at local, national, and global levels, including with WHO and UNICEF. Dr Waiswa is a member of the World Health Organization's (WHO) Advisory Board (STAGE): an independent group of experts that advise the WHO Director General on Maternal, Newborn, Child, and Adolescent Health. He is also founder and chairman of Busoga Health Forum, a membership body of over one thousand health workers.

# Combating Neglected Tropical Diseases

## It's not over until it's over

Researchers from Makerere University School of Public Health (MakSPH) have been involved in efforts to come up with solutions to combat neglected tropical diseases (NTDs), and for one of them, bilharzia, there is a glimmer of hope, especially for school-going children below the age of six.

The WHO's plan to end NTDs from 2021 to 2030 says that NTDs are "ancient diseases of poverty" that plague more than a billion people around the world, mostly in tropical and subtropical areas and affect the weakest and most disadvantaged groups.

According to the Uganda Neglected Tropical Diseases Master Plan 2023-2027, the country's NTDs list includes elephantiasis, bilharzia, intestinal worms, river blindness, trachoma, sleeping sickness, plague, Buruli Ulcer Disease (BUD), rabies, scabies, jiggers, brucellosis, snake bite envenoming, and leprosy. The disease burden stands at over 40 million people suffering from at least one NTD.

Fred Nuwaha, a professor of disease control and prevention at MakSPH, has been involved in studies on NTDs like bilharzia and river blindness, as well as other diseases: malaria, TB, HIV/AIDS, and non-communicable diseases (NCDs). As someone who went to Uganda's best school, Makerere, as well as the UK's Leeds University and Karolinska Institute (a key MakSPH partner), Prof. Nuwaha says that recent progress in controlling bilharzia, a disease caused by parasitic worms or schistosomes that can be acute or chronic, is "successful," especially for children below six. The worms thrive in fresh waterbodies, making the country the cradle of bilharzia. The disease affects 7.4 million

*Prof. Fred Nuwaha Ntoni*

Ugandans, while about 15.7 million are at risk, according to the World Health Organization.

While there have been medicines administered to control bilharzia, these have not been 'child friendly.' What this meant was that children below six and those out of school did not receive the required treatment. The main control strategy for bilharzia was treatment. This implies that nearly everyone in the affected communities would receive treatment, with the exception of those who were older than six. Later, a survey revealed that children under six years old had the highest infection rate, according to Prof Nuwaha.

We were able to demonstrate that these children genuinely become infected and experience complications from schistosomiasis. *"The possible reason could be that these people are not receiving treatment, which means the burden was shifting to children less than six years."*

Researchers are upbeat about a new drug that the Pediatric Plus Quantum Consortium has developed to treat bilharzia in children. The drug will be piloted in Uganda, Kenya, and Ivory Coast in 2025. Even before the development of the new medicine, Prof. Nuwaha and fellow researchers had demonstrated that the right treatment would help children, prompting WHO to change its policy and recommend treatment. What has been lacking, notes Nuwaha, is child-friendly medicine that is easy to follow, causes less vomiting and less irritation to children, and is

**Bilharzia disease affects 7.4 million Ugandans, while about 15.7 million are at risk, according to the World Health Organization.**

sweet.

The works of parasitology researcher Prof. VL Ongom (R.I.P.), the first African head of the then Institute of Public Health, inspire and build upon MakSPH scientists' research into NTDs like bilharzia. Prof. Ongom's work in the 1970s was groundbreaking. However, there was a lull in research and attention to the disease, winning it a place on the list of NTDs in the London Declaration of 2012. With governments and organizations like WHO paying attention to bilharzia and other NTDs, mass drug administration (MDA) helped reduce disease prevalence among adults. But funding gaps threaten to reverse gains.

Prof. Nuwaha recommends sanitation and hygiene measures, which require access to safe water. Human waste or contaminated water transmits the parasites to the human body. *"Bilharzia is essentially a disease of water, hygiene, and sanitation. That means improvement in latrine coverage; if people build and use latrines, that's an intervention at the community level,"* he says. *"If people have safe water, safe water will also decrease the rate of infection with bilharzia."*

As MakSPH celebrates 70 years of impactful research, its faculty have no doubt made life-changing contributions to disease prevention and control. For bilharzia, a neglected tropical disease, the treatment for children will be a major breakthrough. But the professors' expertise will still be required as the world races to the 2030 deadline to significantly cut NTDs burden.

Prof. Nuwaha believes that for the coming decades, the School of Public Health should continue to conduct research and train students as a way of supporting efforts to reduce emerging diseases, some of which are infections like COVID-19 and non-communicable diseases such as diabetes and hypertension, which predispose patients to infections. Uganda's NCD burden stands at about 35 percent, lower than that of infections, which is at about 65 percent. *"In the next 70 years, you could go a bit wider from neglected tropical diseases to infections. We need to develop better medicines and better vaccines for controlling these infections because they will keep coming,"* Nuwaha says.

*A child draws water from a stream in Northern Uganda.*

# Overwhelming Healthcare Costs

## The Prolonged Quest for National Health Insurance

*L-R: Dr. Elizabeth Ekirapa Kiracho and Dr. Peter Waiswa, all Associate Professors of Health Systems Management, maternal health and health financing.*

In Uganda, the fragile balance between health and poverty hangs by a thread, where hope often feels like the only lifeline. For many, a single illness can plunge families into financial despair. Recently, an earnest appeal from Imam Idi Kasozi, a respected civic leader and philanthropist, resonated in one of the social media platforms: *"Dear OBs, let us join hands to help this family. Allah has blessed them with five children, but they remain in the hospital with a bill exceeding 25 million. Each day each kid is charged 100k [Ugx100,000]." The babies are delivered as P*remature in Mulago National Referral Hospital.

Almost immediately, a response emerged: "But where is the government in all this?" This sparked a heated debate, not from a lack of willingness to contribute, but from a growing weariness of continually facing unending expenses; From huge medical bills to school fees *Harambee*, and burial contributions. Yet, amidst this struggle, there lies a glimmer of hope: the promise of national health insurance.

As medical costs rise, out-of-pocket expenses have become a harsh reality for many Ugandans. Between 2019 and 2021, these costs surged by Shs 90 billion, trapping countless families in a cycle of debt. With insurance and government support often lacking, many find themselves juggling co-payments and unexpected medical bills, forced to choose between their health and financial stability. In this challenging landscape, the urgent need for a strong national health insurance system has never been clearer, offering hope for those overwhelmed by healthcare costs.

High out-of-pocket (OOP) payments contribute to household poverty and indicate that poor and vulnerable groups struggle to access healthcare. OOP payments reached Shs 2.21 trillion in FY2019/20 and increased to Shs 2.30 trillion in FY2020/21. However, their percentage share of Current Health Expenditure (CHE) fell from 29.9% in FY2019/20 to 27.4% in FY2020/21, according to the report.

Health planning policy specialists at Makerere University School of Public Health (MakSPH) are advocating for key interventions to reduce out-of-pocket expenses and achieve universal health coverage. They are pushing for the swift implementation of the National Health Insurance Scheme (NHIS) and urging the government to increase health funding to 15% of the national budget, as outlined in the 2001 Abuja declaration by African Union members. Currently, health receives only about 7.5% of the annual budget, hindering investments in essential infrastructure, adequate supplies, and hiring qualified medical personnel for improved service delivery.

The NHIS Bill was initially passed by MPs in March 2021, but the Ministry of Health later requested its withdrawal to address stakeholder disagreements. President Yoweri Museveni did not sign the bill. It was then sent to the relevant ministries—Gender, Labour and Social Development, and Health—which are said to have consulted stakeholders and submitted a revised version to Cabinet for approval.

In the revised bill, Ugandans are expected to contribute UShs 15,000 per month (UShs 180,000 annually) to create a pool of resources for guaranteed access to healthcare. Dr. Elizabeth Ekirapa-Kiracho, an Associate Professor at MakSPH and

a long-time advocate for national health insurance, believes this approach would effectively generate additional funding, as outlined in the health financing strategy.

*"But the insurance bill has not been signed, primarily due to concerns about the system's readiness to deliver adequate services and a lack of consensus among stakeholders,"* Dr. Ekirapa-Kiracho notes. *"So, we are still continuing to sound the bill that insurance can be useful as an additional form of financing, and we need to prepare the system so that we can be able to have insurance in place."*

She adds that other initiatives are emerging to tackle out-of-pocket costs and enhance health coverage, may include Community-Based Health Insurance (CBHI). Dr. Ekirapa-Kiracho has researched CBHI programs, particularly in western Uganda, and while she recognizes their potential benefits, she also acknowledges the challenges they face.

*"We don't have an implementation framework for community health insurance. So, that has limited the ability of community health insurance to grow and expand and contribute more significantly,"* she says.

Dr. Peter Waiswa, an Associate Professor at the School, emphasizes the importance of a national health insurance system where everyone contributes according to their income. *"The idea that everything should be provided for free is also a challenge,"* he notes.

Dr. Waiswa points out that health insurance alone won't solve the problem. He recommends additional interventions, such as enhancing productivity, lowering fertility rates, strengthening preventive measures, and improving the overall health sector to support the National Health Insurance Scheme.

In celebrating 70 years of public health, and recognizing the urgent health challenges facing Uganda, MakSPH dutifully urges the government to prioritize the implementation of a comprehensive National Health Insurance Scheme (NHIS). By taking decisive action now, the government can alleviate the financial strain of out-of-pocket expenses and foster a healthier, more resilient population for the future.

# Professor Christopher Garimoi Orach

## Pioneering Disaster and Refugee Healthcare Research

When Professor Gilbert Bukenya, the then Head of the Institute of Public Health in 1993, told Dr. Christopher Garimoi Orach to consider a career in academia, he was certain he wanted to take his mentor's guidance. However, what Orach did not know that day in 1996 was how much his experience in a refugee-hosting community and his job in Maracha would influence his research, making him an expert on refugee healthcare.

As a primary school pupil in Northern Uganda in the 1970s, Prof. Orach recalls seeing South Sudanese refugees, including *"children walking, sleeping by the wayside, and you would feel compelled to give them some water, some food to eat, as they were going towards town."* So, when UNHCR and other NGOs asked him to get involved in refugee healthcare, he easily joined efforts to improve the situation of refugees. Having completed his Bachelor of Medicine and Bachelor of Surgery from Makerere University in 1988, Orach returned home to work as a Medical Superintendent of Maracha Hospital.

He would return to Makerere University for a Master of Medicine in Public Health. Prof. Bukenya did not only fund part of his first master's research in maternal morbidity and mortality of Southern Sudanese refugees but also ensured that the findings were published in the Tropical Doctor Journal.

Required to do a second study, Orach secured funding from UNICEF to conduct maternal mortality estimation using the Sisterhood methodology. Sitting on the panel as Orach defended his master's thesis, Prof. Bukenya was convinced of his potential and asked him to consider staying at the Institute. He began off as the coordinator of a three-year grant funded by the European Union, became a research associate, and then delved deeper into refugee studies.

It would not be long before he worked on his first major research work, ground-breaking for the issue of refugee healthcare and based on which he carved his journey in refugee care research, started blossoming. Orach teamed up with Prof. Wim Van Damme of the Institute of Tropical Medicine Antwerp for a study titled; *Policy Issues in Refugee Healthcare in Sub-Saharan Africa. "We went with him [Van Damme] a lot to the field, and he told me, 'Chris, you are going to be the only expert; you are going to be an expert in this area,'"* he recalls.

### Research influencing policy

One of Orach's PhD studies was about reproductive health services of refugees in three districts of West Nile districts, which was published in the Lancet. It compared maternal mortality in refugee settlements and host population in Adjumani District. Findings revealed that the refugee maternal deaths were two times lower than those in host communities. *"We found that, to put it even in a simpler way, the maternal health of refugees was like they were living in urban settings where they did not face challenges of access to health services,"* he says. The study catapulted him into the global

*Prof. Christopher Garimoi Orach*

media spotlight; he appeared on Voice of America to talk about his findings. At that time, he was completing his PhD at the Institute of Tropical Medicine in Antwerp.

"There is a need for every stakeholder to ensure where you have refugees, you also improve health services for the host population," he explained his findings' implications. *"If you don't do that, you are going to create animosity, you are going to create tension and it will simply not be good for the populations to live where there is a lot of tension."*

Soon, UNHCR and other partners as well as the Ugandan Government acted on the findings to start integration of health services: ensuring refugees and host communities have access to more or less similar services and both populations use the same health facilities. The other policy intervention informed by the study findings was providing 70 percent of assistance to refugees and 30

percent to host communities. He would also develop models for integrated and parallel health services for refugees and host communities. Published in the Journal of Policy and Planning, the models are being used to care for refugees the world over just like findings from the comparative study. Orach shares in Uganda's glory for commendable refugee care.

*"Worldwide, Uganda is being applauded for having very humane policies towards refugees. This is a policy of government, and my work has contributed towards this dimension of Uganda having a very humane policy towards refugee healthcare,"* he says.

## Gains in refugee healthcare research

Prof Orach has trained and mentored several public health experts involved in refugee healthcare and climate/disaster risk reduction and management research. Some of them are Dr. John Bosco Isunju, Dr. Godfrey Bwire, Dr. Richard Mangwi, Dr. Justine Bukenya, Dr. David Lubogo, Dr Christine Nalwadda and those currently pursuing their PhDs in the field; Olivia Nakisita, Micheal Toskins Wagaba, Livingstone Makanga, Saul Kamukama and Harriet Aber.

His latest product is Roseline Achola who successfully defended her thesis on family planning in a refugee setting in Adjumani District, due for graduation in 2025. His colleagues or students have done more studies on refugee healthcare: disaster risk reduction, cholera, and adolescent refugee health care. Most of Master of Public Health Disaster Management students choose refugee healthcare for their dissertations. To date over 30 Master of Public Health Disaster Management students have done their dissertation in the field of refugee health care. Uganda Red Cross, with whom MakSPH has a memorandum of understanding, supports training for this graduate program.

For about a decade now, Orach is a key figure in the Partners Enhancing Resilience to People Exposed to Risks (PERIPERI U), a partnership with 10 African universities, including Makerere, Stellenbosch and Cape Town universities. At least ten Makerere staff from the School of Public Health have been trained in disaster risk reduction and management under this program at Stellenbosch University in South Africa.

With his work recognized across the globe, the International Science Council appointed Orach, Vice Chair of the Integrated Research on Disaster Risks (IRDR) in July 2024. The IRDR met in Beijing, China in October 2024 to develop a work plan for 2025-2027.

Clearly this is passion on disaster risk reduction, and Professor Orach *"can't keep calm"*, before a unit or centre to handle training on this issue back home is achieved, especially as MakSPH gears towards a semi-autonomous status.

Orach is convinced that academic institutions must develop capacity to train and use their "expertise to make a contribution in the novel field of disaster risk reduction and management." Reflecting on his journey in refugee healthcare work, he has no regrets. Proud of his work which has shaped policy, he hopes to keep doing more to improve refugees' situations.

*"I feel absolutely satisfied, and my hunger still is that I should generate more and more people in this area, and as far as I am still relevant and I still can produce, I want to continue to produce more people,"* for disasters abound but the experts are still few, Prof Orach says.

*Researchers from MakSPH's disaster and refugee healthcare research group assess the impact of floods in Adjumani refugee settlement.*

# Balancing the Boat

## Realities of Reducing Uganda's Burden of Drowning

*Dr. Frederick Oporia*

Often disregarded in discussions of global health, drowning has emerged as a major public health concern in Uganda. As the third leading cause of unintentional injury deaths globally, drowning disproportionately affects low- and middle-income countries including Uganda. The World Health Organization (WHO) statistics show that Uganda, which has several water bodies of different sizes, registers the world's highest drowning death rate recorded, estimated at 502 in every 100,000 people residing in lakeside fishing and boat using communities.

Most Ugandans will remember November 24, , when a pleasure boat MV Templar capsized on Lake Victoria near Mutima Beach in Mukono District, claiming over 31 lives. With prominent figures on board, the incident, known for the DJ's *'balance the boat'* chants to drunk revellers, received significant media coverage that many drowning incidents never get.

The annual Police report 2023 indicated that only 138 drowning deaths were reported in 2020 compared to 243 in 2023, with majority of the incidents on Lakes Victoria, Albert, Kyoga, Edward, George and the Kazinga Channel.

However, a study led by Dr. Fredrick Oporia of MakSPH in 2020 shed light on this alarming trend with sobering statistics. Findings from this study indicated that Uganda loses about 2,942 people to drowning each year, with many of these being young adults in districts that border major lakes while children were most affected in non-lakeside districts. This translates to over 8 drowning deaths daily, and more than 85% of victims were males. Also, drowning most frequently occurred in lakes and rivers, and boating as well as collecting water were the most common activities associated with drowning.

The study showed that the drowning rate in Uganda is estimated at 8.5 per 100,000 people but the exact figures are likely much higher, as many drowning incidents go unreported or are misclassified as other causes of death.

From the study, Oporia, also, an Injury Epidemiologist from MakSPH's Center for Trauma, Injury, and Disability Prevention (MakSPH-CTRIAD), indicates that the number of drowning cases identified at the community level were over 14 times higher than were found in official district records, either at Police or mortuaries.

*"Nearly all these drownings are preventable through environmental modifications, policies and regulations that reduce exposure to drowning risk and through implementation of interventions that ensure safety around water or in water,"* he said.

Local environmental factors like the observable effects of climate change which come handy with heavy rains and increasing water levels increase the risks of drowning and flooding in almost every water body in Uganda. Besides loss of lives, many people lose property worth millions, thereby increasing emotional distress and poverty levels.

In 'dry districts' which the study referred to as non-lakeside districts, children are at the highest risk. These dry districts are not necessarily dry; they have small water bodies like rivers, streams, ponds, dams etc. Oporia's study highlights that children under the age of five are especially vulnerable, accounting for a significant portion of drowning incidents. The reasons include lack of supervision, inadequate swimming skills, and the easy accessibility of water bodies. Many of the children drown as they go to collect water for domestic use, bathing and swimming.

Local media reports have local leaders blaming strong and frequent winds as well as old engine boats for putting lives of people travelling at risk in the island districts of Kalangala and Buvuma. The local leaders also complain about the prohibitive costs of life jackets and boat engines.

In one of his engagements with the media, Uganda Police Force spokesperson Kituuma Rusoke affirmed that there were not only increased drowning cases on the country's waterbodies of but also

in ponds, drainage systems during rainy seasons, in swimming pools and bathtubs at home

Oporia further highlighted the lack of a proper communication systems as one of the challenges hindering effective response to distress calls by the responsible authorities. He also expressed disappointment that most weather forecast information from Uganda National Meteorological Authority (UNMA) is in English and on the website, and not accessible to the common man deep in a village whose livelihood depends on activities on water, and hence needs this information the most. Smart phone coverage and internet access is still limited in this at-risk population especially in rural areas.

The WHO has long recognized the need for preventive measures. Their reports emphasize the importance of community awareness programs, improved access to swimming lessons, and better water safety education.

The US Centers for Disease Control and Prevention (CDC) positions Uganda atop other African continent in terms of contribution to accurate and most reliable data on drowning, followed by Ghana. With the findings, Oporia and his team helped to draft the country's first National Strategy for Drowning Prevention, a document that the Office of the Prime Minister took up and delegated the Ministry of Water and Environment to spearhead its adoption and implementation. This strategy is due for launching in March 2025 during the National Water Week under the ministry. However, the researcher is still concerned about a policy gap in Uganda. While the president of Uganda assented to the Inland Water transport Act of 2021, the regulations to implement it are yet to be developed by the Ministry of Works and Transport – Maritime Administration. He also points to the fact that this law may only address transport related drowning and yet the data shows that many drownings also occur outside the water transport industry. He says the MakSPH-CTRIAD is committed to contributing to the development of these necessary guidelines and policies in the country.

*"Currently, we are going to embark on another survey to do some baseline that will give us the current statistics because the ones we relying on are of 2018,"* reveals Dr. Oporia, adding that the school has implemented interventions on all major water bodies with different stakeholders like the Marine Police and the Red Cross.

Key recommendations for cutting drowning cases include use of personal floatation devices like lifejackets, establishing community-based survival swimming programs, training first responders on administration of life-saving interventions such as cardio-pulmonary resuscitation (CPR), raising awareness about drowning prevention, timely and accessible weather information, child supervision by adults and use of seaworthy marine vessels alongside strict regulations and enforcement.

Frederick Oporia is an Injury Epidemiologist and the Executive Director of the MakSPH Center for Trauma, Injury, and Disability Prevention (MakSPH-CTRIAD). He holds a PhD from Makerere University, specializing in Injury Epidemiology and Prevention with a focus on Drowning. This is the first publicly known PhD in Drowning Prevention in Africa. Frederick leads MakSPH-CTRIAD's strategy and partnerships, driving its mission towards the realization of its vision. His expertise extends to Road Safety and Occupational Health and Safety. Frederick serves on WHO's 10 man Technical Advisory Group spearheading the development of the first Global Status Report on Drowning Prevention.

## Short bio

Frederick Oporia is an Injury Epidemiologist and the Executive Director of the MakSPH Center for Trauma, Injury, and Disability Prevention (MakSPH-CTRIAD). He holds a PhD from Makerere University, specializing in Injury Epidemiology and Prevention with a focus on Drowning. This is the first publicly known PhD in Drowning Prevention in Africa. Frederick leads MakSPH-CTRIAD's strategy and partnerships, driving its mission towards the realization of its vision. His expertise extends to Road Safety and Occupational Health and Safety. Frederick serves on WHO's 10 man Technical Advisory Group spearheading the development of the first Global Status Report on Drowning Prevention.

*Children canoeing to school on lake Bunyonyi in Uganda. Photo_by_Uganda Red Cross Society.*

# RMNCAH OR Program: MakSPH – World Bank Partnership

*Dr. Michael-Ediau*

In Uganda, reproductive, maternal, newborn, child, and adolescent health (RMNCAH) remains a major contributor to morbidity and mortality, accounting for 60% of years of life lost. This high burden is largely due to poor quality of care stemming from inadequate financial, human, and material resources, as well as weak multisectoral coordination. With a high population growth rate and a young demographic, RMNCAH service delivery will continue to be a central focus of health sector reforms, even as noncommunicable and infectious diseases rise.

From 2019 to 2022, MakSPH partnered with the World Bank Group to provide the coordination, financial and administrative management, and contributing technical support to the Reproductive, Maternal, Newborn, Child, and Adolescent Health Operational Research (RMNCAH OR) program. This initiative included twelve interrelated studies aimed at addressing specific RMNCAH research questions. It came from a process that started in May 2018 with the Uganda Ministry of Health working with Sweden and the World Bank Group to gather evidence to help guide RMNCAH interventions and improve the operational research skills of Ugandan researchers.

The RMNCAH OR program offered recent findings (up to date) on the factors affecting the delivery and utilization of relevant RMNCAH services, particularly in the areas of governance and leadership; the health workforce; service delivery and referrals; financing and accountability; information management, including birth registration and vital statistics; and sociocultural and other demand-side issues relevant to the use of maternal and newborn care and family planning services. The studies also underscored the important lessons learned and offered suggestions for enhancing the delivery of interventions relevant to RMNCAH.

Studies on leadership and governance underscored the challenges of weak leadership and governance in the health sector. Studies noted that the lack of functionality of governance structures, coupled with poor managerial capacity at district and facility levels, and weak accountability mechanisms, have collectively contributed to poor RMNCAH service delivery. The studies also highlighted the service delivery bottlenecks in the health sector, which included perennial shortages of critical inputs, ineffective referral and emergency medical services, and poor quality of care in health facilities. However, some reforms and increased investments have helped improve the functionality of health centers (particularly health center IVs). Regarding health financing, inadequate resources for health remained a fundamental problem, and in the current fiscal context, is unlikely to increase substantially in the coming years.

The program also noted that Uganda has experimented with several different paper-based, technology, and digital platforms to more rapidly share data and more flexibly use health data to generate trends, and performance reviews, and enhance monitoring and monitoring evaluation. A few efforts advanced within the context of RMNCAH include developing the scorecards, the Maternal and Perinatal Death and

Surveillance Reviews (MPDSR). The DHIS2 has been instrumental in facilitating the analysis and synthesis of routine health data, helping the MoH assess progress on key indicators, and examining trends. The Civil Registration and Vital Statistics platforms have also helped increase birth and death registration. However, some critical challenges existed e.g. (i) the lack of reliable data on different health indicators; (ii) the existence of parallel digital platforms/systems; (iii) limited training on use of different information systems, resulting in most of the capacity being concentrated among Bio-statisticians. The studies also outlined various socio-cultural perspectives and drivers of family planning (FP) use among the selected indigenous and sexually active groups. Some of these included misconceptions about the side effects of the use of some FP methods, limited counseling of sexually active persons on different contraceptive options, and persistent and pervasive religious and socio-cultural barriers.

The MakSPH support to the implementation of the RMNCAH OR program was marked and highlighted by the successful dissemination of research findings to various RMNCAH stakeholders. The stakeholders included representatives of the MoH, the World Bank, the Embassy of Sweden, members of Parliament, heads and technical officers of programs in MoH and other relevant government ministries, departments and agencies, heads of programs in selected health development agencies, civil society organizations implementing RMNCAH programs, and members of the Advisory Committee of the RMNCAH OR program. Others included researchers and research assistants of the 12 studies, academic and administrative staff of MakSPH, health services managers and practitioners from districts and health facilities involved in the research, and the media. The final dissemination exercise comprised presentation of the findings and recommendations of the 12 studies supported by the RMNCAH OR program to stakeholders; and discussion and consensus generation on practical actions for linking the research findings and recommendations with the broader national policy agenda and programming for RMNCAH services in the country.

*Adolescents retuning from fetching water. Photo by Isaac Newton Kasamani*

# Scaling Up Newborn Care

## A $137M Investment needed to Meet Uganda's SDG Targets

*Left to Right: Mr. Perez Ochanda and Dr. Elizabeth Ekirapa, who have been leading the study on investment on newborn health.*

Every year, thousands of those newborns—tiny, fragile lives—fall victim to preventable causes, leaving their loved ones and communities to cope with deep sorrow and loss. This is the story of a silent crisis affecting families throughout Uganda.

As the clock ticks toward the 2030 deadline, set in 2015 by the UN Sustainable Development Goals (SDGs), research by Makerere University School of Public Health (MakSPH) and her partners is raising the need for urgent policy action, requiring a critical investment of $137 million (about UGX 497.42 billion) in scaling up care for small and sick newborns to achieve significant reductions in newborn mortality in the country, with a projected return on investment of $5.3-$6.1 (about UGX ) for every dollar spent.

This urgent plea arises from the *Investment Case for Small and Sick Newborn Care in Uganda*, a collaborative study launched in 2023 by MakSPH, acting in concert with Uganda's Ministry of Health, the Medical Research Council, the Uganda Virus Research Institute, and the London School of Hygiene & Tropical Medicine (LSHTM). The study builds on the recent success of the OMWaNA trial, led by Prof. Joy Lawn from LSHTM and MakSPH's Associate Professor Peter Waiswa and Assoc. Prof. Elizabeth Ekirapa-Kiracho. The OMWaNA trial, which demonstrated the benefits of kangaroo mother care for low-birth-weight neonates, was a pivotal moment in newborn care, sparking a global movement for policy reforms to improve neonatal health.

*"The Omwana trial demonstrated that even in Uganda we can save the lives of newborns who are born as early as 29 weeks weighing less 1.5 Kg. Kangaroo mother care was effective in reducing hypothermia ( low body temperature) and promoting weight gain that are critical for new born survival. When the results of the trial were combined with those of other studies they led to a 14% reduction in neonatal deaths,"* Assoc. Prof. Ekirapa

Uganda's neonatal mortality rate, currently standing at 22 deaths per 1,000 live births, highlights an urgent need for targeted interventions to achieve the SDG target of 12. Most neonatal deaths today occur not at home but in health centers or general hospitals due to gaps in the referral system and limited capacity at lower-level facilities, such as Health Center IIIs, to manage critical cases. In a conversation, Mr. Perez Ochanda, a health economist and Assistant Lecturer in the Department of Health Policy, Planning and Management at MakSPH notes that strengthening referral pathways and equipping health facilities will enhance provision of quality and timely care for vulnerable newborns, especially in remote settings, arguing that investment in these systems will not only save lives but also build a healthier future for Uganda's children and families.

"Essentially, this work has been a collaborative effort with the Ministry of Health, aligned with their existing guidelines but primarily guided by WHO standards for small and sick newborn care. These standards have been the foundation of our approach, defining what a proper small and sick newborn care unit should entail. This includes key aspects such as infrastructure, medicines, medical supplies or consumables, and, critically human resources. To provide quality neonatal care one nurse should care for no more than

4 babies at a time. Our analysis has been structured around these core components, and that's how we have been presenting our findings throughout." Mr. Ochanda candidly notes on the guiding principles of this work.

The investment required to scale up small and sick newborn care in Uganda is substantial yet promising, with the potential to transform neonatal outcomes. The study emphasizes the need for renovating and equipping neonatal units to meet care standards, including building specialized facilities. Equally critical is the provision of essential medical equipment, with a typical neonatal intensive care unit (NICU) at a district hospital estimated to cost $467,839 per year.

Addressing human resource gaps is also paramount, requiring the recruitment and training of an additional 1,860 nurses to effectively manage these units. Furthermore, ensuring a consistent supply of essential medicines and consumables, though a smaller fraction of the cost, remains vital to patient care. Together, these investments present a clear path way toward reducing neonatal mortality and strengthening healthcare for Uganda's most vulnerable.

The total investment needed for these initiatives is approximately $137 million. This funding could save up to 46,300 babies by 2030, a statistic that Mr. Ochanda finds both compelling and motivating. "For every dollar invested, we could see returns of nine to eleven dollars," he noted. "This isn't just about saving lives; it's about investing in the future of Uganda."

Uganda has 62 general hospitals spread across 11 health regions, defined by the health sector's unique regional framework. However, focusing solely on scaling up newborn care within these hospitals would fall short of achieving the desired impact. To inform the figures in this study, a comprehensive approach was adopted, following mainly three critical steps under the study. First, this involved a policy review, targeted at identifying gaps in existing guidelines and aligning them with global standards for newborn care. This groundwork laid the foundation for designing targeted, effective interventions tailored to Uganda's needs.

The study then, in its second phase, employed impact modelling to estimate potential reductions in neonatal mortality through strategic investments. Using the Lives Saved Tool (LiST), projections were adjusted to account for key factors, aiming to meet the SDG target of reducing neonatal mortality to 12 deaths per 1,000 live births by 2030. The findings revealed that with the proposed investments, Uganda could reduce neonatal mortality to 13 deaths per 1,000 live births, bringing the country close to the SDG target. These results highlight the potential for significant progress in newborn survival through coordinated policy and investment initiatives, advancing Uganda's path toward its health goals.

"Step three was the cost analysis. Our modelling indicated that, by 2030, we could save up to 46,300 neonatal lives. After estimating the potential lives saved, we conducted a costing analysis and calculated the return on investment. This involved determining the value generated for every dollar invested, followed by a financial implementation plan, which included specific figures for projected impact." Mr. Ochanda recounts.

In the analysis, several scenarios were considered. One of them, scenario A, suggests that, with 62 general hospitals, the country would still fall short of achieving the target of saving 46,300 neonatal lives. To reach this goal, though, the recommendation is to expand services to cover at least 80 per cent of Uganda's districts, which translates to about 100 districts out of over 140 in the country. This would involve not only the 62 existing facilities but also an additional 38 districts and 17 regional referral hospitals. The model emphasizes the need for both district-level expansion and the involvement of regional hospitals.

Regarding costs, it was estimated that each general hospital would require an investment of approximately $924,000, When annualized, the cost of setting up one neonatal care unit at the district level would be around $467,839 per year. The bulk of this cost is attributed to infrastructure, with human resources becoming the highest cost driver (about 74%) once annualized. Medicines and consumables contribute much less, accounting for about 15% of the total costs.

# The Epidemiological Transition and its implication to disease burden in developing countries like Uganda

*Dr. Roy William Mayega (MB.ChB, MPH, PhD) Makerere University School of Public Health*

## Introduction

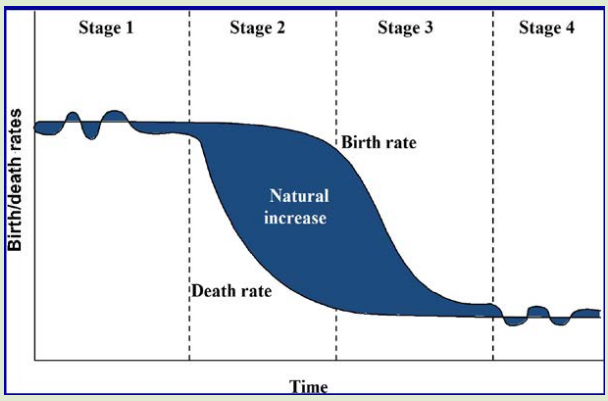
Economic reforms in developing countries are beginning to show fruits including improved education levels especially for women, reduced unemployment and extreme poverty, improved environmental sanitation, hygiene, and nutrition, improved immunity due to mass vaccination, improved health care systems, and improved food production and distribution. Infant mortality is dropping even in developing countries. Death rates are declining but so is fertility. Because of changing socio-economic fortunes, a middle class has emerged characterized by sedentary lifestyles and unhealthy eating habits leading to obesity. There is increased adoption of unhealthy lifestyles especially related to diet, physical activity and harmful habits. Although infectious diseases are still responsible for a high disease burden in low- and middle-income countries (LMICs), there is a concurrent rise in chronic non-communicable diseases (NCDs), which are closely linked to unhealthy lifestyles. These trends are part of a wider phenomenon known as the "Epidemiological Transition", which is itself connected to two other transitions: The "Demographic Transition", and the "Nutritional Transition". Let us take a brief look at reach of these phenomena and how they apply to developing countries like Uganda.

## The Demographic Transition

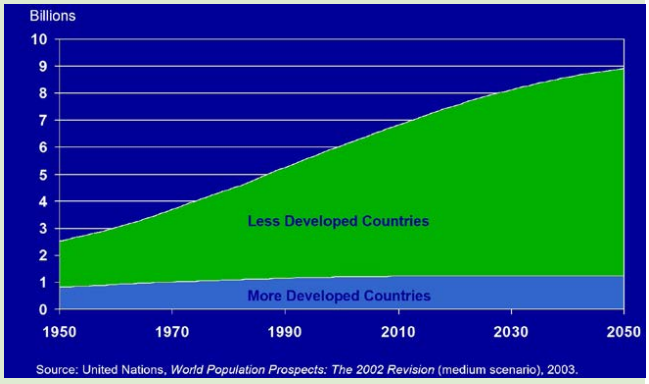
It is defined as a shift in rates of births and deaths as a population's socio-economic status changes. Populations go through four stages: In stage 1, populations with very low levels of socio-economic development experience both high death rates and high birth rates, leading to a constant or very low level of population growth. Because of the uncertainty from high death rates, individuals choose to have many children. In stage 2, death rates begin to drop, due to socio-economic advancements but birth rates remain high, leading to a population explosion. Uganda and several other developing nations seem to be at this stage. Improvements in childcare and nutrition result in reduced infant mortality, occurring alongside a high fertility rate. In stage 3, birth rates start to drop resulting in a slowing of population growth. Higher socio-economic status individuals want fewer children, in response to lower death rates and an increased cost of living. In Stage 4, both birth rates and death rates are low, and population growth slows, stops or even declines (**See Figure 1**).

Less developed countries have significantly younger populations than developed ones. At least one third of the population in less developed countries is under 15 years of age. In Uganda, the median age is 17 years, meaning that 50%

Stages of the Demographic Transition




Population growth rates in high- and low-income countries



of our population is 17 or below. The younger age structure is driven by high levels of childbearing. The population structure in low-income countries has a pyramid shape, while that in higher income countries has an hour-glass shape.

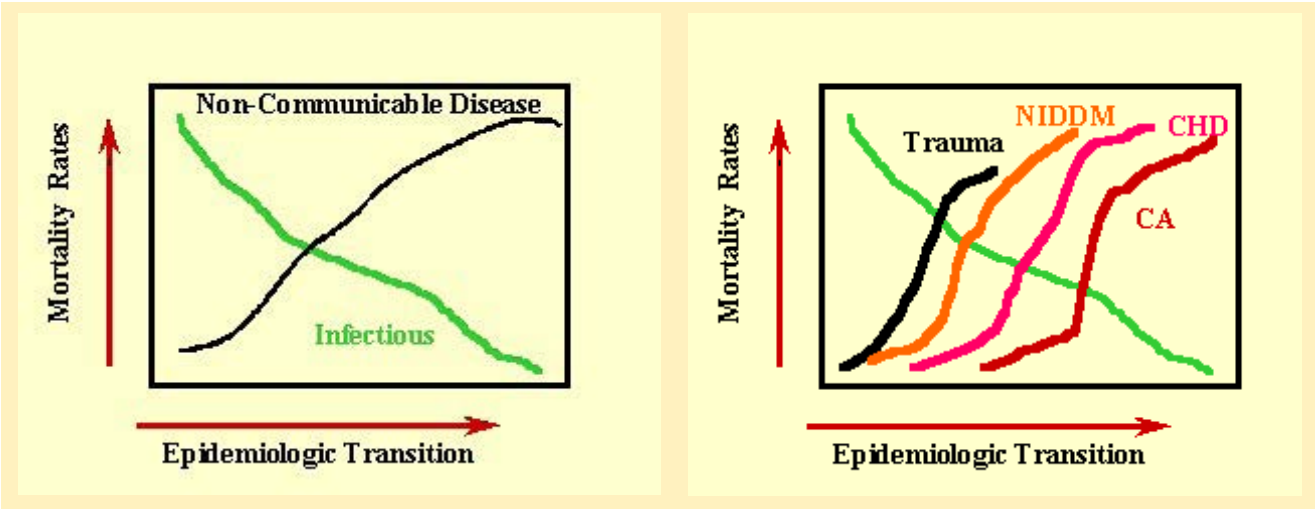
## The Nutritional Transition:

The Epidemiological Transition is also closely correlated with the nutritional transition. It refers to a change in dietary habits as the socio-economic status of populations changes. Its first stage (which occurs in pre-industrial times) is characterized by poor methods of food production, hunting and gathering, and high roughage diets. Starvation is common. It is postulated that during this era, the human body adjusted to calorie scarcity, with low general levels of insulin production. The second stage occurs when societies industrialize: Better methods of food production cause a preponderance to processed foods. Societies shift to high-risk diets that are high in fats, polished carbohydrates and salt and low on fruits and vegetables and characterised by larger servings, unhealthy behaviours that include sedentary lifestyles that are short on physical exertion and high on sitting, smoking, increased alcohol and drug consumption, and snacking. These factors drive the increase in NCDs seen in the epidemiological transition. In the third stage, societies begin to realize the harm arising from unhealthy habits and take on healthier lifestyles.

## The Epidemiologic Transition:

This transition moves in tandem with the other transitions. A long-term shift occurs in the disease patterns of a population, whereby infectious, outbreak prone diseases are slowly replaced by chronic degenerative diseases. The shift occurs in about 3 phases: Stage 1 (the Age of Pestilence and famine) occurs before nations industrialize; populations are affected by a high frequency of preventable infectious diseases including diarrhoeal diseases, respiratory diseases and immunizable diseases. Food scarcity leads to frequent famines and society-wide malnutrition. In the second stage (the Age of receding pandemics), improvements in disease prevention through better sanitation, access to safe water and vaccination among others lead to receding outbreaks. However, the evolution of new disease-causing organisms, especially from the population explosion, increased human interaction with animals, sexual behaviour, encroachment on wildlife habitats, climate change, increased international travel, mass displacement from war and economic migration, may cause episodic returns to the age of pestilence, with new or resurging epidemics/pandemics. COVID-19, pandemic influenza and SARS are examples. In the third stage (the Age of degenerative and man-made diseases), chronic NCDs (e.g. cardio-vascular diseases, diabetes, auto-immune diseases) become the major causes of morbidity. The increase in NCDs is attributed to increasingly unhealthy diets, reduced physical activity and unhealthy habits. On the other hand, a higher life expectancy is associated with an increase in diseases of aging. As countries transition to middle income status, a dual burden of disease is observed, characterised by an increasing incidence of chronic NCDs amidst a high burden of infectious/acute conditions. The stages of the Epidemiological transition are closely associated with changes in population size and composition, socio-economic status, nutrition, and societal lifestyles.

Figure 2 Illustration: Trends in Epidemiological Transition



The upturn in the different NCDs does not occur at the same time across the lifecycle. Trauma from transportation accidents and violence is the first to appear, in the relatively younger age-groups, followed by type-2 diabetes and hypertension in the middle-aged population, as people gain weight and become more sedentary. In the transition to older age, cardiovascular complications (stroke and myocardial infarction (or heart attacks) increase, followed by cancers and degenerative diseases like arthritis and dementia.

## Where is Uganda in the Epidemiological Transition?

Uganda is at the interface between a high prevalence of preventable infectious/acute conditions amidst a rising burden of NCDs. On one hand, infectious diseases like malaria, pneumonia, acute diarrhoea, HIV, and TB, and acute conditions like maternal and new-born conditions, anemia and malnutrition are responsible for a high burden of disease. On the other hand, chronic diseases like cardio-vascular diseases, diabetes, cancer and chronic obstructive pulmonary disease are also on the rise. NCDs now account for 40% of morbidity in Uganda. Uganda is experiencing an epidemic of hypertension. The Recent NCD risk factor survey estimated that one quarter of adult Ugandans have high blood pressure of whom less than 10% are aware. Diabetes prevalence stands at 3.6%. Stroke prevalence is estimated at 6% of the adult population while prevalence of chronic kidney disease has been estimated at 2.5% in some periurban communities, with 15% in these communities showing signs of chronic kidney damage. Uganda is among the top 5 African countries with the highest rate of transportation crushes. Closely associated with these disease trends is a rising prevalence of lifestyle risk factors including 1) 90% of Ugandans do not consume sufficient fruits and vegetables; 2) Smoking prevalence stands at 8.6%; 3) Uganda is among the top 10 alcohol consuming countries in Africa; 4) Although self-reported physical activity is very high (showing that Uganda is the top physically active country in the world), some surveys that have used objectively assessed measures of physical activity show that sedentary behaviour in a predominantly rural population in Eastern Uganda is at 19% and insufficient physical activity at 38%.

## What needs to be done?

Uganda has an opportunity to halt and reverse the growing epidemiological transition before a full-blown epidemic of NCDs emerges. However, being a resource constrained country means that low-cost measures that are affordable at primary care and community levels need to be prioritized. The WHO urges countries to scale up the following actions to reduce NCD risk at the population level (1) The reduction of modifiable risk factors for NCDs and underlying social determinants through creation of health-promoting environments. Health promotion should focus on: a) Healthy diets; b) Healthy levels of physical activity; (2) Reduction of tobacco use; (3) Reduction of harmful alcohol use, and (4) Effective treatment, care and lifestyle support for people with chronic diseases and those at high risk. Uganda could introduce screening for risk factors especially among people older than 40 years, particularly for high blood pressure, prediabetes and obesity. Interventions should include a life-course approach where school health programs include a strong component on healthy lifestyle training, to build a generation that is resilient to the appeal of unhealthy behaviours.

*Researchers taking height measurements of children in Kyegegwa refugee settlement*

# The Kampala Solid Waste Dilemma

## A Public Health Emergency in waiting

Due to the fast growth of the city and the spread of informal settlements, Kampala is currently experiencing a severe solid waste management challenge. Every day, the city generates over 1,500 tons of waste, mostly from yard and food waste. Unfortunately, only 40–50% of this waste is properly managed, which increases the risk of disease-carrying pests to humans, clogs drainage systems, and causes flooding. Better waste management solutions are desperately needed, as seen by the catastrophic August 2024 collapse of the Kiteezi landfill, which claimed at least 35 lives and caused extensive property loss. This tragedy exposed serious flaws in Kampala's waste disposal system, where crowded and badly planned dumpsites manage a variety of waste, including dangerous items, endangering the lives of many people. Adopting a systematic and coordinated strategy to organic waste management that complements larger urban planning strategies is essential for addressing these urgent problems. Encouraging recycling and garbage separation is necessary for improving sustainability and lowering the risks connected to the way waste is currently managed.

### Research on Solid Waste

Beyond the cumulative open dumping, research at Makerere University has also found disturbing concentrations of heavy metals in the area around these landfills. Researchers Abdullah Ali Halage, Muleme James, Mugambe Richard, Ahmada Zziwa, Robert Mugabi, and Joel Kinobe examined leachate, crops, and lactation cow milk near landfills in the Kampala Metropolitan Area (KMA) and found levels of heavy metals like iron, manganese, and lead to be higher than what is considered safe according to national and international guidelines. Those in the area who rely on food and water from these sources are especially vulnerable to the harmful effects of this pollution.

The findings indicate that iron, manganese, and zinc are the most common heavy metals found in leachate and crops, while milk samples showed higher levels of zinc, nickel, and iron. This poses significant public health concerns, as long-term exposure to these contaminants can result in serious health complications, including heavy metal poisoning and related illnesses.

Important policy recommendations have been put forward to deal with these concerning challenges. To protect public health, heavy metals in leachate, milk, and food must be checked regularly. The public should know that eating food grown near dumps is dangerous, thanks to attempts to raise awareness in the community led by the Ministry of Health and NGOs. In order to protect food safety, local governments should also limit farms near dumpsites and use better waste management methods to clean up the environment.

Another closely related study conducted in the informal settlements of Bukoto, Kasubi, Wandegeya, and Kamwokya 1 examined the barriers and facilitators to waste segregation and recycling. This research, led by Dr. Richard K. Mugambe from Makerere University School of Public Health, included contributions from Dr. Esther Buregyeya, Dr. Lynn Atuyambe, Prof. Charles Ibingira, Dr. Constantine Katongole, and Ms. Rebecca Nuwematsiko.

The intervention was piloted in Kasubi, Wandegeya, and Kamwokya 1, focusing on community engagement and the distribution of resources to encourage behavioral change. The findings revealed that higher income levels and prior experience with waste segregation significantly predicted participation in waste management practices.

To enhance solid waste management in Kampala, local authorities need to create connections between waste segregators and buyers, improve community education, and establish accessible recycling facilities. These measures are crucial for fostering a sustainable waste management culture.

Recycling not only holds economic and ecological value but also promotes sustainability compared to incineration and landfilling. Research indicates that nearly 17.3% of residents in Kampala who segregate their waste benefit financially, while at least 30% recognize the advantages of recycling for their households.

# Worrying Trends

## The growing burden of NCDs and associated risk factors in Uganda

*Prof. David Guwatudde, Dr. Roy William Mayega, and Dr. Justine N. Bukenya, NCD subject matter experts.*

Non-communicable diseases (NCDs) —health conditions that are not transmitted from person to person but result from a combination of genetic, physiological, environmental, and behavioral factors— continue to pose a serious public health concern in Uganda, with alarming mortality rates of 709 per 100,000 for men and 506 for women, the diseases include conditions like cardiovascular diseases, chronic respiratory diseases, cancers, diabetes, etc. as of 2021. In 2019, NCDs were responsible for 36% of deaths, adding to the already heavy burden of communicable diseases such as malaria and HIV/AIDS. Although Uganda has made progress in creating policies and guidelines to tackle NCDs, there are still significant gaps, particularly in restricting the common risk factors for NCDs like alcohol consumption, inadequate physical activity, unhealthy diets, etc. To effectively reduce the prevalence of NCDs, it is essential to monitor these risk factors and strengthen prevention strategies, as highlighted by the national risk factor surveys conducted in 2014 and 2023. Findings from decade-long studies by researchers at the Makerere University School of Public Health (MakSPH) paint a worrying picture of the growing burden of risk factors for NCDs in Uganda.

Findings from the 2014 World Health Organization (WHO) supported NCD national survey informed health NCD prevention related policy in Uganda, prompting President Yoweri Museveni to declare a national day of physical activity in 2018 – every 2nd Sunday of July. Researchers laud this as a very good action that the government acted upon, but a lot more needs done, and that non-action on other recommendations could worsen the NCD burden in the country.

According to WHO figures, NCDs, primarily cardiovascular diseases, cancers, diabetes, chronic respiratory diseases, and mental health problems, lead to 41 million deaths globally each year, constituting over 70% of all deaths. Disturbingly, nearly 90% of these fatalities occur in low- and middle-income countries, including Uganda. The WHO's Country Disease Outlook for Uganda, published in August 2023, highlights a "high" NCD burden, with these diseases accounting for 36% of deaths—almost three out of ten—in 2019. These findings underscore the urgent concerns of researchers regarding Uganda's significant NCD challenge.

**The percentage of people who are overweight or obese increased from 19.4 percent in 2014 to 24.1 percent in 2023. Also worrying researchers is the rise in alcohol consumption, with current consumers increasing from 28.5 to 31.1 percent over the same period.**

Researchers at Makerere University School of Public Health (MakSPH) have generated research evidence on key risk factors for NCDs. For blood sugar, a strong risk factor for diabetes, there was an increment from 1.3 in 2014 to 2.9 percent in 2023, a rate that Prof. David Guwatudde of the MakSPH's Department of Epidemiology and Biostatistics says "sounds low" but the increase is "statistically significant." Prof. Guwatudde has walked the MakSPH journey of research on the epidemiology of risk factors for NCDs in Uganda, beginning with surveys into the same in the Kasangati area of Wakiso District in 2011, followed

by other community surveys in various parts of the country, and co-leading the conduct of two national surveys of 2014 and 2023. He has amassed a wealth of experience in tracking the epidemiology of these since then.

The percentage of people who are overweight or obese increased from 19.4 percent in 2014 to 24.1 percent in 2023. Also worrying researchers is the rise in alcohol consumption, with current consumers increasing from 28.5 to 31.1 percent over the same period. Prof. Guwatudde describes the trend in Uganda's alcohol consumption as worrying since alcohol is a known risk factor for quite a number of NCDs, yet more than a quarter of our people are daily consumers of alcohol." It should be noted that in a 2023 statement in *The Lancet Public Health*, the WHO emphasized that *"there is no safe amount"* of alcohol that doesn't impact health. However, in Uganda, there is a contentious conflict among various stakeholders, some viewing it as a good source of tax revenue, others as a good social drink, and public health professionals arguing for restriction on its consumption for health reasons.

The high inadequate fruit and vegetable consumption in the country remain a concern, with figures dropping only slightly from 87.8% in 2014 to 86.4% in 2023. The WHO recommends eating at least 400 grams of fruits and vegetables daily to enhance health and reduce the risk of certain NCDs. In 2017, inadequate consumption of fruits and vegetables was linked to an estimated 3.9 million deaths globally. Prof. Guwatudde believes that in Uganda, the high inadequate fruit and vegetable intake isn't due to a lack of availability but rather a lack of knowledge on the health benefits of these towards preventing chronic diseases. He emphasizes the importance of fruits and vegetables, noting they are rich micro-nutrients and in dietary fiber, which helps prevent certain cancers, particularly gut cancers.

The other increasing risk factor is sedentariness, related to too much sitting or reclining, and not spending energy. "[Sedentariness] reduces metabolic rate, and when the metabolic rate is low, you are likely to have a lot of fats deposited in the wrong areas, abnormal storages around the heart. Extra fats are supposed to be handled by the liver and stored in the muscles," explains Dr. Justine N. Bukenya, a senior lecturer in the Department of Community Health and Behavioural Sciences. Therefore, "fat deposits can be found throughout the heart and brain, which is detrimental. And with the vessels, the moment you have a lot of fat, cholesterol, it reduces on the space where blood is supposed to be flowing, and you end up with high blood pressure. So, you need activity to burn the fat," Dr. Bukenya discloses.

Dr. Roy William Mayega, a Senior Lecturer in the Department of Epidemiology and Biostatistics and a subject matter expert at the KI-Mak Center of Excellence for Sustainable Health (CESH), highlights the leading global health challenges known as "The Big 4": cardiovascular diseases (17.9 million deaths in 2016), cancers (9.3 million), chronic obstructive pulmonary disease (4.1 million), and type 2 diabetes (2 million). To this list, mental disorders, sickle cell disease, and accidents are significant contributors to NCDs. While adults are primarily affected, children and adolescents are also at risk.

According to Dr. Mayega, the heavy financial burden of NCDs on Uganda makes it extremely risky to overlook their impact on economic development. The 2020 NCD Investment Case estimates global losses of over $30 trillion between 2011 and 2020, with low- and middle-income countries shouldering 70% of the burden. In Uganda, NCDs accounted for 32% of health spending in 2015/2016, yet funding fell far below required levels. NCDs also cost the economy an estimated UGX 5.3 trillion ($1.4 billion), or 4.1% of the 2018 GDP, with productivity losses making up 90% of these costs.

The WHO cites mass health education as a requisite strategy. Health promotion should focus on: a) Healthy diets; b) Healthy levels of physical activity; (2) Reduction of tobacco use; (3) Reduction of harmful use of alcohol and (4) Effective treatment and care for people with chronic diseases.

In line with the 'Best Buys', the WHO has produced a strategy on diet and physical activity. The Ministry of Health in Uganda worked with stakeholders to developed national guidelines on diet and physical activity. These guidelines need to be operationalized. The 57$^{th}$ World Health Assembly recommended simple cost-effective efforts to reduce burden of NCDs 1) Promoting health, 2) Reducing population risks, 3) Improving the management of chronic diseases and 4) continuous surveillance to measure progress.

For Dr. Mayega, there is an urgent need for a cross-sectoral approach to health, engaging sectors such as education—where healthy lifestyles should be taught from a young age—urban planning, environment, gender and labor, agriculture, and finance. He suggests considering population-level measures like increasing taxes on cooking oil and sugar to improve public health.

As MakSPH marks 70 years of excellent service in the field of public health, researchers are proud of the MakSPH's contribution to research on NCDs. But they would like to see more of their research evidence and recommendations acted upon to inform policy interventions, without which the burden of non-communicable diseases will continue to rise.

# Alcohol and Drug Abuse: A Wake-Up Call

*Professor Nazarius Mbona Tumwesigye and Cissie Namanda, alcohol epidemiologists*

Alcohol and substance use is persistently a public health challenge that impacts countless lives. It brings a host of negative health, social, and economic effects that ripple through individuals, families, and entire communities. Substance use is a significant contributor to the global disease burden, affecting both disability and mortality rates. In 2016 alone, substance use disorders accounted for an alarming 99.2 million Disability-Adjusted Life Years (DALYs). Among these, alcohol use disorders were the most common, responsible for about 4.2% of the total DALYs. Drug use also played a role, contributing 31.8 million DALYs, or approximately 1.3% of the overall burden. These statistics highlight the urgent need for effective strategies to address substance use and support those affected.

Substance use disorders have a larger impact on the global disease burden than conditions like HIV/AIDS, tuberculosis, diabetes, or transport injuries. These disorders also play a significant role in the HIV/AIDS epidemic, often linked to behaviors such as sharing injection equipment and engaging in risky sexual practices. Additionally, substance use deepens inequalities and hinders progress toward Sustainable Development Goals (SDGs), affecting both economic and social development. Among these issues, alcohol use disorders are the most common.

Uganda ranks among the top 10 highest alcohol-consuming countries in Africa and the top in East Africa. In 2016, 26% of Ugandans reported current alcohol use, with 12.7% being high-end users and 9.8% experiencing alcohol use disorders. The global challenge of substance use is growing, with an increase in disorders related to various drugs. Young people are particularly vulnerable to substance abuse, often influenced by peer pressure and their inclination to experiment.

Despite the high rates of alcohol and substance abuse, access to prevention and treatment services in Uganda remains limited. Challenges include a lack of trained personnel, inadequate infrastructure, and issues with the quality of care. Funding for research on alcohol and substance use is scarce, and there are few experts in the field. Additionally, efforts to regulate alcohol consumption face hurdles, as seen in the recent rejection of the Alcohol Drinks Control Bill by Parliament. Current laws, such as the Liquor Act of 1960 and the Enguli Act of 1964, are outdated and need reform.

In response to these challenges, the School of Public Health has been actively researching treatment and policy issues in Uganda. MakSPH has partnered with local, regional, and international collaborators on alcohol and substance use studies. The latest project is a two-year collaboration with the University of Stirling, the University of Malawi, the University of Cape Town, the South Africa Medical Research Council, and the University of Edinburgh. This research focuses on regulatory controls for alcohol production and distribution, using the national ban on alcohol sachets and the Gulu alcohol control ordinance as case studies.

The School also hosts the Alcohol, Drug, and Addiction Research Centre (ADARC), which utilizes staff expertise and collaborates with local and international partners. ADARC provides the latest research findings on alcohol and drug issues in Uganda and beyond. Several successful bids from School staff have highlighted ADARC's capacity to manage alcohol-related projects, leading to partnerships with organizations in Europe and the United States.

Experts in this area at MakSPH have supported national engagement, including policy developments like the National Alcohol Control Policy that was approved in 2019 and has supported the development of the national alcohol control bill. The School of Public Health staff has published over 20 papers in about ten years. Furthermore, the staff has been part of awareness creation about the problem of alcohol and substance use and the need for regulation.

The school stays committed to doing more in this area, such as generating evidence to support future policies and interventions and identifying other funding opportunities for alcohol and drug use.

# e-Payments for Campaign Health Workers

# Solid Evidence from 12 African Countries

*L-R: Amoit Judith Grace and Juliet Aweko*

Health campaigns remain critical in addressing public health challenges, especially in Sub-Saharan Africa, yet traditional cash payment systems for campaign workers often face delays, inefficiencies, and transparency issues. Recognizing the need for improvement, the Digital Health Payment Initiative and Research in Africa (DHPI-R) was launched in 2022 with support from the Bill and Melinda Gates Foundation.

This work was coordinated by MakSPH in partnership with the University of Dakar, and sought to enhance healthcare delivery through digital payment solutions. In the past three years, the DHPI-R initiative has conducted 18 studies across 12 Sub-Saharan countries; Cameroon, Côte d'Ivoire (Ivory Coast), Senegal, the Democratic Republic of the Congo (DRC), Uganda, Nigeria, Ghana, Kenya, Benin, Togo, and Malawi, evaluating the feasibility and impact of digitized payments in vaccination campaigns, including the most recent one -Uganda's yellow fever campaign.

The DHPI-R research has shown that digital payment systems can revolutionize how healthcare workers in Sub-Saharan Africa are compensated. Backed by global evidence from the WHO and The Better Than Cash Alliance, e-cash systems improve transparency, efficiency, and cost-effectiveness. They reduce delays, cut errors, and make sure health workers receive their payments directly and reliably. However, challenges remain. Poor infrastructure in rural areas, unreliable internet and mobile networks, and high transaction costs hinder the full adoption of digital payments. Overcoming these barriers is crucial to maximizing their benefits for healthcare campaigns.

*"Our research has shown that the use of digital payments in Uganda and across Sub-Saharan Africa is increasing. This shift is not just effective; it enhances the timeliness of payments, boosts transparency and accountability, and promotes gender equity. While we have made significant steps, there are still critical areas that need attention for us to reach the full potential of these systems. We urge the governments and partners to invest in further research so we can generate the evidence needed to strengthen healthcare services in our communities, especially around digital payments,"* says **Dr. Peter Waiswa, an associate professor and project director at DHPI-R**

A key focus of the project has been exploring gender roles in digital payment adoption. The findings show that digital payments empower female healthcare workers financially, improving their household relationships and autonomy. The Better Than Cash Alliance Gender Toolkit highlights how these systems can promote financial independence for women. However, challenges remain, such as reliance on male spouses for accessing funds due to a lack of mobile devices and negative social norms. This emphasizes the need for gender-sensitive approaches in designing digital payment systems. To fully unlock the potential of these systems for women, it's essential to address these barriers.

Our work lays ground for future innovation in digital health payment systems. Through our over 1,000 member -Community of Practice (CoP), we appreciate a dynamic space for stakeholders to exchange knowledge and address implementation challenges. Therefore, evaluating the effectiveness of digital payment systems has provided critical insights, particularly for rural and hard-to-reach areas. An important output of our work has been the Global Research Agenda on Digital Payments for Campaign Workers, which outlines key research priorities, including solutions to barriers in implementation, cost-effectiveness, and the relationship between financial inclusion and health outcomes. For Uganda and similar resource-limited contexts aiming to modernize health worker payment systems, we are excited to

**Through our over 1,000 member -Community of Practice (CoP), we appreciate a dynamic space for stakeholders to exchange knowledge and address implementation challenges.**

have contributed to the evidence to shape strategies, policy and change. We call on stakeholders to embrace strategies for successful digital payment adoption including appealing to young, tech-savvy populations, investing in interoperable platforms, cutting down transaction costs that bar e-transactions, and foster trust in digital solutions.

The legacy of the DHPI-R project lies in its dedication to bridging gaps and shaping the future of digital payments in healthcare. Future research should focus on cost-effective strategies to overcome barriers, address inequalities in access to digital financial services, and explore the requirements for digital systems beyond healthcare campaigns. The success of digital payments in health campaigns relies on collaboration across sectors and strong research to guide policy and practice. Stakeholders are encouraged to invest in infrastructure, foster innovation, and promote inclusivity in payment systems. *"Scaling up digital payment systems is not just about technology; it's about equitable access, building trust, and empowering healthcare workers. By prioritizing these solutions, we can improve health outcomes for all,"* Dr. Peter Waiswa.

# Digitalising Medical Data Management

The Makerere University School of Public Health Monitoring and Technical Support Program (MakSPH-METS) is transforming HIV prevention in Uganda. Through partnerships with PEPFAR, CDC, and the American people, MakSPH-METS has equipped 82 safe spaces with cutting-edge technology and distributed over 185 digital devices, including computers and laptops. These efforts support improved patient tracking, efficient service delivery, and enhanced care for high-risk groups, including marginalized populations. As MakSPH celebrates 70 years of public health leadership, this initiative exemplifies its commitment to innovation and saving lives through strengthened monitoring and evaluation systems

"This digital transformation is about improving patient tracking, enabling better person-centred care, and ultimately enhancing outcomes for those we serve," said Dr. Evelyn Akello, MakSPH-METS Program Manager.

The program has trained 112 staff in digital data management and cybersecurity, with 60% being specialized data personnel. Facilities received tailored equipment—laptops, desktops, routers, and data backup devices—based on a detailed needs assessment.

This digitalization effort connects facilities to the national tracker system, enhancing secure and efficient health data management. To ensure long-term success, implementing partners will provide ongoing maintenance and support.

This modernization effort is an important advancement in Uganda's HIV prevention strategy, positioning the country at the forefront of digital health innovations in East Africa.

1) Supporting MoH in the development of policies, strategies and guidelines for implementation of digital health in Uganda
2) UgandaEMR+
3) Push to expand Point of Care (POC) implementation
4) Enabling paperless EMR usage in high volume facilities
5) Centralised hardware procurement and distribution to facilities through partners to aid in digitizing the health sector
6) Supply chain early warning system; weekly stock status system
7) Helps manage stockouts
8) Helps manage redistribution
9) Used to track vaccine and PPE distribution at the height of COVID-19 outbreak


*Dr. Evelyn Akello (R) hands over equipment to MARPI delegation*

# Landmark Lenacapavir Drug for HIV Prevention Treatment



*Prof. Noah Kiwanuka, Dr. Flavia Matovu Kiweewa and Dr. Godfrey Kigozi (L-R)*

MakSPH researchers were instrumental in the landmark Gilead Sciences study, which demonstrated that Twice-Yearly Lenacapavir showed 100% efficacy and outperformed daily Truvada® for HIV prevention.

Uganda, one the countries participating in the investigation had three study sites. MakSPH's Epidemiology and Biostatistics department, hosted one of the three research sites in collaboration with UVRI-IAVI.

The key Ugandan sites, involved in this study included the Makerere University-Johns Hopkins University Research Collaboration (MU-JHU) in Mityana, Africa Medical and Behavioral Sciences Organization (AMBSO) in Masaka, and Makerere Kalangala site coordinated through MakSPH, with MU-JHU Mulago serving as the national coordinating institution. This multi-site collaboration was essential in uncovering the effectiveness of Lenacapavir as a preventive measure for HIV, particularly among high-risk young women.

The data that led to this ground-breaking trial stemmed from earlier research by Dr. Noah Kiwanuka of MakSPH, which highlighted the high HIV incidence among adolescent girls and young women (AGYW) in rural areas, including fishing communities in Uganda. This insight, along with contributions from Dr. Flavia Matovu Kiweewa, Uganda Lead Investigator for Lenacapavir, helped convince Gilead, a California based biopharmaceutical company back in 2017 to fund a survey to gather more evidence on HIV incidence in these vulnerable populations.

"Together with Prof. Noah, Dr. Kigozi, and other colleagues, we convinced Gilead to fund a recency survey that demonstrate high HIV incidence among AGYW in different rural settings within in Uganda. To many of us, the PURPOSE 1 results come as a major milestone, after a long journey of hard work and sleepless nights for our teams at the three sites in Uganda rural Uganda. The findings are a real game changer in the field of HIV prevention," Dr. Flavia Matovu, National PI - PURPOSE 1 trial study

**Lenacapavir works by targeting the HIV capsid, preventing viral replication and offering promise in treating multi-drug-resistant HIV strains.**

Lenacapavir works by targeting the HIV capsid, preventing viral replication and offering promise in treating multi-drug-resistant HIV strains. Its approval as a salvage regimen in 2022 by the FDA for treatment-experienced adults further demonstrates its significance in the HIV treatment landscape. This achievement is a milestone in HIV care and prevention, with the potential to transform global HIV strategies.

***Dr Godfrey Kigozi was in charge of Masaka site, Prof. Noah Kiwanuka in charge of Makerere-Kalangala site.***

# A Life Dedicated to Fighting HIV/AIDS

*Prof. Noah Kiwanuka*

Mention the name Noah Kiwanuka in public health circles, and you'll hear about a man whose relentless commitment to fighting HIV/AIDS in Uganda has shaped the nation's health landscape. As an Associate Professor and former Head of the Department of Epidemiology and Biostatistics at MakSPH, his journey is one of turning personal tragedy into a powerful drive for change.

Uganda's HIV prevalence today stands at 5.1%, a significant improvement from the devastating rates of over 30% in the 1980s. For Prof. Kiwanuka, however, these numbers are deeply personal. Among Uganda's first reported HIV cases in 1982 at Kasensero Landing Site—a fishing port on Lake Victoria near Rakai District's border with Tanzania—was his elder sister, a cross-border trader with Tanzania.

At the time, AIDS was shrouded in myth and stigma, dismissed by many as witchcraft. It was only through the intervention of figures like the District Health Officer, Dr. Anthony Lwebuga, and the BBC Radio that scientific understanding began to emerge.
"My father was a devoted listener to BBC, as others roamed with the myth, he sought for credible information", he said.

For Prof. Kiwanuka, AIDS wasn't just a community crisis—it was a family tragedy. The disease claimed his father, mother, two stepmothers, two brothers, and three sisters. He vividly recalls attending eight burials in a single week on behalf of his bedridden father, a harrowing experience that etched permanent scars but also fuelled his resolve to act.

After earning his Bachelor's in Medicine and Surgery in 1994 from Makerere University, Prof. Kiwanuka joined the Rakai Health Sciences Program, then known as the Rakai Project, as its first full-time medical doctor for a field-based study. Covering areas now known as Rakai, Kyotera, and Lyantonde Districts formerly Greater Rakai District, the project engaged over 15,000 participants. It was here that he gained firsthand experience in community-based research, contributing to a landmark study on mass treatment of sexually transmitted infections (STIs) as a strategy for HIV prevention.

*"The study was cluster-based, covering 10 areas, and it laid the foundation for much of my work today,"* he recalls, crediting mentors like Prof. David Serwadda, Professor Nelson K. Sewankambo and Prof. Joseph Konde-Lule for shaping his approach to large-scale public health interventions.

For over 30 years, Prof. Kiwanuka has carried forward this mission, combining research, mentorship, and advocacy to combat HIV/AIDS with firm determination. His story is not just one of professional achievement but of personal resilience, transforming loss into a lifelong commitment to save others.

In 1996, his passion earned him a Fogarty International scholarship, to Johns Hopkins University, USA, where he completed a certificate in Epidemiology. Recognizing his potential, the Fogarty Center supported his return in 1999 for a Master's degree, cementing his expertise in the field.

In 2001, Dr. Kiwanuka returned to Uganda and was soon appointed Director of the Rakai Project field office, where he oversaw multiple impactful HIV initiatives. From 2003 to 2007, he pursued a PhD in epidemiology and biostatistics at Case Western Reserve University, USA, and this was a refining moment for his expertise and shifting his focus toward biostatistics.

Dr. Kiwanuka's passion for mentorship led him back to academia in 2008, where he joined as a lecturer while continuing his consultancy with the Rakai Project. This dual role allowed him to blend practical experience with academic rigor. With support from Prof. Nazarius Tumwesigye, then Chair of the Epidemiology and Biostatistics Department, Dr. Kiwanuka spearheaded the development of specialized graduate programs, including a Master's in Biostatistics and a Master's in Health Informatics. These programs combine technology, health data management, and informatics to offer innovative solutions for modern health systems, significantly enriching public health training and expanding capacity in key areas of health research and data management.

*"I used my foundation from the Rakai project and my exposure during my further studies to write proposals and grants to establish these programs,"* he said.

In 2010, Dr. Kiwanuka transitioned from the Rakai Project to focus on growing as an independent researcher, enabling him to pursue his own grants and collaborations. This shift marked a pivotal moment in his career, allowing him to specialize further in HIV research. In 2011, he became the Program Director for the Uganda Virus Research Institute's HIV

vaccine program (IAVRI), where he developed a niche in HIV clinical prevention trials, a field he continued to lead until 2016. *"I developed my own research agenda and grants, which got funded and further implemented them", he said. "I focused primarily on HIV fishing communities in Albertine Region then Hoima District later Buliisa in 2011-2013".*

At the UVRI, Dr. Kiwanuka led 8 research projects, independently running 3 while overseeing 5 others at the program level. He proudly reflects on mentoring a new generation of researchers, including Julius Kiwanuka and Juliana Namutundu, who are now pursuing their PhDs.

In 2022, the WHO reported 2,800 TB-related deaths among people living with HIV in Uganda, a stark figure that drove Dr. Kiwanuka to expand his focus to tuberculosis transmission dynamics. Collaborating with his former mentor, Prof. Christopher C. Whalen, and Dr. Juliet N. Sekandi, a global expert in TB and HIV, they explored the intersection of TB and HIV. Their research has led to significant improvements in TB care and treatment in Uganda. MakSPH's contribution, particularly the Kalangala site study, where Dr. Kiwanuka's work showed high incidence of HIV infections, and prevalence was critical to the project's success.

## Key Research Contributions

Dr. Kiwanuka's public health impact, especially in tuberculosis (TB), has been profound. He pioneered the Community Health Study of Social Networks and Tuberculosis (COHSONET) in Kampala, securing funding alongside Professor Whalen for a ground-breaking TB transmission study. Their efforts led to critical policy changes, including providing TB treatment and vaccines to children under five. His work in early TB diagnosis has significantly reduced morbidity and mortality rates.

Kiwanuka's innovative work at the Rakai Program introduced community-based women's swab collection for diagnosing vaginal infections, now a global practice. He also spearheaded crucial infrastructure developments, such as the paediatric wing at Kalisizo Hospital. His clinical trials, particularly on Herpes Simplex Virus II (HSV-2), established a clear link between HIV acquisition and HSV-2, showing that genital ulcer disease (GUD) increases the risk of HIV seroconversion. His findings also revealed that co-infected individuals had higher HIV viral loads, underscoring the importance of treating HSV-2 in dual infections. These breakthroughs have significantly shaped HIV management strategies, especially for those with overlapping infections.

Kiwanuka's research team made a pivotal discovery that viral load directly impacts HIV transmission risk, a finding that has influenced global HIV response strategies. His groundbreaking work on circumcision's role in reducing HIV prevalence challenged stigma and reshaped HIV prevention approaches. *"Many didn't believe in circumcising positive males as they argued that the wouldn't heal, we defied all myths and our trial was successful"*, he retorted.

Kiwanuka secured two grants focused on fishing communities, uncovering alarmingly high rates of both incidence and prevalence.

*Masters scholars from MakSPH under the D43 Training Fellowship for TB and HIV after a meeting with their mentor, Prof. Noah Kiwanuka, on Tuesday, January 9, 2024, as part of the NIH-funded project with Georgia University.*

# Inside Uganda's National Health Adaptation Plan to Combat Climate Change

On August 22, 2024, Uganda made history as the first African nation to launch a National Health Adaptation Plan (H-NAP), fulfilling the country's global commitments at the UN Conference of Parties (COP) 26 and 28 summits in Glasgow (2021), and Dubai (2023), respectively, in response to the growing global climate change risks and challenges.

The National Health Adaptation Plan 2025-2030, dubbed H-NAP, launched by the health ministry in Kampala, seeks to fortify the country's healthcare system against the current mounting health challenges driven by climate fluctuations, to safeguard public well-being amid the rising temperatures, erratic weather patterns, and associated health risks.

Officiating the H-NAP launch, Uganda's Prime Minister, Rt. Hon. Robinah Nabbanja, represented by the third Deputy Prime Minister and Minister without Portfolio, Rt. Hon. Lukia Isanga Nakadama, commended the fruitful collaborative initiative of the government, development, and civil society partners in delivering the Health National Adaptation Plan.

*"The Government of Uganda has created an enabling policy and legal environment to tackle the climate change challenges,"* she said, noting that Uganda's fourth National Development Plan underscores climate change as a cross-cutting issue requiring mainstreaming across all sectors, assuring the Office of the Prime Minister (OPM)'s support.

*"This Plan is based on evidence and should provide a systematic guide to building a resilient health system for Uganda,"* the Prime Minister observed, urging the different multi-stakeholders to support the

*Dr. John Bosco Isunju*

implementation of the Plan to harness its full potential in guiding the country's climate change adaptation action.

One key success from the COP26 summit in Glasgow, which brought together over 120 world leaders and 40,000 participants, was the compromise to step up support for climate change adaptation, reflected in the Glasgow Pact calling for the doubling of finance to support developing countries like Uganda in adapting to the adverse weather impacts and build resilient health systems.

A key highlight during the Glasgow negotiations, was the realisation by the global actors of the critical linkage between climate change and health, as the discussions culminated in the consensus that the worsening climate crisis directly threatens global health through increased extreme weather events, the spread of diseases, and the increased strain on healthcare systems, thus necessitating urgent integrated action to protect public health.

Subsequently, nation states committed to developing national climate change health vulnerability and adaptation assessments and the health national adaptation plans, both documents that Uganda concluded as of August 2024, to emerge as a regional and global leader in the charge towards adaptation to combat climate change effects and build resilience.

The November 2023 Climate Change Health Vulnerability and Adaptation Assessment (VAA) for Sound Management of Climate Change-related Health Risks in Uganda and the Health – National Adaptation Plan (H-NAP) 2025- 2030, were spearheaded by Uganda's Ministry of Health in collaboration with the Rockefeller Foundation, Makerere University, and partners.

In particular, MakSPH's Dr. John Bosco Isunju led the teams in developing VAA and H-NAP and was honoured by the Ministry of Health during the H-NAP launch with the 2024 *Climate and Health Champions Award* for his significant contributions to building a climate-resilient health system in Uganda. Dr. Isunju is currently supporting the Health Ministry with the development of the National Sanitation and Hygiene Policy and the Environmental Health Strategy for Uganda. Through his previous work, Isunju was also named in TIMES Magazine's 100 Most Influential Climate Leaders in Business in the World for 2024.

The Rockefeller Foundation is a key partner. They made a crucial investment towards the development of VAA and H-NAP. Mr. William Asiko, Vice President and head of The Rockefeller Foundation's Africa Regional Office, emphasised, *"Climate change is now the gravest threat to the health and well-being of billions of African people. Initiatives like Uganda's Health National Adaptation Plan*

*demonstrate how African countries are rising to the challenge by scaling the necessary climate solutions and setting an example for the world."*

Makerere University VC, Prof. Barnabas Nawangwe, commended the Rockefeller Foundation, the development partners, the government and Makerere University staff for their critical contribution towards the development of the H-NAP, noting that: *"Our academics from the Makerere University School of Public Health played a vital role in leading the Climate Change Vulnerability and Adaptation Assessment (VAA), which has been instrumental in shaping the development of the H-NAP."*

*"This is just an example of Makerere University's strategic commitment to research, innovation, and capacity-building. We are dedicated to generating evidence and human resources capabilities that guide decision-making and contribute to the development and implementation of climate-resilient strategies in health, agriculture, and other sectors,"* the Makerere University VC observed.

Today, Uganda, like the rest of the region and the globe, continues to grapple with the adverse effects of climate change. The H-NAP's overarching goal is to enhance the resilience of Uganda's health sector against climate-related impacts by incorporating climate adaptation into health strategies and planning, ensuring sustainable and continuous healthcare services during climatic challenges;

*"Uganda is already experiencing severe climate change effects, such as floods, droughts, and temperature changes, which contribute to health issues like waterborne diseases, vector-borne diseases, malnutrition, and mental health problems."* The H-NAP report reads in part. Its precursor, the 2023 VAA, conducted across 716 selected health facilities in Uganda, highlighted the significant risks and challenges that climate change poses to public health.

The VAA revealed that many healthcare facilities in Uganda are vulnerable to climate change-related hazards, due to unpreparedness across several critical components. In terms of energy, healthcare facilities were found to lack secure locations to protect emergency energy sources from hazards, had inadequate coverage for critical service areas, and failed to consistently check alternative energy sources.

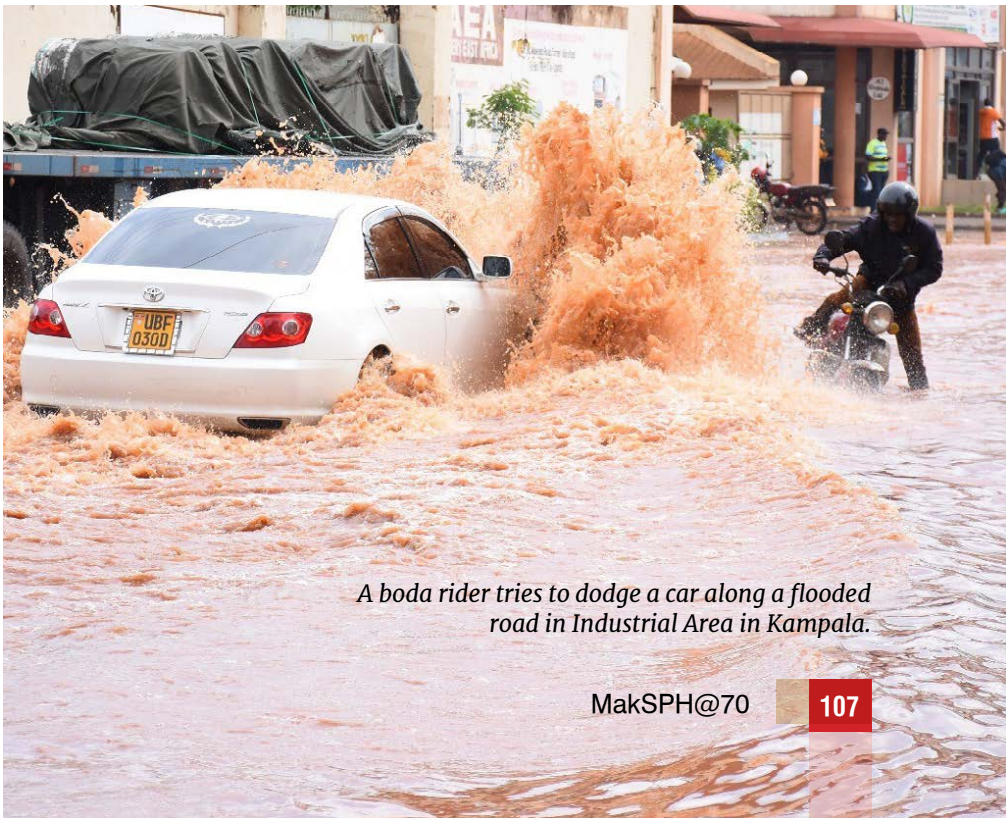
The health workforce was also underprepared, with gaps in participation in climate adaptation plans, insufficient readiness for outdoor work during extreme conditions, and limited capacity to identify and manage health conditions, worsened by climate impacts.

Weaknesses were found in water, sanitation and hygiene, and healthcare waste management, including inadequate strategies to monitor and reduce water contamination, limited preparedness to prevent vector breeding in facility water systems, and a lack of comprehensive water safety and contingency plans. Meanwhile, post-hazard recovery was insufficient, with no safe locations for critical equipment during emergencies, inadequate safety measures for vital supplies, and inconsistent evacuation mechanisms for health workers and patients.

*"A key recommendation to tackle climate change issues in Uganda is the integration of climate services for health. These services involve the provision of climate data, tools, and information tailored to the health sector's needs, enabling health professionals to better anticipate, prepare for, and respond to climate-related health risks. Climate services for health include forecasting climate variables, monitoring and predicting the spread of climate-sensitive diseases and issuing early warnings for heatwaves and air pollution episodes,"* The H-NAP reads in part.

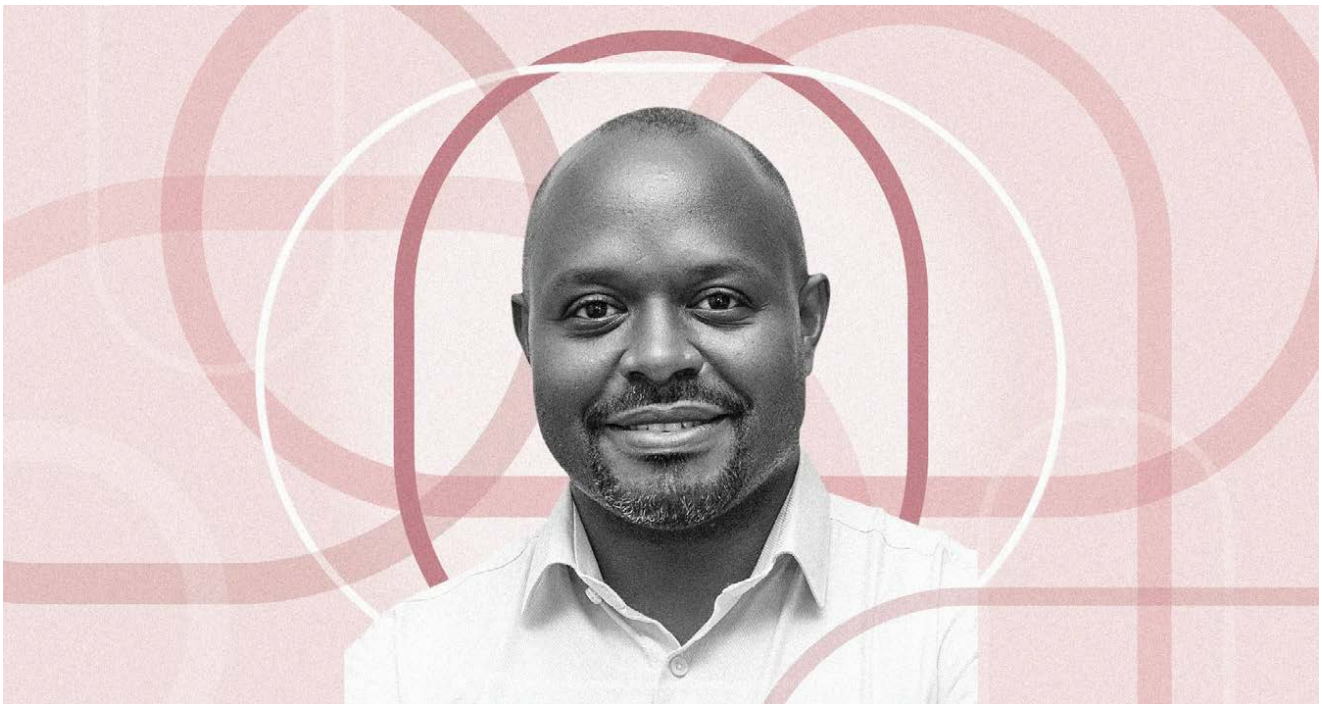
According to the Plan, by integrating these services into health planning and operations, Uganda can enhance its public health resilience against the impacts of climate change. Furthermore, the H-NAP proposes a range of short-term and long-term interventions across ten components some of which include climate-transformative leadership, climate-smart health workforce, integrated risk monitoring, and sustainable financing.

Therefore, as MakSPH celebrates 70 years, the School takes pride in its contributions to generating evidence for policy, including efforts to combat climate change risks in Uganda.




*A boda rider tries to dodge a car along a flooded road in Industrial Area in Kampala.*

# Environmental Health Study and Practice Through Dr. Isunju's Lens



When Dr. John Bosco Isunju reflects on his journey in environmental health, it's a story of passion, dedication, and a profound appreciation for the field's importance as a link between health and the environment.

From his early days as a student to becoming a leader in research and policy development, Dr. Isunju shares his experience. He joined the field in September 2001 as part of the second cohort of the Bachelor's program in Environmental Health at Makerere University School of Public Health. He recalls a student who joined before him and advised him to pursue the course.

Environmental health, though not as widely known as other traditional public health disciplines, is gaining traction. According to Dr. Isunju, awareness among students grows when they understand its critical role and opportunities in the world of work. "It's increasingly gaining traction because our alumni are highly placed," he says.

Graduates of the program have made significant inroads into local government, with many serving as Assistant District Health Officers (DHOs) in charge of public health. This progress stems partly from the restructuring of public service, which incorporated environmental health officers into key roles.

*"The first cohorts were involved in advocating for a review of the public health structure to include environmental health officers,"* he notes.

Beyond government roles, opportunities abound in civil society, private practice, and academia. Makerere University's leadership in offering the Bachelor's program has inspired other universities to introduce similar courses, helping to fill the environmental health void.

Dr. Isunju says his environmental health research portfolio spans diverse areas, including water, sanitation, and mapping environmental changes and their drivers, among other areas.

For him personally, a defining moment was leading the team that carried out Uganda's Climate Change Vulnerability and Adaptation Assessment (VAA) for the health sector. This assessment, a standard requirement for all countries under the UN and WHO frameworks, informed the development of Uganda's Health National Adaptation Plan (H-NAP), launched in August 2024.

The H-NAP was a significant milestone for Uganda. It became only the second country globally, after Nepal, to complete this process. Reflecting on this achievement, Dr. Isunju explains, *"It had a lot of lessons for other countries. We have been supporting Nigeria and Kenya in developing their H-NAPs and have been invited to facilitate capacity-building courses for health responders across Africa."*

This work underscores the urgency of preparing health systems for the

impacts of climate change because research found that Uganda itself wasn't prepared.

*"There is limited preparedness of the health system against climate and its hazards,"* Dr. Isunju warns. Through the H-NAP, Uganda has set an example for the region, demonstrating the value of integrating health and climate policies.

In 2024, Dr. Isunju's contributions earned him a place among *Times Magazine's* 100 notable global climate personalities. "I am happy and humbled. It's such a great honor for the world to appreciate my effort," he says, adding that the recognition motivates him to extend his impact further.

This acknowledgment highlights the global significance of his work, but Dr. Isunju remains grounded, focusing on fostering change at home and across Africa. "It gives an opportunity to reach out to the broader community," he says.

Makerere introduced a self-taught PhD in Public Health in August 2024. While it is not exclusively focused on environmental health, the program includes an environmental health track. Dr. Isunju views this as a vital addition to the field's academic offerings, complementing the Master's in Environmental Health introduced in 2021.

For students and young professionals considering environmental health, Dr. Isunju offers valuable advice: *"There are many opportunities in this field."*

## Brief profile

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*MakSPH's Dr. John Bosco Isunju receives the 2024 Climate and Health Champions Award at the launch of the H-NAP. Looking on is Rt. Hon. Lukia Nakadama, the 3rd Deputy Prime Minister and Dr. Diana Atwine, the PS. Ministry of Health.*

# Transforming Health Care Through Social Innovation in Uganda

The Social Innovation in Health Initiative (SIHI) Uganda, hosted by Makerere University School of Public Health (MakSPH), is reshaping healthcare delivery through community-driven innovation. Since its launch in the country in 2017, SIHI has focused on addressing pressing health challenges, including malaria, TB, and maternal health promoting sustainable, people-centred solutions.

Collaborating with local stakeholders and the Ministry of Health, SIHI bridges the gap in access to health care and ensures that interventions are tailored to the needs of underserved communities. SIHI has worked with local communities and Community-Based Organizations (CBOs) to develop joint interventions aimed at improving health outcomes.

Dr. Phyllis Awor, the Lead for the SIHI Uganda Hub, notes that "these innovations create tailored solutions that are more effective, inclusive, equitable, affordable, collaborative, and people-centred," emphasizing the initiative's commitment to engagement and a bottom-up approach to transforming health systems. "We look at providing more effective solutions to the health challenges we are currently facing, addressing the demand, generating the impact, and creating critical change. These innovations can be additive, radical, or just better approaches," Dr. Awor added.

Over the years, SIHI has reached significant milestones in Uganda, graduating over 40 Social Innovation Fellows trained in implementing health solutions within their communities. In 2024 alone, more than 25 participants graduated from the fellowship programme, showcasing impactful projects from organizations like Amref Health Africa, the Change Development Initiative, the Baby Ubuntu Programme, the Baitambogwe Community Health Initiative, the Innovation Program for Community Transformation and Diversity Innovations Initiative, highlighting SIHI's success in nurturing leaders driving social innovation at grassroots.

One of SIHI's remarkable successes is the Drug Shop Integrated Management of Childhood Illnesses project. This initiative trains drug shop operators in rural areas to accurately diagnose and treat common illnesses such as malaria, diarrhoea, and pneumonia, significantly improving the quality of care, reducing child mortality rates, and ensuring timely treatment for children towards meeting our sustainable development targets.

Another impactful work is Imaging the World Africa, which enhances antenatal care in remote areas in the country by training midwives and nurses to use portable ultrasound devices and transmit images for interpretation by specialists.

**"We look at providing more effective solutions to the health challenges we are currently facing, addressing the demand, generating the impact, and creating critical change. These innovations can be additive, radical, or just better approaches,"**


*Dr. Phyllis Awor*

This innovation has improved the early detection of pregnancy complications and maternal and neonatal outcomes. The Bwindi Mothers' Waiting Hostel is also notable for providing expectant mothers in remote communities in the area with a safe place to stay near health facilities, ensuring timely access to skilled care during delivery and reducing maternal and neonatal deaths.

For SIHI, building local capacity is a cornerstone to improving community health systems and impact. By collaborating with the Ministry of Health and involving stakeholders like health workers, policymakers, and researchers, SIHI ensures that innovations are sustainable and scalable.

This approach fosters ownership driving change from the ground up, accountability, and local agency, which is vital for long-term success. The initiative's work directly supports Universal Health Coverage (UHC), targeting vulnerable populations and strengthening community health systems, ensuring essential services reach those most in need.

As an initiative, SIHI's reach extends beyond Uganda's, as part of a global network with 13 Hubs in the Global South. Globally, SIHI has launched over 25 innovation calls, identified 500 community-based interventions, published more than 100 articles in high-impact journals, and completed over 55 smaller research projects. The Ugandan Hub has published over 20 research papers, hosted six innovation calls, and partnered with over 20 civil society actors, the Ministry of Health and the Kampala Capital City Authority to improve health outcomes through social innovations in health.

Supported by the Swedish Government and organizations like WHO, UNICEF, the World Bank, and UNDP, SIHI Uganda has amplified its impact by designing health innovator fellowships, providing grants, and fostering partnerships that create opportunities for collaboration among stakeholders.

As Uganda grapples with emerging health challenges, limited resources, and inequitable access to care, SIHI continues to drive innovation by promoting collaboration, creativity, and community engagement. These efforts set a benchmark for transforming health systems to better meet the needs of vulnerable populations, aligning with Makerere University School of Public Health's legacy of excellence in research, training, and community service as it celebrates 70 years of advancing public health in Uganda and beyond.

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*Social Innovations in Health Initiative's 5th National Stakeholders Workshop, where fellows were awarded certificates after completing their training at Golf Course Hotel, Kampala*

# WHO, MakSPH Advance Public Health Research in Uganda

The World Health Organization (WHO) and Makerere University School of Public Health (MakSPH) are strengthening their collaboration to advance public health research in Uganda. A key highlight of their partnership is the proposal to designate MakSPH as a WHO Collaborating Centre (WHOCC) in Uganda, a step discussed during a recent performance review of their five-year memorandum of understanding (MoU).

Established in 2019, the MoU has facilitated joint research in critical areas such as communicable and non-communicable diseases (NCDs) and health system strengthening. The partnership has also supported training initiatives, research programmes, and enhanced information sharing, producing impactful data that complements Uganda's Ministry of Health's efforts, while also contributing to global health discourse.

Dr. Yonas Tegegn Woldemariam, the immediate former WHO Country Representative to Uganda, in April 2024 emphasised the significance of sustainability, proposing MakSPH's elevation to WHOCC status. "After five years of successful collaboration, we should work towards making MakSPH a WHO Collaborating Centre. This will ensure sustainability and unlock opportunities for MakSPH to support global health," he said.

Globally, WHOCCs play a pivotal role in disciplines like disease prevention and health systems research. Of the 829 WHOCCs worldwide, only 27 are in the African region, highlighting the importance of establishing one in Uganda.

Prof. Rhoda Wanyenze, Dean of MakSPH, expressed gratitude for WHO's confidence in the School's capabilities and reaffirmed MakSPH's commitment to using research findings to influence policy and public health decisions. *"We hope to maintain this partnership and develop timely work plans to guide future activities,"* she noted.

Over the past five years, the collaboration has delivered significant outcomes, including the 2023 Uganda Non-Communicable Diseases Risk Factors STEPS Survey, the Expanded Programme on Immunization Assessment, and the National Immunization Strategy 2022-2026. Other key outputs include evaluations of pharmaceutical services, nutritional service delivery in the Rwenzori and West Nile regions, and measles-rubella vaccine coverage.

As MakSPH celebrates 70 years of advancing public health, its leadership in research and training continues to be vital in addressing Uganda's health challenges. With technical support from WHO, this enduring collaboration is key to driving capacity building, evidence-based policymaking, and enhanced community health services, laying a strong foundation for sustainable public health interventions for years to come.

# MakSPH's City-Based Interventions to Stimulate Active Movement for Health in Kampala

*Dr. Lawrance Ndejjo*

Cities worldwide are expanding rapidly, presenting new public health challenges for residents and authorities. In Kampala, Uganda, this urban sprawl has resulted in increased congestion and pollution, alongside an infrastructure that prioritises vehicles over pedestrians.

What this means is a rise in lifestyle-related diseases, known as Non-Communicable Diseases (NCDs), which are chronic conditions that are not passed from person to person; caused by risk factors like poor diet, lack of physical activity, tobacco use, and alcohol consumption, and they include diseases like diabetes, heart disease, cancer, and stroke.

Uganda's Ministry of Health recognises that the burden of NCDs is on the rise, with physical inactivity being a major driver. In its 2021 report, the Ministry revealed that NCDs account for up to 33 per cent of all deaths in the country, with urban areas like Kampala hit hardest due to sedentary lifestyles and poor infrastructure for physical activity.

In response, the *City-Based Interventions to Stimulate Active Movement for Health in Kampala, known as City-Move*, launched in 2024, seeks to combat this troubling trend by improving the health and well-being of urban populations worldwide through promotion of physical activity in urban areas, including brisk walking, cycling, swimming, running, dancing, and sports activities such as tennis and basketball

The initiative is a four-year project running between 2024–2027 funded by the European Union, bringing together a consortium of academic and city partners from across Europe, South America, and Africa, with the mission to reduce the prevalence of NCDs related to physical inactivity, improve mental health, enhance cardiovascular and muscular fitness, and increase life expectancy – which for Uganda today, stands at 68 years.

A 2022 World Health Organisation (WHO) Global Status Report on Physical Activity indicates that a staggering 27 per cent of adults in Uganda fail to meet the recommended levels of physical activity, something that continues to heighten their risks of NCDs, largely attributed to rapid urbanisation, inadequate infrastructure for walking and cycling within Kampala, and lifestyle changes favouring sedentary behaviour.

A sedentary lifestyle means having little or no physical activity. In Uganda, this lifestyle is driven by increased time spent sitting due to office jobs, over-reliance on motorized transport over walking or cycling, prolonged time spent on screen monitors, and reduced engagement in physical labour as technology becomes more integrated into our daily lives.

However, for WHO, the recommended activity is at least 150-300 minutes of moderate-intensity aerobic physical activity or 75-150 minutes of vigorous-intensity activity per week, combined with muscle-strengthening activities for at least two days for adults, and at least 60 minutes of moderate-to-vigorous physical activity daily for children and adolescents.

City-Move, a consortium project led by the University of Antwerp in Belgium, unites eight implementing partner universities and city, worldwide, to combat the rise of sedentary lifestyles. The consortium promotes active movement to improve health outcomes in urban areas. In Uganda, the project is led by Dr. Rawlance Ndejjo, an Assistant Lecturer at Makerere University School of Public Health (MakSPH).

Dr. Ndejjo notes that cities are home to over half the world's population, requiring an intervention to guarantee their health and well-being, opining that: *"There is a projection that by 2050, two-thirds of the world's population will be living in cities and that means we need to think about cities beyond just a place where we go to look for opportunities."*

*"We need to think about cities in a way that promotes health. We want to create a city that provides a conducive environment for us to achieve all our needs, but also, promote our health. That is why we are focusing on cities,"* Dr. Ndejjo added.

Cities are key in addressing the determinants of health, from issues of access to healthcare, quality of housing, and environmental factors like pollution to clean water

and infrastructure that supports physical activity such as parks and walkways, socioeconomic conditions, education, employment opportunities, and transportation systems, which collectively, influence the health and well-being of the urban population.

As part of its early-stage interventions in Kampala, the City-Move project participated in organizing the *Kampala Car-Free Day* in September 2024, an event led by the Kampala Capital City Authority (KCCA) to promote non-motorized transport and raise awareness of physical activity. This initiative featured activities like walking, cycling, sports, street art and painting, aimed at encouraging alternative, healthier modes of transport.

*"We observe there are a lot of people who are not physically active, higher among adolescents at about 80 per cent and adults at about 25 per cent. So, we feel we have this good intervention that we can all take up."* Dr. Ndejjo notes, emphasising the health benefits of physical activity.

Again, over 42 per cent of Kampala residents walk but out of necessity, although, there remains inadequate infrastructure for walking and hardly any for cycling. The city's roadways prioritize vehicles, offering little protection to pedestrians, while commercial motorcycles frequently encroach on pavements, further endangering walkers. This has resulted in a high rate of road traffic crashes, with pedestrians accounting for over 50 per cent of road fatalities in Kampala, according to the 2023 Uganda Police Crime Report.

In addition to the safety concerns, Kampala also suffers from severe air pollution, which is the highest among cities around the region and lacks organised public spaces designated to facilitate physical activity. Accordingly, these conditions further restrict opportunities for active movement and contribute to the city's rising public health challenges.

Another early-stage project intervention is the *Kampala Monthly Cycling*, launched in 2024 to engage stakeholders in cycling within the city. On 26th September 2024, City-Move held a stakeholder's workshop on improving the use of the non-motorised transport pilot corridor, which is a 2.1 km stretch along Namirembe Road and Luwumu Street in Kampala, a study that is part of late-stage interventions of the project.

Mr. Hakim Owiny, a cycling advocate in Kampala, emphasizes cycling's role in reducing air pollution and improving urban health. *"Makerere University School of Public Health, through its City-Move Project, is helping bring attention to the importance of cycling in Kampala. Their research supports our advocacy efforts and ensures that we have the right information to engage policymakers and stakeholders in promoting a safer and healthier city through active movement."* Mr. Owiniy stated.

The general objective of the City-Move project is to adapt and evaluate the World Health Organisation Global Action Plan on Physical Activity (GAPPA) interventions across six cities globally, learning from diverse cultural and economic contexts. This involves refining city-level GAPPA through stakeholder engagement, supporting early-phase implementation via action research in Living Labs, and assessing the feasibility, sustainability, and adoption of interventions while improving data collection for better implementation outcomes.

# The HIV surveys informing policy designs

## HIV Bio-Behavioral Survey

For over 15 years, Makerere University School of Public Health's HIV surveys have been instrumental in shaping national policies like the Uganda AIDS Commission's strategic plan, highlights Dr. Geofrey Musinguzi, Principal Investigator of the Crane Survey project. Targeting vulnerable groups such as female sex workers, these surveys have revealed alarming statistics, with the latest findings showing a 33% HIV prevalence among female sex workers, far exceeding the national average of 5.8%.

Conducted across 12 districts, including Kampala, Mbarara, and Masaka, the survey sampled nearly 8,000 participants aged 15 to 49 using Audio Computer-Assisted Self-Interviews (ACASI). The prevalence peaked in Mbarara at 54%, followed by Masaka (45%) and Fort Portal (44%). Among HIV-positive female sex workers, only 25% had accessed treatment, and one-third in Kampala had missed their medication at least once in the prior three months.

These findings underscore the urgent need for targeted interventions to improve access to treatment and reduce transmission risks among the most affected populations but also achieve global targets, emphasizes Dr. Musinguzi. The Crane Survey, supported by U.S. CDC funding under PEPFAR, continues to shed light on critical public health challenges.

## HIV- Electronic Health Services ACASI

The School is currently implementing the Electronic Health Services (eHES) system, implemented under the Crane Survey Project, which has transformed HIV risk screening in public health facilities. Derick Twikirize, coordinator of eHES says nearly 50% of individuals identified as high-risk now actively seek services. "Some people don't realize they are at risk of acquiring HIV until the interview reveals their vulnerability," Twikirize notes.

The digital platform, an innovation developed by converting paper-based Ministry of Health screening tools into a user-friendly system, identifies at-risk individuals through tailored questions. If it is integrated into various departments like outpatient and maternal health services, eHES has the potential to ensure that even those visiting facilities for unrelated conditions, such as malaria tests, can receive HIV screening and prevention services.

*"By linking high-risk individuals to prevention and treatment while encouraging those not at risk to stay negative, we've increased the uptake of essential services like condoms, lubricants, and HIV testing kits,"* explains Twikirize. Also, the system addresses stigma and discrimination by providing e-learning and video counseling to educate clients on their specific risks and promote care-seeking behavior.

To break barriers and encourage proactive health management, MakSPH is proud to present this innovative approach as a contribution and a step forward in HIV prevention and care.

The system is user friendly. For instance, it breaks the barrier of privacy and confidentiality given that the people use computers. As such, they easily open up, hence eliminating the issue of stigma which enables them receive appropriate services.

The system has also boosted the uptake of Pre-Exposure Prophylaxis (PrEP), a preventive drug for HIV-negative individuals. *"A person might not openly admit to having unprotected sex with multiple partners, but they can easily respond by tapping on the screen,"* says Norman Oryesiga, ACASI assistant at Kisenyi Health Center IV. Many users, including commercial sex workers, feel more comfortable disclosing sensitive information during computerized screenings than in face-to-face interviews. The system is user-friendly, even for illiterate users, as responses are provided via voice interactions, creating a more personal experience. Currently operational in 55 sites across Uganda, including facilities in Kampala like Kisenyi Health Center IV, Kawala Health Center III, and Kamwokya Community Care Center, the system continues to enhance HIV prevention and care.


*U.S. Ambassador to Uganda, H.E. William Popp, on the exhibition stands listening to Dr. George Tumusinze present.*

# Fatal Roads, the Loud Silence of Inaction

The World Health Organization (WHO) stresses that road traffic injuries are the leading cause of death and disability for young people aged 5–29. More than half of these deaths involve vulnerable road users—pedestrians, cyclists, and motorcyclists. In Uganda, road traffic crashes have turned roads into death traps. Road Traffic Injuries (RTIs) have claimed more deaths than the COVID-19 pandemic; reason some have dubbed them as the "second pandemic." In Uganda, RTIs are the sixth leading cause of death and fourth for disability. Uganda's RTI mortality rate stood at 29 per 100,000, well above the global average of 18 per 100,000, with pedestrians making up 40% of the fatalities. These alarming figures go beyond being a burden for the police—they are a national concern.

RTIs do not only claim lives but are also responsible for significant financial losses. Earlier this year, one of Uganda's leading newspapers, the Daily Monitor's reported the heavy financial burden of RTIs on taxpayers, where experts from Mulago hospital Emergency and Accident Ward (Uganda's national referral hospital) confirmed that over Ugx.76 million was being spent every day on treating crash victims.

According to the 2023 Uganda Police Annual Crime reports, speed and careless overtaking were responsible for 50% of the total crashes. While Uganda has traffic laws in place, enforcement remains crucial. The traffic police are urged to act decisively, cracking down on offenders to improve road safety regardless of status or connections.

Researchers from the Trauma, Injuries, and Disability (TRIAD) research group at Makerere School of Public Health (MakSPH) have for the part 10 years been on the road to generate evidence to support policy and action towards improving among others, road safety.

Dr. Esther Bayiga, set to graduate with her PhD in the forthcoming Makerere's 75th graduation ceremony, has taken it upon herself to dig deeper for solutions. Her thesis, "An Analysis of the Pattern of Pedestrian Injuries and Deaths in Relation to Land-Use, Transport, and Socioeconomic Factors in Kampala City, Uganda", adds new knowledge to the existing literature on the issue.

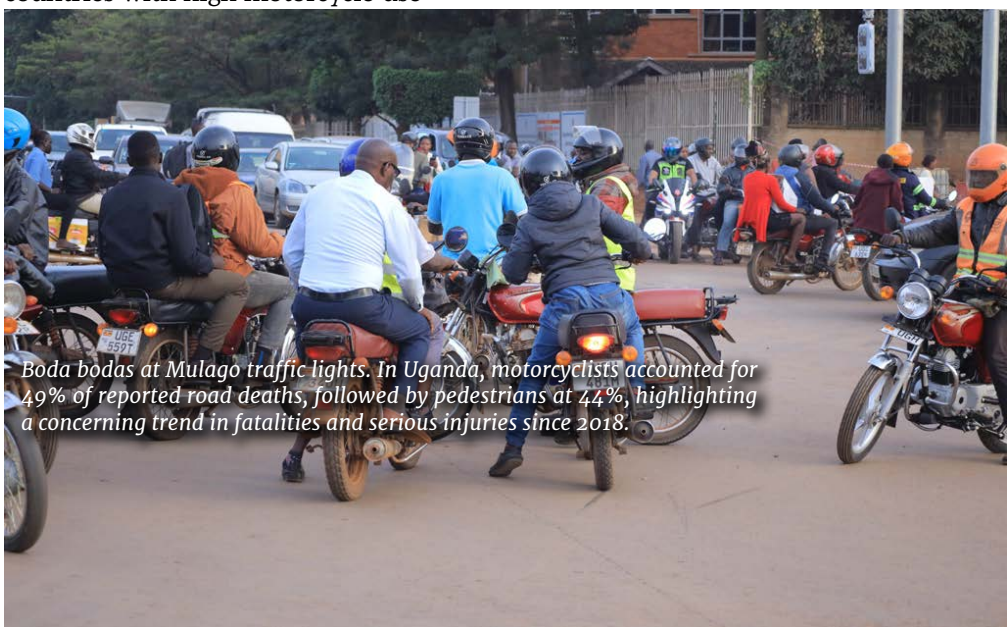
Her study examined how various built environment factors influence fatal and serious pedestrian crash risks, stressing their impact on land use and transportation planning at the local level. Funded by the German Federal Ministry of Education, the research emphasizes that roads serve not only traffic flow but also local activities like shopping. She recommends that Uganda's Ministry of Works and Transport, the Kampala Capital City Authority, and the Uganda National Roads Authority design roads that accommodate diverse traffic functions. Specifically, areas with high pedestrian activity should be pedestrianized, with additional measures such as dedicated walkways and traffic separation implemented.

With over a decade of experience, Dr. Bayiga has dedicated her work to road safety, focusing on injury epidemiology, post-crash care, and evaluating health interventions. Her expertise earned her a spot on the WHO's Global Technical Advisory Group on Powered Two- and Three-Wheeled Vehicle Safety. The group, made up of experts from countries with high motorcycle use like Vietnam, Kenya, Colombia, Uganda, and Malaysia, works on shaping policies to reduce fatalities and promote safer, sustainable transport.

Mr. Bonny Balugaba, another member of the School's TRIAD research group is part of a study focusing on helmet use among boda-boda riders as well as speed of road users in Kampala city. Despite widespread awareness of their protective benefits, only 39% of riders wear helmets, and the majority of those who do, wear them improperly, Research demonstrates clearly that using helmets correctly could reduce fatalities by 42% and head injuries by 69%. Beyond individual behaviour, the study also points to the discomfort of helmets, particularly those unsuitable for Uganda's weather, which may contribute to low usage.

Concerning speeding, SUVs and saloon cars, in particular, were found to be speeding at an average of 57 km/h, well above the recommended limits of 50km/hr for urban areas. What's even more troubling is that 60% of vehicles were traveling at unsafe speeds, far exceeding the recommended global guideline of 30 km/h for local roads. This underscores the urgent need for stronger enforcement of road safety measures to safeguard everyone on the road, from pedestrians to passengers.

Together, we can promote safe travel!



*Boda bodas at Mulago traffic lights. In Uganda, motorcyclists accounted for 49% of reported road deaths, followed by pedestrians at 44%, highlighting a concerning trend in fatalities and serious injuries since 2018.*

# PERSuADE Driving Data-Driven Solutions for TB, HIV, and Malaria in Uganda




*Prof. Rhoda Wanyenze and Fred Wabwire Mangeni, Project Principal Investigators, Dr. John Ssenkusu, Project Co-PI, and Dr. Simon Kasasa, the Country Principal Investigator for PERSuADE*

Health decision-making in Uganda hinges on accurate data to guide policies, allocate resources, and implement interventions. This is especially crucial for addressing the combined challenges of HIV, malaria, and TB, where data-driven approaches are essential for improving health outcomes and saving lives.

As MakSPH celebrates 70 years of research and training in 2024, Uganda still faces a heavy health burden. With over 1.4 million people living with HIV, the country sees 54,000 new infections and 17,000 AIDS-related deaths each year. Tuberculosis affects more than 90,000 people annually, worsened by rising drug-resistant strains. Malaria, another leading cause of death, results in 13 million cases and 19,600 deaths each year, underscoring the urgent need for enhanced disease prevention and treatment efforts.

It is this challenge that Kiboga, found in Central Uganda, finds itself, in ensuring that the over 190,000 people within the district access essential healthcare services, whenever they need them, albeit without suffering much financial hardship. This was the thinking guiding the implementation of the PERSuADE Project, the short form for the: *'Partnership to Enhance Technical Support for Analytical Capacity and Data Use in Eastern & Southern Africa,'* ended in 2023, aimed at strengthening the capacity for data analysis and use within the health ministry, with the opportunity for this knowledge to be cascaded down the channels to support the districts, sub-counties, and lower health facilities in their day to day work.

PERSuADE was implemented in two phases from August 2018 to December 2020, and August 2021 to December 2023, with funding from the Global Fund. MakSPH in Uganda led and coordinated the multi-country project, initially across eight and later twelve East and Southern African countries. In collaboration with Uganda's Ministry of Health, the project provided technical support for data analysis in Malaria, TB, and HIV national programs, while also assisting five selected districts, including Kiboga, Buikwe, Kasanda, Mukono, and Mityana.

The PERSuADE Project Principal Investigator and Dean, MakSPH, Prof. Rhoda Wanyenze intimates that this Project strengthened health systems for data analysis and use for HIV, TB, and Malaria national programming, revealing that the partnership facilitated effective transfer of analytical skills to Ministry of Health staff at national and sub-national levels through targeted capacity building from the University.

*"Leading PERSUADE and engaging with colleagues across several countries in Africa has been fulfilling. It's been rewarding to see how the Project has transformed data use within the health system, not only by enhancing technical skills but also growing a culture where data is seen as a vital tool for decision-making. The partnership between ministries of health, universities, and local and sub-national teams has been essential in driving these changes. I feel privileged to have been at the forefront of this effort."* Prof. Wanyenze notes warmly.

Dr. Wanyenze emphasizes how improved data analysis is enabling Ministries of Health to deliver more effective interventions that directly enhance community well-being. With better skills at national and local levels, health teams can pinpoint gaps in addressing HIV, TB, and malaria, ensuring resources are allocated where they're most needed and prevention campaigns are tailored to local risks. The PERSuADE project aligned with global Sustainable Development Goals (SDGs), particularly the aim to end HIV, TB, and malaria as public health threats by 2030.


*Dr. Estifanos Biru Shargie from the Global Fund with the Ministry of Health team, led by the Assistant Commissioner for Health Information Management, Mr. Paul Mbaka, during a meeting in Kampala, September 2024.*

Dr. John Ssenkusu, Co-Principal Investigator and biostatistician at MakSPH, echoes this, stressing the project's role in advancing data-driven approaches to achieve these milestones.

"The idea was that the Ministry of Health collects vast amounts of data, but much of it remains unanalysed and unused despite its potential value. One challenge was the lack of capacity within the Ministry to continuously analyze and use this data. Other issues included limited demand for data and difficulties in packaging it effectively. Before PERSuADE, external experts would be brought in to conduct analyses, generate reports, and leave. PERSuADE introduced a model that relied on local institutions with expertise, such as the School of Public Health and schools of statistics, to analyse data and produce actionable results. This eliminated dependence on foreign experts and ensured continuity, as the Ministry could easily access local expertise for further analysis whenever needed," Dr. Ssenkusu shares.

In Uganda, PERSuADE I deepened collaboration between the MoH and MakSPH, delivering six key analytical outputs over two years. The initiative enhanced capacity by fostering joint data analysis, mentoring ministry staff, and embedding findings into monitoring systems. Key among the achievements was putting recommendations for multidrug-resistant TB into the national five-year plan and creating a database for malaria data to help with targeted interventions under the High Burden to High Impact framework.

Under PERSuADE II, the project made a huge difference across 12 countries, equipping over 1,500 health workers,including 934 at sub-national levels, with skills in data analysis and application. More than 80 outputs on HIV, TB, and malaria shaped National Strategic Plans in seven countries and improved strategies across all 12. Sixteen professionals from seven nations received specialized training in areas like HIV surveillance and health information systems. The introduction of the Maturity Index Model in five countries empowered ministries to assess their progress in adopting data-driven decision-making.

During a September 2024 learning visit to Uganda, Dr. Estifanos Biru Shargie, Senior Specialist for Monitoring and Evaluation at the Global Fund, praised the PERSuADE

Project for enhancing local capacity and driving sustainable health system improvements. Engaging with Ministry of Health officials and Kiboga District leaders, he highlighted the district's progress in using data for critical decisions like drug quantification and workforce planning, an improvement in data-informed governance.

"The impact has been significant. Data analysis promotes people-centred care, helping identify service gaps and improving access to quality healthcare. For example, analysing TB treatment data can highlight where patients default on treatment, guiding targeted interventions to ensure adherence and better health outcomes. In Kiboga District, I was impressed by how teams mapped gaps in services and addressed them over four years, using data to inform decisions and monitor progress," Dr. Shargie observed with great fulfilment and excitement.

Adding that: "Working with [MakSPH] has been an honour. The School blends academic excellence with practical implementation, backed by strong financial management and a long-standing relationship with the Ministry of Health. Their coordination, networking, and efficiency have been exemplary."

Isa Kamuli, a biostatistician for Kiboga District, echoed Dr. Shargie's praise for PERSuADE, noting its transformative impact on his work. The project equipped him and Health Information Assistants with advanced skills in tools like STATA, R, and PowerBI, to enable complex data analysis. These competencies have improved their use of Ministry of Health tools such as DHIS2, HMIS registers, and Excel for effective surveillance and reporting.

By streamlining data collection and analysis from health facilities and Village Health Teams, the district now produces timely, accurate reports that drive informed decisions and improve healthcare services. Mr. Kamuli noted significant progress in data accuracy and timeliness, which had been a major challenge. This improvement extends across both government and non-government facilities and community-level reporting. One analysis, shared during a district council meeting, led the local government to allocate land for a new health facility in Kayeera Sub-county, addressing its longstanding lack of a government health center.

The Ministry of Health's Assistant Commissioner for Health Information Management, Mr. Paul Mbaka, and Mr. Quinto Ebony, head of the national TB Programme, expressed gratitude to the Global Fund and Makerere University for bridging the gap between decision-makers and the overwhelming volume of data. They highlighted that the routine insights generated during the project informed decisions across multiple ministry programs, extending beyond HIV, TB, and malaria.

PERSuADE involved partners across 12 countries, with MakSPH in Uganda hosting the Secretariat. Partner universities included the University of Nairobi, Muhimbili University, Agostinho Neto University, University of Eswatini, National University of Lesotho, Eduardo Mondlane University, University of Antananarivo, Kinshasa School of Public Health, University of Malawi, University of Zambia, and University of Zimbabwe These universities worked alongside their Ministries of Health to strengthen analytical capacity and promote data use in national health programs.

*Mr. Isa Kamuli (extreme right), the Biostatistician for Kiboga District explaining the success story during a learning visit to the District.*

# Public Health is Always Political

As Makerere University School of Public Health (MakSPH) celebrates its 70th anniversary, it not only reflects on a remarkable legacy but also charts a bold course for the future. For seven decades, MakSPH has been at the forefront of public health in Uganda and beyond, tackling some of the world's most complex challenges. Its greatest successes—whether in responding to pandemics, advancing reproductive health, or tackling entrenched diseases like TB—are rooted in its ability to navigate the complex political terrain where evidence, advocacy, and political realities intersect. This emphasises one unshakeable truth: *public health is political.* The relationship between politics and health goes beyond elections or policies; it is about power, priorities, and partnerships. MakSPH has built its reputation by not only asking these questions but also by demonstrating its ability to navigate the complex political terrain, facing challenges such as funding cuts, policy changes, and public health crises head-on.

## A Legacy of Achievements

A politically-sensitive approach has been central to MakSPH's numerous achievements and contributions to population health not just in Uganda but globally. For instance, Uganda's Safe Male Circumcision program, aimed at reducing HIV transmission, required more than just scientific evidence. It demanded an understanding of community dynamics, the engagement of cultural leaders and traditional institutions, and navigating policy priorities. The program's success reflects MakSPH's ability to translate evidence into action while addressing the social and political challenges that accompany public health interventions. This demonstrated MakSPH's ability to translate complex evidence into sustainable, politically sensitive action.

MakSPH's role in Uganda's COVID-19 national task force is another example of political engagement. While the pandemic presented a crisis of science, it was equally a dilemma in political decision-making circles. The School's contributions went beyond technical expertise. Rather, emphasised the political and social considerations like balancing lockdown measures with economic survival, engaging stakeholders, and maintaining public trust. These actions highlighted the importance of embedding multidisciplinary health expertise within political processes to drive effective, inclusive policies. Similarly, the National TB Prevalence Survey led by the School was not just a technical exercise but a politically strategic initiative. By framing TB as a national priority and linking the findings to policy action, MakSPH ensured that resources and attention were directed to this pressing health challenge. The uptake of the survey findings into the national TB program demonstrated how evidence can influence political will, enabling systemic changes that benefit the population.

The School's Performance Monitoring for Action (PMA) and Research for Scalable Solutions (R4S) initiatives in family planning illustrate how strategic engagement with political realities can advance reproductive health. Recognising that family planning (FP) is a sensitive issue influenced by cultural norms and governance structures, MakSPH has acted politically. For example, those initiatives have built coalitions, aligned FP priorities with national policies and aspirations like the demographic divided, and demonstrated using data the economic and social benefits of reproductive health investments. Similarly, MakSPH has played a pivotal role in linking climate change to health outcomes shaping Uganda's Climate Change Adaptation Plan. These achievements underscore MakSPH's ability to connect health to broader societal challenges, making its work relevant to policymakers, communities, and global institutions alike.

But public health is not just about big-picture occasional issues—it is about striking delicate balances in fairly routine policy decisions. Should a country prioritise building hospitals or roads? Should funds be allocated to vaccines or education? MakSPH has been instrumental in navigating such trade-offs. Through initiatives like the Supporting Policy Engagement for Evidence-Based Decisions (SPEED) for Universal Health Coverage (UHC) project, the School has brought together policymakers, researchers, and grassroots organisations to ensure that health policies are inclusive and grounded

*Dr. Aloysius Ssennyonjo*

in evidence. The SPEED initiative spearheaded the development of the national policies towards UHC notably the National Roadmap for UHC. Through organising think tanks, fostering multisectoral engagement, and hosting high-level policy dialogues and symposia, projects like SPEED, have enabled MakSPH to provide actionable, evidence-informed policy advice for health and development.

However, MakSPH's influence extends far beyond its recent research projects and knowledge translation efforts. Over the years, the School has grown a vast network of alumni and partners who are now leaders in government, international organisations, and civil society. The Alumni continue to champion public health priorities, carrying forward the values and insights gained during their time at MakSPH. Partnerships with institutions across Africa and beyond further amplify MakSPH's impact, allowing the School to shape policies and programs at national and global levels.

## The Next Frontier: Reinforcing Political Analysis and Action for Public Health Advancement

Looking ahead, MakSPH's Strategic Plan for 2025–2030 is both ambitious and timely. The challenges facing public health are more complex than ever, from climate change and non-communicable diseases to the rapid rise of digital health technologies. To address these issues, MakSPH is re-emphasising its commitment to understanding and influencing the political determinants of health. The Department of Health Policy Planning and Management is ready to champion this agenda. This commitment instils confidence in the School's future direction.

Whereas the vision for the future is clear, attaining these bold aspirations requires evangelical zeal. MakSPH should become a leader in initiatives on diplomacy and politics for health and development. By creating a robust scholarship on these issues, the School will help shape policies that prioritise people's wellbeing and sustainable health. Critical actions should include the establishment of think tanks that provide actionable policy advice. Such vehicles will foster inclusive dialogues, bringing together voices from across society to co-create solutions. In training future leaders, MakSPH should prioritise the tools to navigate political realities and drive systemic change. This involves equipping students and practitioners with skills to understand and navigate power dynamics, negotiate competing priorities, and build coalitions that advance health outcomes. The recent curricula changes offer opportunities to emphasise real-world challenges, from managing resistance to health reforms to leveraging evidence to influence policy debates.

As it enters its eighth decade, MakSPH's vision is not just to adapt to changing times but to lead the way in ensuring that health remains a priority in an increasingly complex world. MakSPH's legacy underscores a vital lesson: *public health is inherently political.* Whether it's navigating trade-offs between health and infrastructure investments or advocating for policies that place health equity at the centre, the School has consistently demonstrated that success in public health requires political savvy, strategic engagement, and an ability to bridge the gap between evidence and action. Building on its legacy of successful projects like SPEED for UHC, the School is primed to succeed in this ambitious endeavour.

After all, health is political—and MakSPH is here to make that politics work for the people.


## Brief profile

Dr. Ssennyonjo is a Senior Lecturer and an interdisciplinary scholar bridging public health, management, political science, and development studies. As part of the Collective for Political Determinants of Health, his work explores the intersection of health, politics, and development.

# Alumni Spotlight

# MakSPH Alumni in Action

**A recent survey of over 500 Makerere University School of Public Health alumni underscores a legacy of impact, with 78.2% currently employed, primarily in Uganda. Alumni are making notable contributions to leading organizations locally and globally, reflecting the School's role in shaping transformative public health leadership.**

## Graduate Career courses & Destinations

*Alumni Database

Data obtained from:

- The School's Alumni database (*Alumni Database). We used all data updated within the past year.

MAKERERE UNIVERSITY
SCHOOL OF PUBLIC HEALTH

### Overview

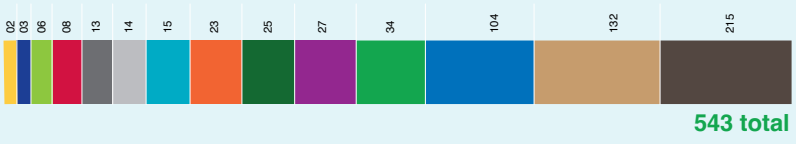
**543** Responses Collected

**91.9%** Located & based in Uganda

**78.2%** Currently Employed

**21.8%** Not currently engaged in public health work

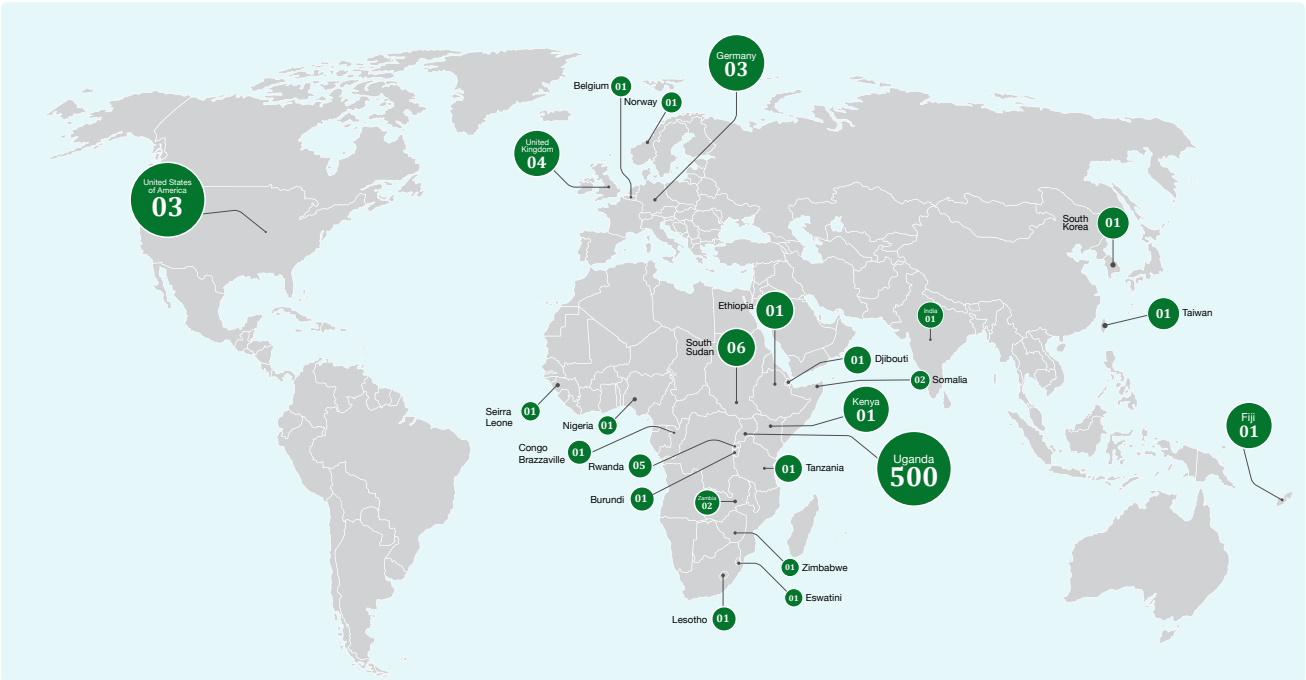
**Course(s) pursued at MakSPH**




MPH · MPHDE · BEHS · MHSR · MBIO · MEOH · MHI · MPHN · MPHME · MPHDM · Other · PhD · MMED · Dip in Pub

# Global Destinations

*Alumni Database
Sample countries our alumni are currently based in.

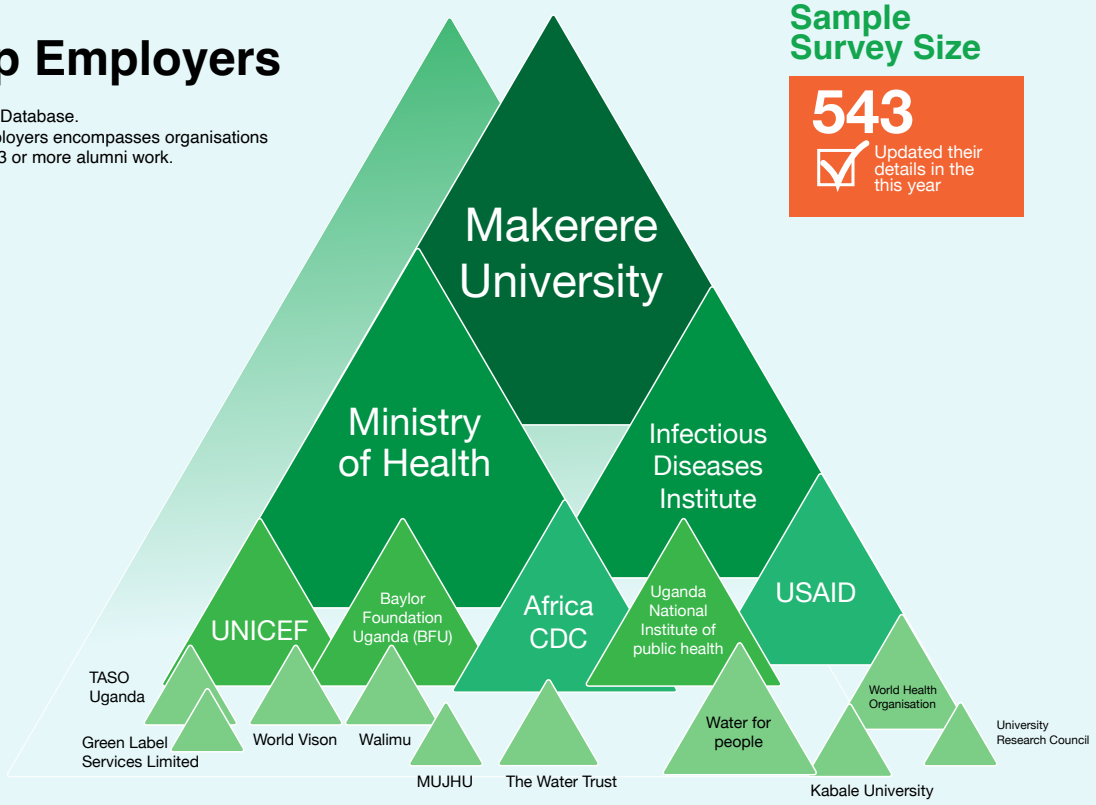



# Top Employers

*Alumni Database.
Top employers encompasses organisations where 03 or more alumni work.

## Sample Survey Size

**543**
Updated their details in the this year



# Alumni Spotlight

# MakSPH taught me that Real change starts with listening to communities

When I look back at my career journey, I see a path shaped by passion, resilience, and an unyielding commitment to transform lives. I am Carol Nabasirye, a Ugandan public health nutrition practitioner and alumnus of MakSPH. My story is one of learning, growth, and the power of education to inspire change.

My professional journey began with a bachelor's degree in Food Processing Technology from Kyambogo University, where I first nurtured my interest in nutrition. As a young graduate, I was recruited to work in Nakapiripirit and Amudat districts in Karamoja, one of Uganda's hard-to-reach and most vulnerable regions. Initially, I thought I was prepared to tackle the realities of malnutrition, but nothing could have prepared me for the heartbreaking scenes I encountered. Children were emaciated, and mothers struggled to provide even a single meal a day. For the first two weeks, I could barely hold back my tears.

My early days in Karamoja had a reflective impact on me. I realized that nutrition was not just about providing food; it was about addressing poverty, education, and systemic barriers that hinder health and well-being. This realization drove me to seek deeper knowledge and solutions.

In 2019, I joined MakSPH to pursue a master's in public health nutrition. I was drawn to the school's reputation for producing leaders in public health and its focus on evidence-based practice. During my time at MakSPH, I gained invaluable skills in research, data analysis, and policy development, which transformed the way I approached my work.

One of the defining moments during my studies was participating in the development of the Maternal, Infant, Young Child, Adolescent, and Nutrition (MIYCAN) guidelines at the Ministry of Health. This experience opened my eyes to the power of policy in shaping health outcomes. It also affirmed my passion for creating practical, context-driven solutions for vulnerable populations.

After completing my studies, I joined World Vision Uganda, working as a project officer for health and nutrition in Karamoja. Armed with the knowledge I gained at MakSPH, I approached my role with a fresh perspective. I emphasized research and stakeholder engagement, ensuring that interventions were both effective and sustainable. Currently I am a project coordinator, and in my new role, I work with teams to improve health service delivery for all, including persons with disabilities in Oyam, Omoro, and Pader districts.

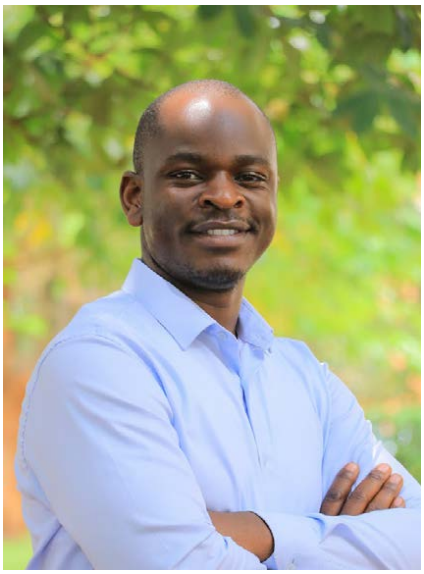
One of my proudest achievements has been contributing to Uganda's first national guidelines on feeding children with disabilities. During community engagements, I met mothers who had lost hope in caring for their children with special needs. Teaching them simple, practical feeding techniques not only improved the children's health but also changed how these mothers viewed their children.

*Carol Nabasirye*

Moments like these remind me why I chose this path—to transform lives, one community at a time.

MakSPH taught me more than just technical skills. It instilled in me the value of collaboration, critical thinking, and lifelong learning. The rigorous training, I received in biostatistics and epidemiology allows me to critically evaluate reports and guide impactful programming. The networks I built at MakSPH have also been instrumental, connecting me with professionals across sectors who share a commitment to improving public health.

# Mentorship at MakSPH Strongly Impacted my career



*Abel W. Walekhwa*

My journey at MakSPH began in 2013 when I enrolled in the Bachelor of Environmental Health Science after completing my diploma at Mbale School of Hygiene in 2012. Unsure of my career path, I sought advice from Mr. Geresom Illukor, the Principal of Mbale School of Hygiene, who opened my eyes to the potential of Environmental Health Science in disease prevention. He connected me with Dr. Frederick Oporia, a MakSPH alumnus whose success inspired me. Dr. Oporia's generous mentorship set me on a transformative path in my career.

At MakSPH, Dr. Edith Nakku Joloba's Principles of Epidemiology course ignited my passion for epidemiology and public health research with her engaging teaching style. My interest deepened while working on my dissertation about a measles outbreak in Kasese District, guided by Prof. Edgar Mulogo and Dr. Ross Boyce from the University of North Carolina at Chapel Hill. These experiences inspired me to further my studies, leading to an MPH at the University of California, Berkeley. I'm now pursuing my doctoral studies in Epidemiology at the University of Cambridge, focusing on mathematical modeling for Rift Valley fever in Uganda, under the mentorship of Dr. Andrew Conlan and Prof. James Wood.

In March 2020, I joined Uganda's national COVID-19 response, starting as a volunteer and eventually taking on roles as a Research Associate and Senior Epidemiologist. My passion for epidemiology led me to establish the IDEMU Mathematical Modelling Unit in Uganda, where I've had the privilege of training over 70 professionals in infectious disease modeling across Africa. These accomplishments are rooted in the mentorship and inspiration I've received—and continue to receive—at MakSPH.

Mentorship at MakSPH has been a foundation of my career development. In my second year, I reached out to Dr. David Musoke, a Senior Lecturer at the School, and he graciously agreed to take me on as a mentee. A turning point for me was during the 2019 Environmental Health Workers Association of Uganda (EHWAU) dinner, where he encouraged me to pursue meaningful opportunities instead of settling for short-term roles. This advice motivated me to seek his support for recommendation letters and sparked a journey of self-discovery, helping me recognize my strengths and align them with my career goals. Dr. Musoke's mentorship has truly shaped the professional I am today.

At MakSPH, I gained precious leadership experience, serving as the GRC for the 80th Makerere Students Guild in 2013/14 and participating in One Health outreach programs. These experiences led to my election as Global One Health President for the International Students One Health Alliance (ISOHA) in 2019/2020. I'm now proud to serve on the One Health High-Level Expert Panel (OHHLEP) for 2024–2026 with the UN's Quadripartite organizations.

Since graduating from MakSPH in February 2017, I've been deeply involved in teaching and research at the School. Working alongside senior faculty has enhanced my research profile, resulting in impactful publications and successful grants. I've also played a key role in teaching and supervising projects on Anthrax, Rift Valley fever, and Ebola, which have attracted significant funding and advanced critical research.

The MakSPH community has been essential to my professional growth. Joining the PhD forum inspired my doctoral journey at the University of Cambridge and opened many doors. The School fosters innovation, collaboration, and networking, and I am truly grateful for that.

To current students and young alumni, my advice is to find a mentor early, define your career path, and pursue your goals with determination. The lessons and connections you make at MakSPH will lay the groundwork for a rewarding and impactful career.

## Brief profile

Abel W. Walekhwa, an alumnus of Makerere University School of Public Health (MakSPH), BEHS (2013-2016). He is a Senior Program Officer at the Science, Technology, and Innovation (STI) Secretariat in the Office of the President, Uganda and a Member of the UN's Quadripartite Organisation's One Health High-Level Expert Panel (OHHLEP) for 2024 to 2026.

# Military Service Inspired me to do Public Health

Dr. Patrick Tusiime's journey to becoming a leading voice in public health in Uganda reflects his dedication and leadership. Until his retirement this year, he headed the Department of Communicable Diseases at the Ministry of Health. He credits much of his success to the practical knowledge and hands-on experience he gained at MakSPH.

Tusiime's passion for public health was ignited during his early medical career in the Uganda People's Defence Forces (UPDF), where he encountered firsthand the urgent need for disease prevention. "While in service, it was very clear that Public health was the first remedy in disease prevention," he reflects. "My time at MakSPH pursuing a Master of Public Health from 1997 and 1999, I gained a lot of skills and confidence to turn this passion into action.

One of his most vivid memories from the program was conducting his first postmortem in Kabarole under the mentorship of Dr. Kabagambe. *"A house fire had injured several people, and a child had died. They couldn't bury the child until a postmortem was done, and I was the only one available to handle it. With the skills I had learned, I conducted the postmortem and prepared a report. It was a challenging moment, but it gave me the confidence to manage emergencies,"* he recalls.

MakSPH's practical, community-focused training shaped not only Tusiime's technical skills but also his philosophy as a leader. After completing his Master's degree, he took up the role of District Health Officer (DHO) in Kabale in 2004. This position allowed him to apply the leadership lessons he had gleaned at MakSPH. *"Good leadership is vital in public health. The crisis in Uganda's health sector is not just about resources—it's about leadership. As a DHO, I saw how much of a difference a committed leader could make by inspiring and convincing others to work towards a common goal,"* he says.

Tusiime's approach to leadership emphasised collaboration, evidence-based decision-making, and practical solutions to local health challenges. He often cites the importance of aligning training with the country's needs. "*Health institutions need to focus on the problems that affect us as a country. Most diseases, about 75 per cent, are preventable, and our training should reflect that reality,"* he argues.

Despite his numerous career accomplishments, Dr. Tusiime also, at one point, contemplated pursuing a career in political leadership during his tenure in Kabale. Ultimately, he realized that the commercialization of politics did not align with his values; he decided to stay and instead focus his passion for public health. *"I was interested in running for MP in one of Kabale's constituencies, but I quickly realised that politics had become transactional. It wasn't a space I felt I could thrive in or contribute to meaningfully,"* he admits.

For aspiring health workers, Tusiime offers a piece of wisdom shaped by years of experience: *"Ask yourself if health is truly your calling. If it's not, you risk falling into unethical practices that can tarnish the profession. Public health demands dedication and integrity."*

Dr. Tusiime's journey reflects the profound impact that MakSPH alumni have had on Uganda's health systems. From serving in the UPDF to shaping key policies at the Ministry of Health, he has applied the skills and values gained at MakSPH to lead and inspire. His story shows how the right training and sense of purpose can drive lasting, positive change in public health outcomes and policy.

**MakSPH's practical, community-focused training shaped not only Tusiime's technical skills but also his philosophy as a leader.**

# The Making of Vanessa Mugide

## A Journey of Passion, Practice, and Mentorship

I'm Vanessa Mugide, a Monitoring, Evaluation, and Learning (MEL) Specialist passionate about bridging public health gaps and empowering communities. I have over five years of working experience, and currently, I work at GIZ-Uganda, where I support impactful programmes in Water, Sanitation, and Hygiene (WASH) and promote women's employment in green sectors.

My journey in public health began with a desire to address disparities and improve lives. MakSPH was fundamental, offering me rigorous training and mentorship that built my expertise in research, analysis, and leadership. Enrolling for the Bachelor of Environmental Health Science in 2015, and later graduating in 2018 laid a strong foundation for me. And this has been crucial in designing and implementing WASH initiatives that make a real difference, further advanced by the knowledge and skills am acquiring in my Masters in Public Health, currently on-going.

A career-defining moment was participating in the One-Health field attachment under the One Health Central and Eastern Africa programme. Collaborating with a multidisciplinary team, we devised innovative solutions to WASH challenges in communities. This experience sharpened my problem-solving, teamwork, and leadership skills—qualities I draw on daily in my professional journey.

At MakSPH, the blend of theory and fieldwork prepared me to excel in public health programming and M&E. Courses like Biostatistics, Epidemiology, and Health Systems have been instrumental in shaping my approach to delivering evidence-based insights that drive effective decision-making and lasting change.

MakSPH's commitment to excellence in public health was evident in numerous ways during my time. A standout feature for me was the mandatory research dissertation before graduation, which equips students with the necessary research skills. This rigorous process, supported by expert mentorship from the School's lecturers, ensured that we graduated not just as practitioners but as competent researchers. The experience of conducting research aligned perfectly with the School's focus on producing evidence-based public health interventions.

One key thing I note is that MakSPH has a unique training approach that combines rigorous theory with practical fieldwork, equipping students to link classroom knowledge to real-world challenges. This blend fosters confidence and creativity in addressing complex health issues.

The School's reputation, fortified by its contributions to respected journals and cutting-edge research, instils pride and a commitment to excellence among its students. The Makerere University Environmental Health Students' Association (MUEHSA) is one of those initiatives that stress this commitment. MUEHSA's annual Scientific Conferences bring together students, academics, and practitioners to tackle pressing environmental and public health challenges, emphasizing evidence-based and innovative solutions.

I was a secretary MUEHSA during my time and this was transformative. It sharpened my teamwork, organizational,

and strategic thinking skills and provided me opportunities to engage in impactful initiatives alongside passionate peers. I received mentorship from MakSPH lecturers like Dr. David Musoke, Dr. Simon Kibira, Ms. Rebecca Nuwematsiko, Dr. Esther Buregyeya, Dr. Rawlance Ndejjo, and Dr. Aggrey Mukose and their guidance truly shaped my academic success, competencies, and career direction.

The skills and experiences I gained at MakSPH helped me stand out and secure roles with incredible organizations like GIZ. MakSPH's strong reputation has also elevated my professional profile, opening doors to impactful public health and research opportunities.

To the current students: make the most of MakSPH's offerings, both in and out of the classroom. Join student associations to build leadership and teamwork skills, and seek mentorship from lecturers to guide your growth. Prioritize networking—make connections with peers, professors, and collaborators often lead to career-changing opportunities. Finally, stay curious and committed to lifelong learning. It helps.

# Ruth Mubeezi's Journey From MakSPH Student to Faculty in Public Health

I was drawn to MakSPH because of its renowned reputation for producing impactful public health leaders across Africa and its being a pioneer in teaching environmental health sciences at a degree level in Uganda. The opportunity to learn from leading experts in the field, coupled with the School's focus on addressing real-world health challenges in diverse settings, was incredibly appealing.

The training emphasized critical thinking, problem-solving, and data analysis – skills crucial for my current role in teaching. The experience of working on collaborative projects, presenting research findings, and engaging in peer review honed my communication and collaboration skills, vital for both teaching and research.

During my fieldwork during my undergraduate studies, I witnessed firsthand the devastating impact of lack of WASH facilities on a vulnerable community. This experience profoundly shifted my perspective. It underscored the importance of not only understanding the epidemiological aspects of a health problem but also the social, economic, and political factors that contribute to it. This experience solidified my commitment to community-based participatory research especially in the field of environmental health.

The network I have built at MakSPH has been invaluable. Collaborations forged during my time here have led to several achievements in both my professional and personal life.

MakSPH instilled in me a deep commitment to improving health outcomes with a focus on the improvement of environmental

health. This commitment guides my teaching and research, ensuring that my work addresses the needs of different populations in Uganda. The emphasis on evidence-based practice and critical thinking continues to shape my approach to problem-solving and decision-making. The strong collegial framework promoted at MakSPH remains a cornerstone of my professional conduct.

MakSPH's graduates are making significant contributions to public health across Africa and beyond. The school's emphasis on training skilled professionals equipped to tackle complex health challenges is evident in the improved health outcomes and innovative interventions being implemented in Uganda and across the continent. The school's commitment to research and capacity building has significantly strengthened health systems and fostered a culture of evidence-based decision-making in public health in Uganda.

**MakSPH instilled in me a deep commitment to improving health outcomes with a focus on the improvement of environmental health.**

The field of public health and environmental health is constantly evolving. My advice to younger graduates is to embrace lifelong learning, stay abreast of the latest research and technologies, and cultivate adaptability. Developing strong analytical and communication skills is crucial. Furthermore, fostering collaboration and networking are essential for navigating the complexities of the field and making a meaningful impact.

Since my time as a student at MakSPH, the field has seen significant advancements in areas such as the development of new and exciting degree programmes like MEOH, MHI, MDM and a taught PhD. I believe MakSPH has adapted effectively by bringing to the front new disciplines that are very important for health professionals in Uganda today. The school's continued focus on community engagement and addressing emerging health challenges demonstrates its commitment to remaining at the forefront of public health.

MakSPH's legacy is one of excellence, impact, and unwavering commitment to improving public health. The school has provided me with the tools, knowledge, and network to pursue a fulfilling and impactful career in public health. I am deeply grateful for the opportunities I received, and I am proud to be part of the MakSPH alumni network. I wish the school continued success in its mission to train future generations of public health leaders.

# Sam Ongom's Inspiring Journey, From Classroom to Impacting Communities

I am Sam Ongom, an alumnus of Makerere University School of Public Health (MakSPH), currently serving as a Monitoring, Evaluation, and Research Advisor at Jhpiego Uganda.

When I began my career as a Data Supervisor and Monitoring and Evaluation Officer, I was eager to deepen my understanding of the health sector. MakSPH was the natural choice due to its outstanding reputation for academic rigour, research excellence, and dedication to community health. The supportive environment created by the staff, lecturers, and administrators made my academic journey enjoyable. I owe a great deal to my mentor, Ass. Prof. Peter Waiswa, whose guidance emphasized the value of pursuing an MPH in a rapidly evolving world. My time at MakSPH solidified my interest in health systems, research, and policy, shaping the trajectory of my public health career.

The diverse course units I undertook at MakSPH were instrumental in enhancing my capacity to conduct research and effectively communicate findings. This has been critical in my role, where I must demonstrate project impacts not only to donors but also to the public. Additionally, the program honed my analytical, project management, and problem-solving skills, which I apply daily in designing and implementing health programs.

One of the defining moments was defending my thesis. I remember the chair of the panel commending my presentation skills, stating, *"We are happy that we trained very good presenters."* That affirmation was a proud moment for me and reflected the rigorous training I had received. The challenging group discussions and inspiring lectures deepened my commitment to public health and strengthened my resolve to create meaningful change.

The professional network I built at MakSPH has been invaluable. Recommendations from faculty and fellow alumni have opened doors to career opportunities, while collaborations with peers have expanded my professional reach. To this day, I cherish these connections, as they have been integral to my achievements.

MakSPH instilled in me core values like integrity and innovativeness. Integrity has been my guiding principle, ensuring that I maintain transparency and honesty in all my endeavours. Innovativeness drives my work, enabling me to adapt lessons learned from projects to improve performance and maximize community impact. These values have been the foundation of my long-term professional growth.

MakSPH has been a cornerstone in shaping the public health ecosystem through impactful research, policy advocacy, and capacity building. Alumni like myself and many others are actively influencing health outcomes across diverse sectors, embodying the school's mission and commitment to excellence.

**I owe a great deal to my mentor, Ass. Prof. Peter Waiswa, whose guidance emphasized the value of pursuing an MPH in a rapidly evolving world.**

Public health is dynamic, and staying relevant requires adaptability, lifelong learning, and building multidisciplinary skills. Embracing technology and understanding its role in public health will be critical for future success. I encourage young professionals to be proactive in acquiring these competencies.

The rise of digital health and a greater focus on global health equity are notable evolutions in the field. MakSPH has adapted by updating its curriculum, enhancing field training, and fostering international collaborations. I was privileged to contribute to the curriculum review for Monitoring and Evaluation in public health, which underscores MakSPH's responsiveness to emerging trends.

I am deeply grateful to MakSPH for shaping me into the professional I am today. Its dedication to public health education continues to empower individuals to create meaningful change. I hope MakSPH's legacy of excellence and innovation continues to shine brightly, inspiring future generations of public health leaders.

May God bless MakSPH and Uganda.

***Happy 70th Anniversary!***

# Bagonza: The Journey to Becoming an ADHO in Environmental Health

My name is Bagonza Musitafa Salongo, and I serve as Acting Assistant District Health Officer (ADHO) for Environmental Health in Ntoroko District Local Government, a position I have held for three years, since graduating from Makerere University School of Public Health (MakSPH) in January 2021 with a Bachelor's of Environmental Health sciences.

My decision to join MakSPH stemmed from a desire to advance my education beyond a diploma, equipping myself for greater responsibilities in public health emergencies and disease prevention. As an ADHO, my core role is coordinating activities that prevent diseases of public health importance, a responsibility that demands a strong grounding in public health principles.

At MakSPH, various experiences significantly shaped my career. Participating in events like the Makerere University Environmental Health Students Association (MUEHSA) conferences, World Environmental Health Day commemorations, and Mak-Run expanded my understanding of public health issues. These platforms allowed me to network with peers and professionals from across Uganda and beyond while addressing critical issues such as non-communicable diseases, which is a growing global concern.

The mentorship I received from dedicated faculty members, including Dr. John Bosco Isunju, Dr. Mugambe Richard, and Ms. Bayiga Esther Ziwa, was invaluable. Their guidance during research and field placements inspired me and my 2017 cohort, fostering a collaborative and supportive learning environment that continues to influence my work.

MakSPH also instilled in me essential values, particularly time management, which has enhanced my effectiveness in service delivery. These principles are critical for maintaining a harmonious working environment and ensuring timely public health interventions.

Despite the strong foundation provided by MakSPH, challenges persist at the district level. For instance, public health departments struggle with staffing shortages, which hinder the full implementation of health programmes. This highlights the importance of continued investment in human resources and institutional support.

Public health has empowered me to lead efforts in disease outbreak prevention, surveillance, and advocacy for improved water, sanitation, and hygiene (WASH) services. My role demands vigilance in identifying and mitigating health risks while promoting sustainable community interventions.

To aspiring public health professionals, my advice is to stay focused, disciplined, and committed to continuous learning. Aim high, seize opportunities to upgrade your skills, and remain adaptable in this ever-evolving field.

Finally, I urge MakSPH to strengthen its alumni network to foster knowledge exchange and collaboration among former students. Such a platform would enrich the School's influence on public health policy and practice while benefiting current students.

MakSPH has been pivotal in shaping my career and instilling values that guide me in making meaningful contributions to public health. For this, I am profoundly grateful.

**Public health has empowered me to lead efforts in disease outbreak prevention, surveillance, and advocacy for improved water, sanitation, and hygiene (WASH) services. My role demands vigilance in identifying and mitigating health risks while promoting sustainable community interventions.**

# Community Engagements

# The Power of Partnerships

## A 70-Year Journey of Transformation

On the eve of 70 years of public health leadership, the MakSPH Partnerships Office is proud to reflect on the journey of collaboration that has been instrumental in shaping the school's legacy. This milestone is not just a celebration of MakSPH's achievements but also a tribute to the partners—internal and external—who have walked this transformative journey with us.

Partnerships have been central to our story from the very beginning back in the 1950s, when it was a small department of preventive medicine. One of the earliest and most influential collaborations was with the Rockefeller Foundation, which supported the establishment of Kasangati Health Center. This partnership laid the foundation for MakSPH's model of integrating community health service delivery with research and training. Kasangati evolved into one of Africa's preeminent centers of excellence, contributing to the Primary Health Care (PHC) model that the World Health Organization (WHO) adopted globally.

As MakSPH transitioned into the Institute of Public Health in 1975, partners such as the Rockefeller Foundation, Denmark, and Norway played critical roles in its development. Their support enabled the construction of our current iconic four-story building in New Mulago, which continues to house MakSPH today.

Over the decades, partnerships with the Ministry of Health, international organizations like WHO and UNICEF, and academic giants such as Columbia University and Johns Hopkins University have fueled MakSPH's impact. Collaborative initiatives like the Mwana Mugimu Nutrition Centre and the Rakai Health Services Program stand as testaments to the power of partnership in advancing public health. The School is highly networked and collaborative as well. In more than 25 countries in Africa, heavily implementing partnerships with universities, aid and grant agencies in the US, UK, South Africa, and Asia.

But the story doesn't end with external collaborations. Engagements with key stakeholders internally including students, staff, alumni and universities and agencies have been equally vibrant. Alumni serve as ambassadors of MakSPH's mission, offering mentorship and resources to the next generation of public health leaders. Faculty and staff exemplify a culture of teamwork and innovation, driving interdisciplinary collaborations that have defined MakSPH's unique approach. And students, with their energy and creativity, continue to play a central role in research and community projects.

The next chapter of our journey is rooted in our bold vision: *"To be a global leader in public health training and knowledge generation for societal transformation."* To achieve this, strategic partnerships and collaborations will remain at the heart of this ambition—not as an end in themselves, but as the means to achieve excellence.

Our new strategic plan, 2025-2030 further stresses our drive to strengthen, develop and maintain mutually beneficial partnerships and collaborations in teaching, research and community service. We hope that by 2030, MakSPH will, by leveraging partnerships to attain excellence in public health training, knowledge generation and research leadership, avail scalable and sustainable community impact and for institutional capacity and global recognition.

In the 70 years of our existence, the Partnerships Office extends gratitude to all partners who have

been part of this journey. To our alumni, your mentorship and knowledge-sharing are priceless. To our faculty and staff, your leadership in interdisciplinary collaborations continues to shape MakSPH's future. To our students, your creativity and drive are at the heart of our success we truly appreciate your commitment and look forward to creating an enabling environment four studies. And to our current and future external partners, we invite you to join us as we expand the boundaries of public health innovation, training, and service delivery.

Together, we can drive sustainable health outcomes for Uganda and the world. Partnerships have built MakSPH's legacy, and they will define its future. With a shared commitment to collaboration and a vision anchored in global health leadership, we look forward to another period of groundbreaking solutions and transformative change. To the power of partnerships—past, present, and future.

***Brenda Wagaba***
***Partnerships Officer, School of Public Health | Makerere University***

# Positioning ourselves to Communicate Science Better

*Dr. Simon Peter Sebina Kibira*

I am truly excited to speak to you about MakSPH@70. Having been part of Makerere University for over 16 years, I've witnessed the tremendous transformation of the School of Public Health. As chair of the ICT and Publications Committee, I've seen firsthand how we've worked to improve communications and visibility—showcasing the valuable work of our researchers, alumni, and collaborators.

The School of Public Health has achieved so much, but there's still more to be done as we continue striving keep the regional leadership in public health. We've seen our research influence important national policies, for instance from the National Population Policy to guidelines on family planning. Our research for sustainable solutions and projects in the past decade is shaping Uganda's health landscape.

We are positioning ourselves for the next 30 years, aiming to reach 100 years as a world-class institution. We've paced towards increasing our visibility, engaging with Gen Z and Gen Alpha through our social media platforms, and empowering our alumni network to strengthen our research collaborations. But we also understand the importance of ensuring our research reaches the communities it's intended for. We will be working more and more with the people on the ground, in districts and local governments, see the impact of our work and so that they feel that we are a part of their daily lives.

Our role in public health goes beyond academia; it's about taking knowledge to the people, shaping their confidence around public health issues, improving lifestyle and reducing/ preventing diseases. We are committed to improving relations and engaging the media, our friends, the fourth estate, who help us amplify our work. We'll continue collaborating with the media to ensure accurate, impactful storytelling that resonates with the public.

As we embark on the next phase with our 2025-2030 strategic plan, we are committed to building a robust Knowledge Management and Communications Unit to better translate our knowledge and increase our reach, synergize on our partnerships, and work well and systematically with our communities. Together, we will continue shaping the future of public health in Uganda and beyond.

***Simon Peter Sebina Kibira, PhD***
***Senior Lecturer and Researcher***
***Chairperson, PR and ICT Committee***

*Professor Charles Ibingira consults with Professor Elizeus Rutebemberwa during one of the policy engagment workshops*

# Collaborative Initiatives

# How Mak-KI Partnership Advances Sustainable Health

In a world determined for balance, the 2015 adoption of the United Nations' 17 Sustainable Development Goals (SDGs) sparked a global call to action. Among these, Goals 3 and 4—sustainable health and quality education—stand as pillars of transformative change. Makerere University in Uganda demonstrates this vision, leveraging its influence to foster inclusive education, advance health initiatives, and ignite cross-sector collaborations that bring SDGs to life.

The COVID-19 pandemic disrupted countries worldwide but also accelerated the adoption of digital technologies. This shift sped up the formalization and launch of the Centre of Excellence for Sustainable Health (CESH), a collaboration between Makerere University (Mak) and Karolinska Institutet (KI) to promote sustainable health and support the 2030 Agenda. Established in September 2021, CESH was inspired by the UN's Goal 3: "to ensure healthy lives and promote well-being for all at all ages."

Through CESH, Mak and Karolinska Institutet KI are leading initiatives to advance several SDGs in sub-Saharan Africa. Initially conceived as a virtual center in 2019, its goal is to build capacity and mobilize actions for sustainable health. With slow progress toward Agenda 2030, there is a pressing need for a new approach to address interconnected SDGs and achieve universal health coverage.

As envisioned by Professors Ole Petter Ottersen (former KI President) and Barnabas Nawangwe (Vice Chancellor of Mak), this center is set to transform research and policymaking in sustainable health. It has the potential to foster a global community dedicated to sustainable health action. According to Prof. Rhoda Wanyenze, leader of the centre at Mak, *"We want to advance a global agenda for sustainable health by providing resources and tools for action for researchers, students, professionals, and policy makers."*

*Professors Rhoda Wanyenze and Tobias Alfvén, the leaders of CESH*

Prof. Wanyenze, also the Dean of the School of Public Health at Mak, co-leads the Centre alongside Prof. Tobias Alfvén, a Professor in the Department of Global Public Health at KI.

CESH focuses on four key areas: capacity building and education, tools and resources, networks and partnerships, and research. Supported by Sida, the Centre launched the SDGCap project to boost sustainable development in fragile states, advancing a comprehensive health and well-being agenda in Africa. Key stakeholders from public institutions, civil society, the private sector, and academia in DRC, Somalia, and Uganda have participated in over 30 activities, driving collaborative efforts toward these goals. In Uganda, activities have been carried out in Mukono and Mayuge Districts, as well as nationally, in partnership with the SDG Secretariat (Office of the Prime Minister). The SDGCap project's impact is clear. Aguti Betty Adimo, Senior Commercial Officer in Mayuge, noted that many government programs fail due to a lack of multisectoral guidelines. Thanks to the capacity-building workshops by CESH, she believes that SDG-aligned programs can succeed.

To scale this impact nationally, there's a need for widespread awareness and education about the SDGs. *"I had never attended anything about SDGs before. I only heard about them but didn't know the details. This workshop opened my eyes—I realized that activities like training people in cooperatives, savings, and partnerships are actually contributing*

**Since 2000, the Mak-KI partnership has thrived, fostering collaboration in teaching, research, and capacity building. In 2003, under Sida's capacity-building efforts, the institutions established a doctoral education agreement, resulting in 49 Makerere University students defending PhD theses, with 34 earning dual degrees.**

**Between 2001 and 2023, the partnership supported exchanges of 93 Makerere students and 61 lecturers to KI, and 148 KI students and 92 lecturers to Makerere, facilitated through Sida, EU, and KI scholarships.**

*to SDGs, even if we weren't aware of it,"* says Aguti Betty Adimo. At the national level, workshops have helped stakeholders understand the complex synergies between the SDGs and the importance of cross-sectoral collaboration.

With support from the Swedish Institute, CESH has trained nearly 200 individuals through the MIDWIZE and Managing Innovation for Sustainable Health (MISH) programs. MIDWIZE focuses on public health officers in maternal and child health care across Ethiopia, Uganda, Kenya, and Malawi. Meanwhile, MISH targets health professionals and decision-makers in the DRC, Somalia, and Uganda, promoting a culture of innovation to address the challenges of overwhelmed primary healthcare systems.

The Mak-KI partnership developed self-administered "Tools for Action" toolkits to support sustainable health initiatives. These four toolkits focus on: 1) data visualization and communication, 2) translating research into practice, 3) information and digitalization, and 4) innovation and technology for health. A fifth toolkit on multisectoral work is being prepared. Created by experts from Makerere University and KI, the toolkits offer practical frameworks to advance sustainable health. Four training sessions in Kampala have already equipped researchers, PhD students, faculty, media, and policymakers with skills in research translation and data visualization.

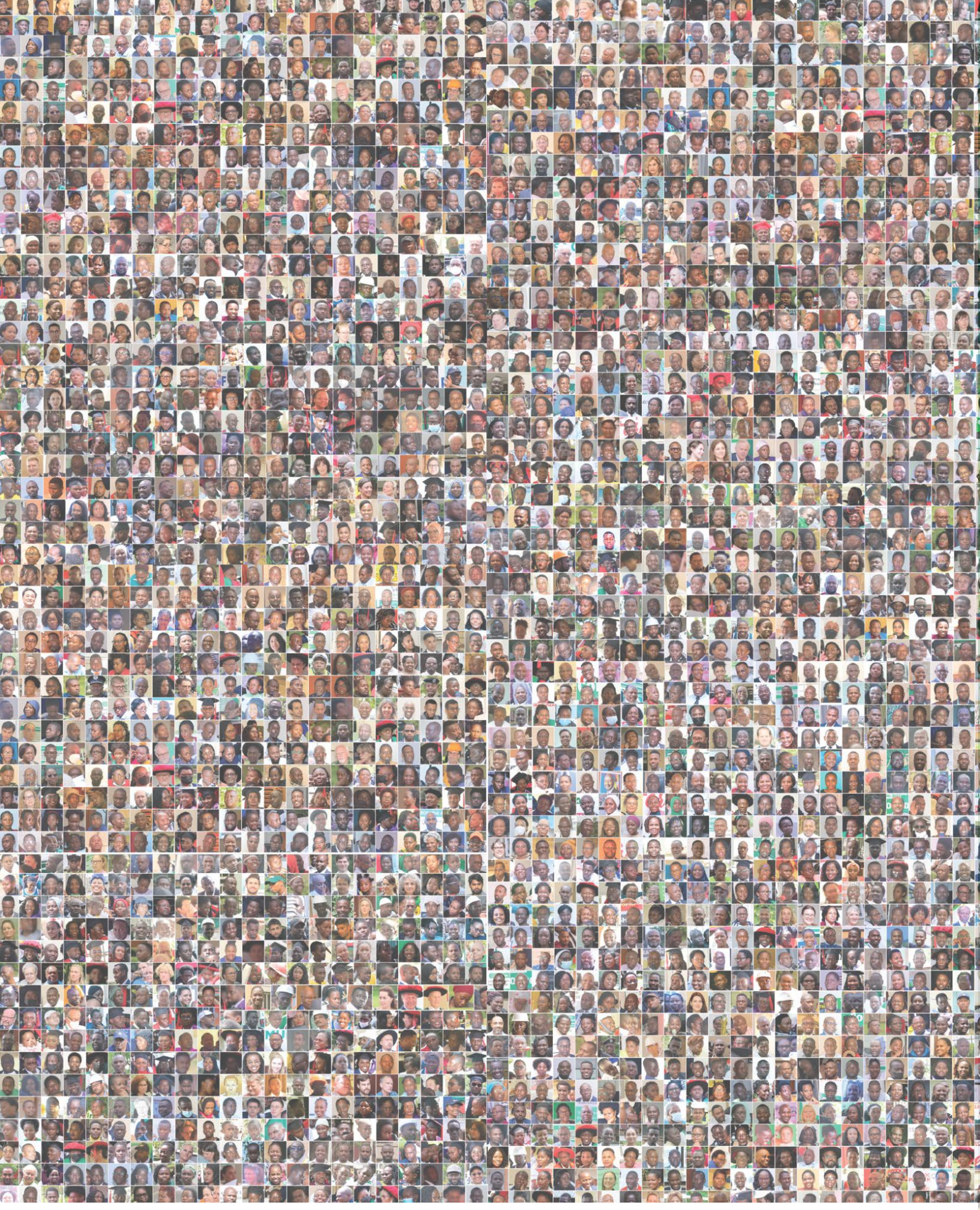
Fostering collaborations is a key strategy for CESH. Over the past three years, it has formed strategic alliances with top institutions like the University of Kinshasa (DRC), Benadir University (Somalia), the University of Nairobi (Kenya), the University of Malawi, and the University of Gondar (Ethiopia). To further enhance practical solutions for sustainable health, CESH has also partnered with Tinkr, a Norwegian innovation-focused business.

*CESH working group co-chaired by Prof. Rhoda Wanyenze (Mak) and Prof. Tobias Alfvén (KI) in a group photo with Prof. Annika Östman Wernerson, the President of Karolinska Institutet, and Prof. Martin Bergö, Vice President of Karolinska Institutet and Chairperson steering committee -CESH in a group photo recently in Stockholm, Sweden.*

CESH organizes the "Global Conversations on Sustainable Health," an annual four-part webinar series aimed at advancing sustainable health. The series serves as a platform for discussing innovative approaches and strategies to promote inclusive health and share new methods for achieving long-term wellness. On average, it attracts 300 global participants.

The research collaboration between Mak and KI continues to thrive, focusing on five key areas of sustainable health: 1) Sexual and reproductive health and rights for the vulnerable, 2) Children and adolescents' healthy start, 3) Non-communicable diseases, and 4) Climate change and health. These efforts have built a strong network of experts and researchers.


*Aguti Betty Adimo, Senior Commercial Officer at Mayuge District. Photo taken on September 14, 2022, at Betgid Hotel, Mayuge District, Eastern Uganda*



# People & MakSPH

# In Memoriam: Dr. Matthew Lukwiya

In November 2000, Dr. Matthew Lukwiya faced his greatest challenge in the isolation ward for Ebola patients at St. Mary's Lacor Hospital in Gulu, Uganda. As a physician and medical supervisor at the hospital, Dr. Lukwiya was at the forefront of the battle against the Ebola Virus Disease, an epidemic which had erupted in Gulu the previous month.

At the time of the outbreak, Dr. Lukwiya was pursuing a Master's in Public Health at Makerere University in Kampala, when he received an urgent news about a "strange disease" claiming lives in his hometown. Without hesitation, he returned to Lacor Hospital, where he meticulously studied patient charts and compared symptoms against guidelines from the U.S. CDC and the World Health Organization (WHO). Suspecting an Ebola outbreak, he promptly informed the Ministry of Health (MoH) and initiated control measures, establishing an isolation unit in accordance with WHO recommendations.

Dr. Lukwiya's leadership was crucial in containing the epidemic. He organized ambulance teams, set up burial protocols to prevent further spread, and mobilized staff and volunteers to care for patients. Despite the increasing number of admissions, at some point rising to sixty with only a handful of medical staff, he remained resolute, and emphasised the importance of community engagement to mitigate the risks associated with traditional burial practices, which posed significant public health threats.

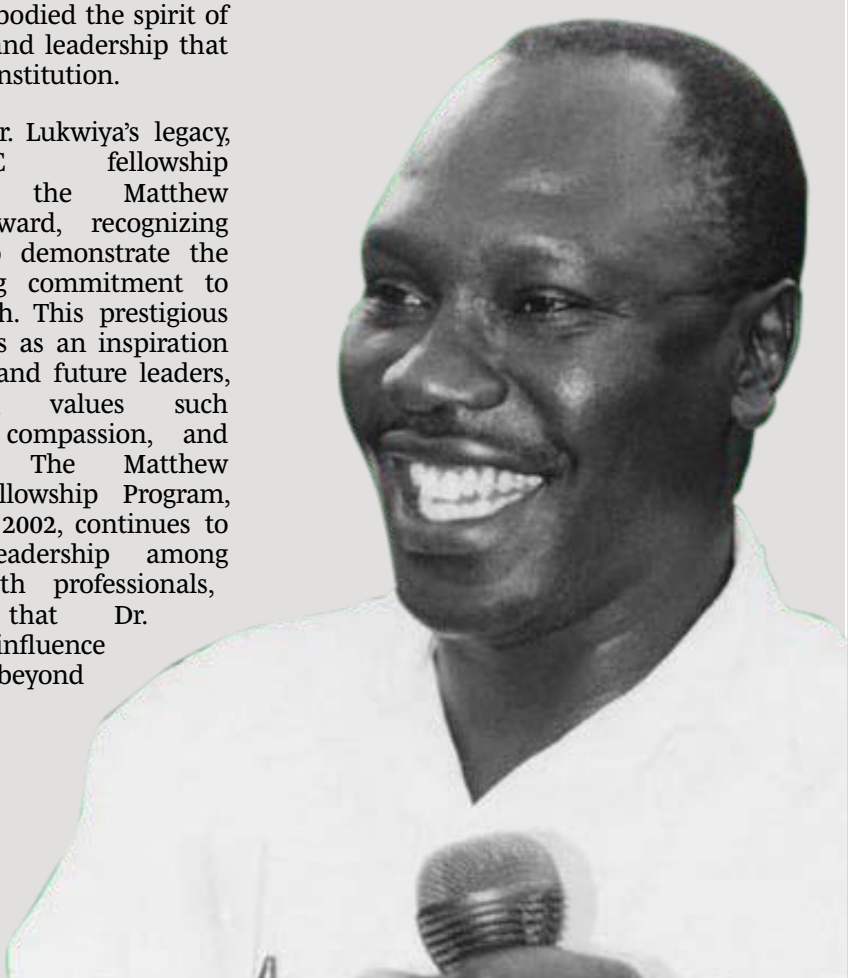
Sadly, Dr. Lukwiya's tireless dedication came at a big cost. On November 7, 2000, while treating an Ebola patient, he lost his life, leaving behind a deep legacy that continues to inspire healthcare professionals in Uganda and beyond. His sacrifice serves as a poignant reminder of the commitment required in public health intervention, particularly in the face of crises.

As MakSPH celebrates 70 years of excellence in Preventive Medicine training, we reflect on Dr. Lukwiya's enduring impact as one of our most distinguished alumni. His journey began within the walls of Makerere University, then as medical student and later at MakSPH to pursue a Master's of Public Health, our flagship program founded on a unique community concept of public health schools without walls, where he cultivated the knowledge and skills that would empower him to confront Uganda's pressing health challenges. A graduate of the Master of Public Health, Dr. Lukwiya embodied the spirit of innovation and leadership that defines our institution.

To honor Dr. Lukwiya's legacy, MakSPH-CDC fellowship established the Matthew Lukwiya Award, recognizing fellows who demonstrate the same strong commitment to public health. This prestigious award serves as an inspiration for current and future leaders, emphasizing values such as safety, compassion, and innovation. The Matthew Lukwiya Fellowship Program, initiated in 2002, continues to cultivate leadership among public health professionals, ensuring that Dr. Lukwiya's influence extends far beyond his lifetime.

Prof. Rhoda Wanyeze, MakSPH Dean notes that as we celebrate 70 Years, we should reflect we should reflect on past achievements and envision a future shaped by the lessons learned from public health professionals and leaders like Dr. Lukwiya, emphasizing that: "the challenges we face today, from emerging infectious diseases, health equity, and the impacts of climate change, demand the same courage and dedication he exemplified Dr. Lukwiya".

Professor Fred Wabwire-Mangen, who led the Institute of Public Health during Dr. Lukwiya's time at MakSPH, recalls, "Dr. Lukwiya had already completed his dissertation but was still with us when he got the call to return to Lacor." This moment captures his firm dedication to public health—a legacy of selflessness and commitment that inspires us to this day.



# In Memory and Honor of Professor John Tuhe Kakitahi's illustrious legacy

Professor John Tuhe Kakitahi's incredible life and lasting impact are remembered as we commemorate 70 years of Preventive Medicine training at Makerere University School of Public Health. Professor Kakitahi altered healthcare in Uganda and beyond through his tremendous work in public health nutrition. His legacy will be felt for years to come.

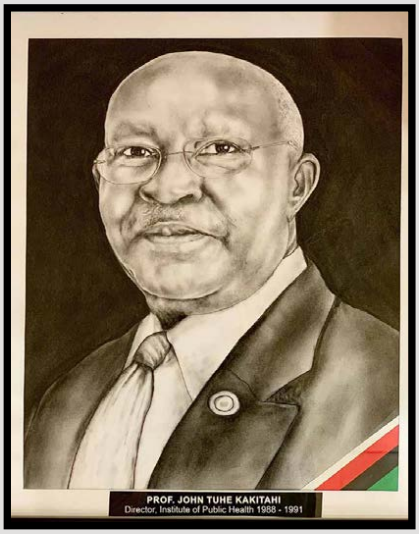
Professor Kakitahi's life has been a path of unfaltering commitment and purpose from his birth on February 16, 1940. Throughout his life, from his childhood in Uganda to his 1970 graduation from Makerere University with an MBChB, he was a frontier. He began his career as a Senior Casualty Officer at New Mulago Hospital, where he rapidly gained a deep understanding of patient care and a keen appreciation of the difficulties endured by the most vulnerable among us. A lifelong commitment to ending world hunger and improving public health has been born out of these experiences.

With the help of Rotary International, Professor Kakitahi established the groundbreaking Mwana Mugimu Nutrition Center at Mulago Hospital in the 1990s. Children with severe malnutrition, such as those with kwashiorkor, found more than simply a location to get treatment at the clinic; it became a symbol of hope for them. Mwana Mugimu exemplified Professor Kakitahi's commitment to community-driven solutions and evidence-based care, garnering recognition as the top nutritional unit in East Africa. It was a model for how to tackle public health issues, and its success prompted replication throughout Uganda.

Professor Kakitahi was highly regarded as an educator and mentor in addition to his innovative work at Mwana Mugimu. Countless health professionals were influenced by him throughout his tenures as Director of the Institute of Public Health (1988–1991) and Deputy Principal of Makerere University College of Health Sciences (afterwards). Inspiring students to go beyond classroom learning and make a difference in their communities, his lectures on public health nutrition were more than just lessons—they were calls to action.

Much beyond Uganda, Professor Kakitahi's impact was felt. In international forums, he represented the country and pushed for policies that put health fairness and nutrition first. His voice resounded around the world. The discipline was enriched and Uganda's reputation in public health was strengthened through his cooperation with esteemed peers, such as the late Professor Suleiman Jabir Farsey.

Professor Kakitahi stood out due to his exceptional empathy and dogged pursuit of solving the causes of starvation. His efforts helped debunk misconceptions and change people's views on malnutrition, demonstrating that it was a public health problem with a solution rather than an issue of superstition or fate. As a result of his guidance, many families were




able to improve their health, and whole neighbourhoods gained agency over their own destiny.

Not only are we remembering Professor John Tuhe Kakitahi for his scholarly work, but also for the humanity and compassion that shone through in his life. He personified the ideals of public health, which aim to improve people's lives by increasing their understanding, compassion, and capacity to act.

What he left behind is an inspiring example of the impact that one person can have when they commit themselves fully to helping those in need. It is examples like this, that MakSPH pledge to carry on the important work he started as we honor his achievements. Inspiring and guiding future generations, we must continue his life's work toward a healthier and more egalitarian Uganda.

# In Memorium: Professor Captain Dr. Virginio Lachara Ongom

Professor Captain Dr. Virginio Lachara Ongom was a multi-faceted public health pioneer whose work extended well beyond Uganda. As MakSPH celebrates 70 years of public health training, we reflect on Professor Ongom's life and legacy. Healthcare has been transformed and many lives have been improved as a result of his work as a doctor, army captain, brilliant researcher, and devoted advocate.

As a little boy growing up in the fishing village of Panyagoro near Pakwach, Professor Ongom witnessed firsthand the devastating effects of bilharzia (schistosomiasis) on his community. The signs of this disease, which include bloated abdomens and vomiting blood, were mistakenly thought to be caused by witchcraft for a long time. Even while it remained a mystery to most, Dr. Ongom recognized it for what it was: a critical issue in public health that required quick response.

In the 1970s, he made history as the first scientist to demonstrate bilharzia's true nature. As a result of his thorough research, he identified the disease strains that were affecting people along the Nile and in the areas surrounding Lakes Albert and Kyoga. He gave hope to families affected by intestinal bilharzia by developing novel chemical remedies at a time when no such treatments existed. His ground-breaking study laid the groundwork for the ongoing battle against neglected tropical diseases (NTDs), which he also brought to the forefront of medical attention.

Much beyond his academic work, Professor Ongom demonstrated exceptional leadership. At a time "when Kampala was on fire," at least from the words of Prof. Josephine Namboze, he played a central role in mentoring a new generation of doctors, public health specialists and nurses as the first African to lead Makerere University's Institute of Public Health. He was the Director of the Institute of Public Health (1975 – 1979).

With early works on schistosomiasis, malaria, and filariasis, the Institute of Public Health (IPH) under Prof. Ongom established a parasitology unit. Over time, this unit expanded to become the Vector Control Division of the Ministry of Health, which houses the national laboratory for several illnesses, enhancing Uganda's ability to address public health concerns.

Reflecting on Dr. Ongom's achievements, we offer gratitude to his scientific acumen as well as his immense empathy and dedication to helping disadvantaged communities. He encapsulates the essence of public health in his work, which involves both the quest of scientific knowledge and the commitment to restoring hope, dignity, and opportunities for a better life.

The public health community looks on Professor Captain Dr. Virginio Lachara Ongom's legacy for inspiration. The importance of empowering people, investing in desease surveillance and fostering resilience in the fight against disease should not be underestimated, as his work serves as a constant reminder. Along this 70th anniversary commemorative journey, we remember his profound impact and reaffirm our commitment to continuing his fight for a more equitable and peaceful world.

# Breathless Cities

## Air Pollution Stealing Away Our Health

*L-R: Assoc. Professor Lynn Atuyambe Principal Investigator, and Sam Etajak Co-Investigator for the GEOHealth-hub at MakSPH.*

Africa's rapid urbanization is driving a growing health crisis, with air pollution becoming a major contributor to non-communicable diseases and early deaths. In 2019, an estimated 1.1 million lives were lost to pollution across the continent, exceeding the combined fatalities from tobacco, alcohol, and road accidents. On a global scale, fossil fuel emissions alone were linked to 10.2 million premature deaths in 2012. It's a wake-up call—we can no longer afford to ignore this escalating crisis.

Kampala's air quality crisis is worsening, with an Air Quality Index (AQI) of 136 and fine particulate matter ($PM_{2.5}$) levels ten times above WHO limits. The $PM_{2.5}$ consists of inhalable particles that are 2.5 micrometers in diameter or smaller, which is over 100 times thinner than a human hair, usually suspended in the air for longer hours. Vehicle emissions, industrial pollution, and biomass fuel use are driving the problem, severely impacting the health of the vulnerable persons with heart and respiratory diseases, pregnant women, children and the elderly. The city faces rising healthcare costs and reduced productivity, making urgent action essential for public health.

*"As I speak to you now, air pollution is the 2nd leading risk factor for deaths and disability in the world. Uganda, like most low-income countries, is sitting on a time bomb. Air pollution is on the increase due to population pressure, urbanization, and industrialization amidst incongruent investment in mitigation strategies such as the introduction of mass transportation. This partly explains the increase in respiratory and cardiovascular diseases which have impoverished families,"* says Lynn Atuyambe, an Associate Professor at MakSPH.

Dr. Atuyambe is a lead researcher in a four-year study conducted from 2018 to 2021 that estimates that 7,257 premature deaths in Kampala were linked to exposure to $PM_{2.5}$, a pollutant associated with respiratory and cardiovascular diseases. Due to its small size, $PM_{2.5}$ can penetrate deep into the lungs, enter the bloodstream, and trigger a range of health issues. "The most concerning aspect of $PM_{2.5}$ is its ability to affect more than just the lungs. Once in the bloodstream, it can lead to cardiovascular diseases, strokes, and even impact mental health," said Dr. Emily Nyakato, a public health researcher.

The study revealed that pollution contributed to 2,777 deaths in 2018, 2,136 in 2019, 1,281 in 2020, and 1,063 in 2021. During this period, the city's $PM_{2.5}$ levels consistently exceeded the World Health Organization (WHO)'s safe limit of 5 micrograms, averaging 39 micrograms—well above the recommended threshold and posing a serious public health risk.

The WHO reports that 99% of the global population breathes polluted air, and Kampala's air quality reflects this alarming trend. The city's pollution is primarily caused by vehicle and industrial emissions, open burning of solid waste, street sweeping, construction, and household practices like cooking with biomass fuels. The burning of plastic bags and poorly maintained vehicles are major contributors to the city's high pollution levels.

*"When you go to the supermarket, we are given different polyethene bags to carry different items. When these plastics/polythenes accumulate at home, we burn them, given that formal and informal solid waste operators ask for some money to collect garbage, we decide to burn the rubbish including polythenes which emits dangerous gases that cause health problems,"* says Samuel Etajak, an Eastern Africa GEOHealth Hub member, and a researcher MakSPH's Department of Disease Control and Environmental Health.

The study reveals clear pollution patterns, with higher PM2.5 concentrations during the dry season, peaking at 9:00 a.m. and 9:00 p.m. due to increased vehicle emissions and specific weather patterns. Rainy seasons, from March to June and October to December, bring temporary relief as rainfall disperses pollutants. Saturdays consistently recorded the

highest pollution levels, averaging 41.2 micrograms daily. The study highlights the link between urbanization and air quality, especially in rapidly developing African cities. In Kampala, urban expansion has increased vehicle ownership, exacerbating emissions and worsening air quality due to heavy traffic and inadequate public transportation.

Many households rely on biomass fuels like charcoal and wood for cooking, releasing harmful pollutants into the air, which pose a significant health risk indoors as well. The study underscores that high pollution levels in Kampala could lead to serious morbidity and mortality, necessitating urgent action from policymakers and health officials.

Public health experts caution that the impact of air pollution may be underestimated due to limited data. "The current data is alarming, yet it may not even capture the full extent of the problem. As monitoring improves, we expect the health impacts to appear even greater," says Etajak, a study contributor.

The study's air quality measurements were obtained using a Beta Attenuation Mass Monitor (BAM)-1022, an advanced real-time monitoring device that tracks ambient (outdoor) $PM_{2.5}$ concentration continuously.

The BAM-1022 uses a vacuum pump to draw airborne particles through a filter tape, capturing particulates under 2.5 microns. These particles accumulate on the filter, reducing beta-ray transmission and allowing researchers to determine PM levels accurately.

Although this device provides high-quality data, Kampala's air quality monitoring infrastructure remains inadequate.Environmental analysts say more air quality monitoring stations are needed across the city to produce comprehensive data on pollution levels. "Kampala's current air quality monitoring is insufficient given the city's growing population and vehicle count. We need widespread monitoring to assess which areas are most affected and to develop targeted interventions," says Sarah Kiyingi, an environmental scientist.

As Kampala continues to develop, pollution levels are likely to increase unless aggressive measures are taken to improve air quality. "We need more robust regulations and public awareness campaigns to address the sources of air pollution. Without intervention, the health risks will only grow," warned Etajak.

The key interventions experts recommend are addressing vehicle emissions, transitioning to cleaner energy sources, enhancing public transportation infrastructure, and reducing biomass fuel usage. There is also need to invest in electric public transportation, encouraging the use of cleaner fuels, and enforcing stricter emissions regulations for vehicles.

Public health campaigns stressing the dangers of air pollution are central for rallying support for stricter air quality regulations and urgent action. *"The public must understand that air pollution is not an abstract issue. It's affecting lives every day, and the more people understand this, the more they will support the necessary changes,"* emphasizes Etajak. "Air pollution is a preventable health crisis. The time to act is now. For every year we delay, more lives are at risk."

*Vehicular emissions, a major contributor to air pollution, release harmful pollutants that threaten public health and the environment.*

# A Journey Through MUEHSA: 23 Years of Building Environmental Health Leaders

*MUEHSA Students together with KCCA during a clean up and community sensitization session in Kagugube, Kampala in April 2022.*

In 2001, visionary lecturers at Makerere University School of Public Health identified a pressing need for a unifying platform to empower students pursuing environmental health. Dr. John Isunju, Dr. Richard Mugambe, Mr. Ali Halage, Mrs. Ruth Mubeezi, and renowned environmental advocate Dr. Katwere Ssemwanga spearheaded the creation of the Makerere University Environmental Health Students Association (MUEHSA). This initiative sought to establish an identity for environmental health students, focusing on advocacy, visibility, and addressing sector-specific challenges within the College of Health Sciences.

Over the past 23 years, MUEHSA has evolved into a dynamic force, fostering unity among students and creating a community that nurtures professional growth and lifelong connections. Its leadership legacy is reflected in the achievements of its alumni, many of whom have significantly impacted the global environmental health landscape. For instance, Dr. David Musoke, President-Elect of the International Federation of Environmental Health (IFEH), exemplifies the association's success in cultivating innovation and excellence.

## Impactful Activities and Opportunities

MUEHSA equips its members with critical skills through transformative initiatives like grant writing, conference organization, and advocacy campaigns. These experiences prepare students to tackle real-world challenges confidently. Alumni often cite their time in MUEHSA as pivotal, as it provided them with the foundation to lead impactful public health initiatives.

The association's advocacy efforts, such as the MUEHSA Voices campaigns, address crucial issues like antimicrobial resistance (AMR), non-communicable diseases (NCDs), and water, sanitation, and hygiene (WASH). By collaborating with stakeholders and leveraging media, MUEHSA amplifies its messages to drive meaningful change.

## Global Reach and Recognition

MUEHSA's influence extends beyond Uganda, thanks to partnerships with institutions like Nottingham Trent University and participation in international conferences. These engagements have elevated the association's profile and provided members with opportunities to represent Makerere University on a global stage.

Recent achievements highlight

the association's excellence. Ms. Ahumuza Bridget's third-place win at the IFEH Africa Region Outstanding Student Awards and the Best AMR Video Content of the Year award in the 2024 National AMR Social Media Contest underscore MUEHSA's commitment to nurturing leadership and innovation.

## Partnerships and Collaboration

Collaboration has been central to MUEHSA's journey. Partnerships with organizations like UNICEF, WHO, KCCA, and NCOSHA have provided mentorship, resources, and platforms for students to excel. These collaborations strengthen the association's role in bridging gaps within the environmental health sector.

## Growth and Innovation

Innovation defines MUEHSA's legacy. The rebranding initiative, symbolized by a modern logo, reflects its forward-thinking approach. Its annual scientific conferences, now in their 20th year, have set benchmarks for excellence, with the 19th Annual Conference being a standout for branding and professionalism.

Looking ahead, MUEHSA plans to expand its initiatives, including a SACCO for financial support, enhanced grant-writing workshops, and an inclusive *MUEHSA Voices campaign*. These efforts aim to engage more students and solidify MUEHSA's leadership in environmental health innovation.

## Looking Forward

As Makerere School of Public Health marks 70 years of excellence, MUEHSA celebrates its legacy while setting its sights on greater achievements. The 20th Annual MUEHSA Conference will be a defining moment, showcasing the association's dedication to advancing environmental health.

MUEHSA's story is one of resilience and unwavering commitment to empowering students and shaping leaders. Its journey continues, inspiring change and making a difference for generations to come.

***"For Health, Prevention is my priority."***

***Nichodemus AGUMENAWE***
***Chairman, 2024/5***
***Makerere University Environmental Health Students Association (MUEHSA) - x.com/home***


*Group Photo of 19th Annual MUEHSA Scientific Conference, 2024.*

# Academics

# Graduate Training

# Supporting Makerere's Vision as a Research-Led University




*Professors Elizeus Rutebemberwa, David Guwatudde, Dr. Justine Bukenya and the Minister of Health, Dr. Jane Ruth Aceng*

For 70 years, Makerere University School of Public Health (MakSPH) has positioned itself as a leader in public health education, training leaders who confront public health crises head-on. From its classrooms to the communities, the School has shaped a robust workforce committed to transforming lives.

Reflecting on this remarkable journey, Dr. Elizeus Rutebemberwa, a professor and Deputy Dean in charge of higher degrees, aptly captures MakSPH's enduring legacy as a driver of change in Uganda's health landscape. "Graduate training was the first form of education at the School of Public Health, even when it was just an institute," he said, emphasizing the School's long-standing commitment to public health education since the 1950s. This includes programs like diplomas and the Master of Medicine in Public Health, which continue to meet the growing need for expertise in the field.

He notes that the launch of the Master of Public Health (MPH) program in 1994 marked a turning point for the School. Designed to bridge gaps in public health leadership, the MPH quickly rose to prominence as the School's flagship program and a top choice for aspiring public health professionals. *"The MPH has remained highly revered, and its demand has not waned over the years,"* says Rutebemberwa. "We accept less than half of the applicants for the full-time program due to its popularity and relevance."

The impact of the MPH program is evident across Uganda's healthcare system. Its graduates hold influential roles, including District Health Officers and health inspectors, driving change at both policy and operational levels. Dr. Jane Ruth Aceng, Uganda's Minister of Health, credits her MPH training for equipping her with the knowledge and skills to make informed policy decisions that shape the nation's health landscape.

*"I draw a lot of strength, knowledge and skills from the School of Public Health and I am proud to say that the School has made me what I am today and most of what I do is generated from the wisdom I acquired from the School of Public Health,"* says Dr. Acheng

The program's emphasis on health promotion, disease prevention, and healthcare management ensures that its graduates are well-equipped to address challenges at all levels, from community health initiatives to national policy-making. *"The MPH is not just a program; it is a cornerstone of Uganda's health system,"* Dr. Rutebemberwa said.

He explains that the success of the MPH program paved the way for the expansion of graduate offerings at MakSPH. Today, the School offers nine specialized programs, including the recent one, the Master of Environmental and Occupational Health (MEOH). This program tackles critical issues such as industrial pollution

**With only 80 researchers per million in Africa—well below the global average of 1,081—the continent urgently needs highly trained experts. By 2050, Africa will require an estimated 12,500 epidemiologists to ensure global health security.**

and workplace safety, reflecting the School's responsiveness to emerging societal needs.

"New programs are developed to address gaps that the MPH cannot fill," explains Dr. Rutebemberwa. *"We engage stakeholders such as the Ministry of Health and NGOs to ensure these programs are relevant and impactful."*

The introduction of programs like health economics and monitoring and evaluation further underscores the School's adaptability to the evolving demands of public health. *"Society's needs evolve, and so must our programs,"* says Dr. Rutebemberwa. While the MPH provides a broad foundation, specialized programs offer targeted expertise in areas such as biostatistics and data management, the skill sets that are increasingly in demand.

A key milestone in MakSPH's journey is the growth of its PhD training, aligning with Makerere University's 2030 vision of becoming a research-led institution. This supports the Africa CDC's 2022 New Public Health Order, which calls for strengthening public health institutions and expanding the workforce. With only 80 researchers per million in Africa—well below the global average of 1,081—the continent urgently needs highly trained experts. By 2050, Africa will require an estimated 12,500 epidemiologists to ensure global health security.

While many African universities offer medical and MPH programs, there is a critical need for more doctoral and postdoctoral training to develop faculty and leaders in research and practice. This need was underscored by the COVID-19 pandemic, which highlighted the urgency of expanding Africa's public health workforce. MakSPH is addressing these gaps with a strong commitment to graduate education and capacity building.

Professor David Guwatudde and Dr. Justine Bukenya, all MakSPH faculty through their involvement in the ARISE Network, co-authored a 2024 Lancet Health Policy paper, offering six key recommendations to strengthen public health doctoral training in Africa. These proposals aim to drive collaboration, improving research and practice across the continent. Their findings highlight a critical need for increased investment and equitable partnerships to transform higher education and enhance public health training to meet Africa's evolving challenges.

The study, conducted from August 2021 to October 2022 among higher education institutions in 54 countries, identified gaps in current public health training programs, such as limited focus on diversity, health behavior change communication, and the rising challenges of non-communicable diseases and climate change. These findings emphasize the urgent need for doctoral programs to evolve and better address Africa's shifting health priorities.

*"When I joined the School 20 years ago, there were only a handful of PhD holders. Today, 80% of the faculty have PhDs, and those who don't are pursuing them,"* Dr. Rutebemberwa says.

The School has not only enhanced its staff's qualifications but is also nurturing a growing number of PhD students. To support these students, it has established critical infrastructure, such as the PhD Forum, created over a decade ago. This forum has become a cornerstone of the School's efforts, fostering collaboration, peer review, and knowledge exchange. *"The forum ensures that PhD students have a space to present their work and receive constructive feedback,"* says Dr. Rutebemberwa.

Professor Guwatudde shares agrees that the PhD forum at the School has become a central resource for students. *"It not only makes our work easier but also provides very good input. It has evolved into an essential peer learning platform, and I want to thank the forum and its leadership for their contributions to the training of our PhD students."*

Despite challenges like limited staff capacity and funding, the School has introduced structured PhD programs to streamline training and boost output. Looking ahead, the School is focused on emerging areas such as digital health, climate change, and public health surveillance. *"The world is changing rapidly, and we must engage in these spaces to remain relevant,"* says Dr. Rutebemberwa.

*A PhD student presents his results during the 2024 MakSPH PhD Colloquium on Thursday, October 10, 2024, at Kololo MakSPH RAN Complex*

# Bachelor of Environmental Health Sciences (BEHS) Programme Brief

"My academic journey at Makerere University School of Public Health has been transformative. I've fallen in love with the programme, thanks to the warm and welcoming community, convenient facilities, abundant opportunities, and exceptional mentorship. The countless seminars and the efficiency of the lecturers make it more than just a course, it's a mission to prevent disease by ensuring all factors affecting human health work in our favour. I highly recommend this program to anyone seeking to create a meaningful impact on a global scale!"

**Ms. Kainomugisha Denise, Year one, Bachelor's in Environmental Health Science.**

The **Bachelor of Environmental Health Sciences** (**BEHS**) at Makerere University School of Public Health (MakSPH) is the School's flagship undergraduate programme and its sole bachelor's degree offering. Offered by the Department of Disease Control and Environmental Health, this programme has been a critical contributor to environmental and public health education in Uganda and the region.

## Program Mission

To train competent graduates capable of addressing environmental health challenges through promotion, prevention, research, and policy. The program takes a holistic approach to tackling biological, chemical, physical, and socio-economic determinants of health.

## Relevance and Market Need

Environmental health is integral to sustainable public health outcomes, particularly in Uganda, where challenges like poor sanitation, pollution, food safety, and occupational hazards persist. Graduates of this programme are highly sought after in government, non-governmental organizations, and the private sector to design and implement solutions for healthier communities and safer workplaces.

## Key Skills Acquired

Graduates acquire skills in:

- Environmental risk assessment and mitigation.
- Disease prevention and control.
- Research, monitoring, and evaluation of public health interventions.
- Policy enforcement and health regulation.
- Multidisciplinary collaboration using a One Health approach.

## Programme Content

The curriculum covers key areas such as environmental pollution, occupational health, food safety, epidemiology, and public health emergencies. Practical fieldwork, research projects, and problem-based learning ensure graduates are prepared for real-world challenges.

## Duration

The BEHS program is a three-year, full-time degree, with two semesters per year, combining rigorous academic learning with extensive fieldwork.

## Employment Prospects

BEHS alumni work in local government, NGOs, academia, and the private sector. Their roles include health inspection, environmental impact assessment, research, and public health policy development. The programme is ideal for students seeking to lead in environmental and public health innovation, making impactful contributions to communities and workplaces.

# Master of Public Health Monitoring and Evaluation (MPME) Programme Brief

The Master of Public Health Monitoring and Evaluation (MPME) at Makerere University School of Public Health (MakSPH) is an innovative graduate programme designed to build a critical mass of skilled professionals in Monitoring and Evaluation (M&E) for public health and development sectors. Hosted at the Department of Health Policy Planning and Management, this programme addresses key capacity gaps in Uganda and beyond.

## Program Mission

To contribute to effective, efficient, and sustainable M&E systems in health and development by training professionals equipped to design, implement, and manage M&E frameworks that inform policy and programmatic decisions.

## Relevance and Market Need

With the growing demand for accountability and results-based management, M&E is essential in ensuring the success of public health interventions. This programme equips graduates with the ability to evaluate policies, programmes, and projects, making them highly sought after by government, NGOs, and private sector organizations.

## Key Skills Acquired

- Designing and implementing M&E systems.
- Conducting policy, programme, and impact evaluations.
- Applying evidence-based approaches to decision-making.
- Developing and managing health systems information tools.
- Leadership and strategic management for public health initiatives.

## Program Content

The curriculum covers core areas such as public health, epidemiology, biostatistics, M&E systems, programme design, and economic evaluations. Field placements and a dissertation provide practical experience to complement classroom learning.

## Duration and Format

The programme spans two calendar years, divided into four semesters and a recess term. A blended learning model combines in-person, online, and practical sessions, culminating in a thesis.

## Career Prospects

Graduates excel in roles like M&E officers, project coordinators, and policy advisors in public health and development sectors. They also contribute to academia and research institutions. Join to advance your expertise in M&E and drive impactful change in public health systems.

"The Master of Public Health Monitoring and Evaluation (MPHME) programme at MakSPH has provided me with robust training in public health M&E, significantly enhancing my professional experience. A highlight of my journey has been presenting my Master's research thesis at esteemed platforms like the 8th AFENET Scientific Conference and the World Congress of Epidemiology 2024, a testament to the programme's emphasis on excellence and practical engagement."

**Isabella Kisa Wanadi, MPHME Class of 2024.**

# Master of Public Health Distance Education (MPHM) Programme Brief

The Master of Public Health Distance Education (MPHM) programme at Makerere University School of Public Health (MakSPH) is a trailblazing initiative designed to develop skilled public health professionals who can address global and local health challenges. Situated in the Department of Epidemiology and Biostatistics, the programme has been operational since 1994 and provides a flexible, technology-mediated learning model that accommodates working professionals.

## Mission

To produce highly skilled public health practitioners equipped to lead, manage, and innovate within health systems through research, policy, and practice, while promoting equitable and sustainable health solutions.

## Relevance and Market Demand

The MPHM programme addresses the critical shortage of public health professionals by training individuals to respond to Uganda's public health needs, including emerging health threats, disease prevention, and health promotion. Graduates are well-prepared to take on leadership roles in government, NGOs, international organizations, and academia.

## Key Skills Acquired

- Competence in applied epidemiology, biostatistics, and health systems management.
- Proficiency in research methods, disease surveillance, and health programme evaluation.
- Skills in managing public health emergencies and addressing environmental and occupational health issues.
- Leadership, communication, and policy formulation for effective health systems governance.

## Programme Content

The curriculum includes core courses such as Applied Epidemiology, Biostatistics, Health Economics, and Disease Control. Electives provide specialized training in areas like maternal and child health, monitoring and evaluation, and health governance. Practical fieldwork and a dissertation reinforce academic learning with real-world application.

## Programme Duration and Format

The programme spans three academic years, with a blend of online, asynchronous learning through the Makerere University e-Learning Environment (MUELE) and periodic face-to-face sessions. This flexibility enables students to remain at their workplaces while studying.

## Career Prospects

MPHM graduates excel as district health officers, programme managers, epidemiologists, and research scientists. They lead in designing and implementing public health interventions and contribute to global health security efforts. Join the MPHM programme to shape a healthier future through impactful public health leadership and practice.

"The program has broadened my understanding of health through a multidimensional approach, emphasizing One Health and multisectoral strategies. Contributing to Uganda's Health National Adaptation Plan showcased MakSPH's practical, impactful focus. With experienced lecturers and hands-on learning, it's a rewarding program I highly recommend."

**Nakuya Niona Kasekende, Year 3 Master of Public Health – Distance Education.**

# Master of Public Health (MPHF) Programme Brief

The **Master of Public Health** (**MPHF**) at Makerere University School of Public Health (MakSPH) is a renowned postgraduate programme that has shaped public health leadership in Uganda and beyond since its inception in 1994. Known as the Uganda Public Health Schools without Walls (PHSWOW), the competency-based programme equips students to tackle public health challenges at national, district, and community levels, contributing to Uganda's decentralization policy.

## Programme Mission

To produce proficient public health practitioners who are lifelong learners, equipped to lead, manage, and innovate in diverse settings while addressing current and emerging health challenges globally.

## Relevance and Market Need

The MPH programme addresses critical health challenges, including infectious diseases like Ebola and COVID-19, the rise in non-communicable diseases, maternal and child health issues, and the impacts of climate change. It prepares graduates to contribute to universal health coverage, global health security, and sustainable health systems.

## Key Skills Acquired

Students gain expertise in:

- Public health research and outbreak investigation.
- Leadership, management, and policy formulation.
- Multidisciplinary collaboration within health systems.
- Epidemiology, biostatistics, and environmental health.
- Communication and advocacy for health interventions.

## Programme Content

The curriculum includes epidemiology, biostatistics, environmental and occupational health, mental health, reproductive health, leadership, and global health systems. It integrates field attachments and research projects to prepare graduates for practical challenges.

## Duration

The MPH is a two-year full-time programme, blending academic rigor with field-based learning.

## Employment Prospects

MPH graduates hold key positions in academia, the Ministry of Health, district health teams, NGOs, and global health organizations. With 67% of Uganda's District Health Teams having at least one MPH graduate, the programme is vital for developing leaders in public health innovation and management. This programme is ideal for individuals passionate about transforming health systems and improving population health outcomes locally and globally.

"I'm Kwajja Stephen, a first-year MPH student at MakSPH. The program has sharpened my critical thinking and equipped me with practical public health skills. With supportive faculty and a research-driven curriculum, it delivers impactful learning and real-world relevance—highly recommended for aspiring public health professionals."

**Kwajja Stephen, Year 1 Master of Public Health.**

The Master of Public Health program at MakSPH equipped me with advanced research skills, critical thinking, and a profound understanding of public health issues. The experienced faculty and hands-on training significantly contributed to my academic and professional growth. MakSPH's emphasis on real-world application, innovation, and collaboration creates a transformative learning environment. I highly recommend this programme for its unparalleled ability to prepare students for impactful careers in public health, empowering them to address complex health challenges both locally and globally."

**Bridget Nagawa Tamale, MPH Graduate, Class of 2025.**

# Master of Environmental and Occupational Health (MEOH) Programme Brief

The Master of Environmental and Occupational Health (MEOH) programme at Makerere University School of Public Health equips graduates with the expertise to address contemporary environmental and occupational health challenges. Grounded in the principles of public health and the Sustainable Development Goals (SDGs), this programme prepares students to play pivotal roles in protecting health and preventing disease caused by environmental and occupational hazards.

## Programme Relevance

Uganda and other low-income countries face escalating challenges such as pollution, urbanization, and workplace hazards that significantly affect health. The MEOH programme is designed to build a critical mass of skilled professionals capable of addressing these challenges through strategic interventions, policy development, and innovative solutions.

## Skills and Competencies

Graduates acquire robust knowledge and practical skills, including:

- Identifying and managing environmental and occupational health risks.
- Conducting research and assessments in environmental monitoring and toxicology.
- Designing and implementing health-promoting urban infrastructure.
- Applying Geographical Information Systems (GIS) and laboratory analyses to public health problems.
- Supervising solid waste, water, and occupational safety systems.

## Programme Structure and Duration

The two-year full-time programme is a blend of coursework, fieldwork, and research, comprising 62 credit units. Core subjects include Environmental Toxicology, Food Safety, Occupational Hygiene, Applied Epidemiology, and Urban Infrastructure Planning. Students also complete a dissertation and field internship to enhance practical skills.

## Career Opportunities

Graduates are well-positioned for leadership roles in government agencies, such as the Ministry of Health and the Ministry of Water and Environment, NGOs, research institutions, and private consulting firms. The programme also prepares professionals to address emerging issues like climate change, renewable energy, and urbanization in alignment with Uganda's Vision 2040.

## Mission and Delivery

Through a blended learning approach combining classroom instruction, online platforms, and practical fieldwork, the MEOH programme fosters innovation, research excellence, and practical application to meet national and global health goals.

"Studying for my Master's in Environmental and Occupational Health at MakSPH has significantly impacted my academic journey. MAKSPH cultivates a spirit of excellence, encouraging you to strive for the highest standards in your work. I would recommend this program for its emphasis on disease prevention, its relevance across all fields, and the numerous opportunities available after graduation."

**Divine Katiiti, MEOH, Year one.**

# Master of Public Health Nutrition (MPHN) Programme Brief

The Master of Public Health Nutrition (MPHN) programme at Makerere University School of Public Health (MakSPH), offered by the Department of Community Health and Behavioural Sciences, addresses the urgent need for skilled public health nutritionists in Uganda and beyond. With malnutrition remaining a significant public health challenge, this programme equips students with the expertise to tackle diverse nutritional issues through research, policy development, and practical interventions.

## Programme Relevance and Mission

The MPHN programme emphasizes the pivotal role of nutrition in achieving Sustainable Development Goals (SDGs), particularly ending malnutrition in all its forms by 2030. It responds to the growing burden of undernutrition and nutrition-related chronic diseases such as diabetes and hypertension. By developing professionals with advanced knowledge and skills, the programme contributes to national and global health and development agendas.

## Content and Skills Acquired

Students gain competencies in key areas, including nutritional status assessment, food security, maternal and child nutrition, nutrition in emergencies, and policy and programme management. The curriculum combines coursework with practical field experiences, allowing students to address real-world challenges in diverse settings. Advanced training in research methods and health promotion equips graduates to lead impactful nutrition initiatives.

## Target Audience and Career Opportunities

Designed for graduates with a background in nutrition, health sciences, or related fields, the two-year full-time programme offers a pathway to careers in academia, government, NGOs, and the private sector. Graduates are well-suited for roles in ministries of health, agriculture, and education; research institutions; international organizations like UNICEF and WHO; and community-based nutrition programmes.

## Programme Design

The MPHN integrates academic rigour with practical application. It involves four semesters and a recess term, combining lectures, seminars, fieldwork, and a dissertation. This structure ensures graduates are prepared to address nutrition challenges effectively and sustainably. The MPHN programme not only develops professionals ready to tackle today's nutrition challenges but also empowers them to shape a healthier, more resilient future.

"The MPHN programme greatly expanded my knowledge in research, management, and public health. It provided invaluable skills that have been critical in my duties at tactical, operational, and strategic levels, both nationally and internationally. It was more than worth it, and I am forever grateful to the lecturers and facilitators who nurtured us during my time at the School."

**Capt. Ibrahim Senoga, Military Nutrition and Feeding Officer, UPDF.**

"The Master of Public Health Nutrition student offers a rigorous and diverse academic environment, with a modular and multidisciplinary curriculum that creates a truly enriching learning experience. The supportive facilities and vibrant campus culture make this an ideal foundation for aspiring public health professionals. I wholeheartedly encourage anyone considering this program to take the step and join."

**Joyce Bahati Uwineza. MPHN, Year one**

# Master of Public Health Disaster Management (MDM) Programme Brief

The Master of Public Health Disaster Management (MDM) programme, offered by Makerere University School of Public Health (MakSPH), through the Department of Community Health and Behavioural Sciences, is a specialized graduate degree designed to equip professionals with the skills and knowledge needed to address the growing challenges of public health disasters in Uganda, the Great Lakes region, and beyond.

## Programme Relevance and Mission

This programme aims to develop competent public health disaster managers capable of forecasting risks, implementing effective response interventions, and conducting impactful research. It aligns with global and national priorities, including the Sendai Framework for Disaster Risk Reduction and Uganda's disaster preparedness strategies. Graduates are empowered to lead in public health disaster response at the district, national, and international levels.

## Content and Skills Acquired

The MDM programme offers a comprehensive curriculum covering:

- Disaster preparedness and risk reduction.
- Public health systems in emergencies.
- Environmental and mental health in disaster settings.
- Monitoring and evaluation, logistics management, and post-disaster recovery.
- Research methods and evidence-based decision-making.

Students gain critical competencies in policy analysis, programme implementation, leadership, and applied research. Practical components such as fieldwork and community-based projects provide hands-on experience.

## Duration and Delivery

The programme spans two academic years, including four semesters and a recess term. It is delivered through a blended approach, combining lectures, seminars, fieldwork, and online learning.

## Employment Opportunities

Graduates of the MDM programme are well-positioned for careers in governmental ministries, UN agencies, NGOs, academic institutions, and research organizations. Their expertise is invaluable for roles in disaster management, health systems strengthening, and emergency response coordination. Join the MDM programme to become a leader in disaster management and contribute to building resilient health systems in Uganda and the region.

"My time at MakSPH has been defined by rigorous academic training, practical experiences, and a supportive community. These elements have significantly enhanced my professional growth in research and disaster preparedness."

**Resty Nakayima, Master of Public Health Disaster Management (MPHDM), 2024.**

"The MDM programme has significantly deepened my knowledge of disaster management, building on my background in Environmental Health Science. The program offers expert-led courses, field attachments with leading humanitarian organizations, and robust research support, equipping me to make meaningful contributions to public health and disaster resilience. I highly recommend it."

**Juma Said Tusubila, Master of Public Health Disaster Management (MDM) Finalist**

# Master of Biostatistics (MBIO) Programme Brief

The Master of Biostatistics (MBIO) programme, offered by Makerere University School of Public Health (MakSPH), through the Department of Epidemiology and Biostatistics and the Department of Community Health and Behavioural Sciences, is a specialized graduate degree designed to address the increasing demand for skilled health data analysts in Uganda and across the region. With the growing reliance on evidence-based decision-making in health and development, this programme fills a critical gap in advanced statistical training for public health, clinical research, and health systems strengthening.

## Programme Relevance and Mission

The MBIO programme aims to develop practically oriented biostatisticians capable of addressing complex health challenges through advanced data analysis and interpretation. It aligns with global priorities such as the Sustainable Development Goals (SDGs) and Uganda's health sector strategic plans, equipping graduates to lead in research, policy development, and programme evaluation.

## Content and Skills Acquired

The MBIO curriculum offers a comprehensive foundation in biostatistics, covering:

- Statistical Theory and Methods.
- Applied Epidemiology and Data Analytics using Machine Learning.
- Longitudinal and Survival Data Analysis.
- Advanced Modeling and Causal Inference.
- Research Methods and Scientific Writing.

Students gain critical competencies in designing health studies, managing and analyzing complex datasets, and producing evidence for decision-making. Practical components, including fieldwork, dissertations, and the use of cutting-edge statistical software, ensure hands-on experience.

## Duration and Delivery

The programme spans two academic years, comprising four semesters and a recess term. Delivery is through a blended approach, including lectures, practical sessions, and independent projects.

## Employment Opportunities

Graduates of the MBIO programme are well-equipped for roles in academic and research institutions, government ministries, international organizations, and NGOs. Their expertise is highly sought after for health research, programme monitoring and evaluation, and policy advisory positions. Join the MBIO programme at Makerere University School of Public Health to gain advanced skills in biostatistics and contribute to transforming health systems.

"The Master of Biostatistics programme at MakSPH significantly enhanced my ability to analyze and apply statistical methods to health, social, and economic data. The course facilitators were highly knowledgeable and dedicated, making the training impactful. Beyond technical expertise, the program sharpened my soft skills, particularly time management and public speaking. Strict assignment deadlines instilled discipline, while seminar series improved my presentation, organizational skills, and subject mastery. Today, I confidently provide data consulting services with enhanced skills and better professional opportunities.

**Ayena Nixson, Master of Biostatistics (MBIO), Class of 2024.**

# Master of Health Informatics (MHIN) Programme Brief

The Master of Health Informatics (MHIN) programme at Makerere University School of Public Health offered under the Department of Epidemiology and Biostatistics is designed to address the growing need for health professionals skilled in managing and analyzing health data using informatics tools. As health systems increasingly rely on data-driven solutions to improve service delivery, this programme equips students with the expertise to bridge technology and public health for impactful outcomes.

## Programme Relevance and Mission

The MHIN programme develops professionals capable of harnessing informatics to enhance healthcare delivery, address disparities, and contribute to evidence-based decision-making. It aligns with global trends in digital health, including artificial intelligence, telemedicine, and big data analytics, while addressing Uganda's specific health challenges.

## Content and Skills Acquired

The curriculum offers a comprehensive foundation in health informatics, covering:

- Fundamentals of Health Informatics.
- Health Information Systems and Standards.
- Clinical Decision Support Systems.
- Applied Programming and Biostatistics.
- Research Methods in Health Informatics.

Graduates will gain critical competencies in designing health information systems, data visualization, and applying analytical tools to solve health challenges. They will also acquire leadership skills to implement innovative solutions in diverse healthcare settings.

## Duration and Delivery

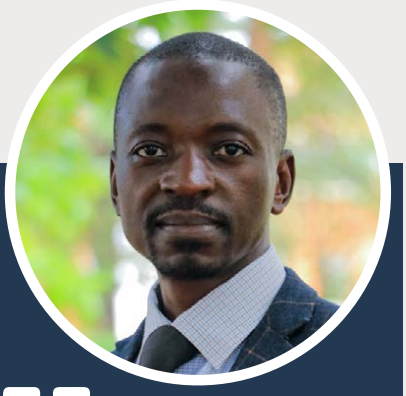
This two-year programme is delivered through a blended learning approach, combining face-to-face sessions, self-directed learning, and practical field placements. Students engage in hands-on projects to apply their knowledge to real-world health informatics problems.

## Employment Opportunities

MHIN graduates are well-prepared for roles in health ministries, international organizations, research institutions, and private-sector health technology firms. Their skills in data-driven decision-making, system development, and health analytics are highly sought after in modern health systems. Join the MHIN programme at Makerere University School of Public Health to become a leader in health informatics and contribute to transforming healthcare delivery as the School celebrates 70 years of excellence in training, research, and community service.

"Studying at MakSPH has enhanced my technical and analytical skills, allowing me to integrate technology into health solutions effectively. The supportive faculty and diverse research opportunities have been invaluable. I highly recommend this program to anyone passionate about driving impactful health innovations and data-driven decision-making."

**Gift Nebyeye, Master's Student in Health Informatics (Year 2).**



"I wish I joined earlier! Coming from a medical background, I initially carried a misconception about SPH, but discovering a course suited to my interests changed everything. The experience has been friendly, informative, and a true eye-opener to global research opportunities."

**Robert M. Mwesigwa, Master's in Health Informatics (MHI), Class of 2024.**

# PhD in Public Health (PDPH) Programme Brief

The Doctor of Philosophy (PhD) in Public Health at Makerere University School of Public Health (MakSPH) is a premier doctoral program designed to advance leadership, research, and policy expertise in public health. This intensive three-year program blends rigorous coursework with impactful research, making it an ideal pathway for professionals aiming to shape the future of health systems, policy, and practice in Uganda and beyond.

## Program Mission

To develop transformative public health leaders equipped with advanced research, policy analysis, and strategic leadership skills to address complex global and local health challenges.

## Tracks Offered

1) Health Systems
2) Epidemiology and Biostatistics
3) Community Health and Behavioural Sciences
4) Disease Control and Environmental Health

## Key Skills Acquired

- Strategic leadership and governance in public health.
- Advanced quantitative and qualitative research methodologies.
- Expertise in health systems evaluation and policy development.
- Critical problem-solving in disease control and behavioural health.

## Program Content

Year one comprises foundational courses such as Epidemiology, Biostatistics, Leadership in Public Health, and Social Determinants of Health. Students also choose a specialized track for in-depth study. Years two and three focus on research, thesis development, and publications, with a requirement of at least two peer-reviewed articles.

## Duration and Mode

The PDPH is a full-time, three-year program delivered through blended learning, including physical and virtual sessions, complemented by practical fieldwork and mentorship.

## Employment Prospects

Graduates are highly sought after in academia, health systems leadership, international organisations, and policy advisory roles. Their expertise in evidence-based decision-making and program design makes them valuable assets to the global health workforce. This program embodies MakSPH's commitment to nurturing scholars who will lead innovations and drive sustainable health improvements across Africa and the world.

"My time at MakSPH ignited a passion for public health research. The robust training and mentorship I received shaped my career and paved the way for me to become a PhD fellow. The collaborative learning environment and hands-on experiences were exceptional. I highly recommend MakSPH for its commitment to excellence and impactful, community-focused programmes."

**Muhumuza Nicholas, BEHS-2018, MPH-2023.**

# SUCCESS STORY

# The Ugandan FETP Program

Since its inception in 1994, the Ugandan Field Epidemiology Training Program (FETP) has transformed public health training, marking 30 years of impact. Initially launched as a two-year full-time Master of Public Health (MPH) program, the FETP has grown significantly, admitting 30 cohorts, with 28 already graduated and two still in training.

The program's enrolment has expanded remarkably from 10–12 residents in its early years to 40–50 residents annually today, producing over 500 skilled graduates. These alumni are making a difference worldwide, showcasing the program's success and amplifying its legacy.

On the occasion of the 70 years of MakSPH, we extend heartfelt gratitude to our partners—African Field Epidemiology Network (AFENET), Uganda's Ministry of Health, Makerere University, and district authorities—whose steadfast support has been instrumental in this journey.

## Achievements this year 2024

### Revisions to the MPH curriculum

- Revision of the Masters of Public health curriculum, which has now included more practical hours for Disease control and public health surveillance which were merged to make the course more comprehensive and more practical hours were added onto it.
- More practical hours were also allocated for Public Health, its Determinants and Health Promotion, Applied Biostatistics and Applied Epidemiology and many other courses. Group based and Individual field-based studies for recess term have also been incorporated, these revisions will further improve the learning experiences of the residents.

### Outbreak Investigations

This year, we have had 21 out of 38 residents (Cohort 2022) and 3 alumni engaged in outbreak investigations and 13 out of the 21 residents participated at least twice or more times.

Below are the disease outbreaks and surveillance activities, they participated in;

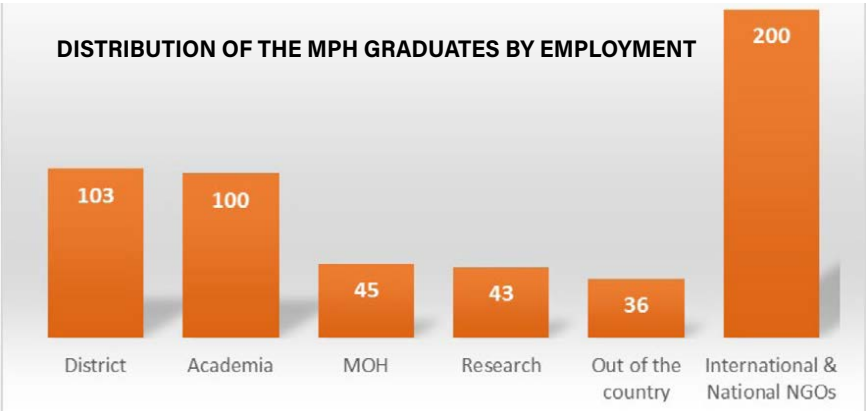
1) Active Surveillance during MPOX outbreak in Kasese district, Uganda from 12th July to 25th July, 2024.
2) Measles outbreak investigation in Moroto district, North Eastern Uganda from June 18th to July 06th, 2024.
3) Cholera outbreak investigation and response at Kasensero landing site, Kyotera district, Uganda from 26th April to 11th May 2024.
4) Yellow fever outbreak investigation in Ngora district, Eastern Uganda
5) Yellow fever epidemiological investigation and surveillance in Bundibugyo district, Western Uganda.
6) Anthrax outbreak response in Kween district, Uganda from 26th June to 01st July 2024.
7) Syndromic surveillance during the 2024 Martyrs' Day celebrations in Namugongo from 30th May to 05th June 2024.

### Dissemination Plans

FETP residents recently shared their outbreak investigation findings in a seminar attended by other cohorts and district officials, fostering a rich learning experience. The session allowed residents who hadn't participated in the investigations to ask questions and deepen their understanding. The findings will be documented for publication and presented at national and international conferences, ensuring broader impact and visibility.

### The Impact of the FETP Program on employment.

The majority of the graduates are employed in academia, Ministry of Health, District Local Government, National, Regional and International Health Development Partners in Uganda.




We have a number of Epidemiologists working all over the globe and following is a selection of Alumni that are contributing greatly in the field of epidemiology locally and internationally.

# Impact of the MPH program on Alumni

**Joseph Magoola, Epidemiologist**

Prior to the MPH program, I worked as a field officer with a rural NGO, focusing on community health education and disease prevention of malaria and HIV.

Joining the Field Epidemiology Training Program (FETP) significantly built my expertise in disease surveillance, outbreak response, health systems strengthening, project management, and community engagement.

As a field epidemiologist with AFENET, my key contribution has been supporting surveillance efforts during major health crises in Uganda, including the Ebola outbreaks in Kasese (2019) and Kassanda (2022), and the COVID-19 outbreak in Kampala (2020). My major roles were to conduct and supervise contact tracing, and training and supervising village health teams to conduct event-based surveillance in communities.

I have also coordinated projects in Hoima, Masaka, Bukomansimbi, and Nakasongola districts to improve routine immunization services following COVID19 disruptions. The projects trained over 1,800 VHTs to review health facility data, and trace children who defaulted on immunization. This resulted in over 20,000 children being followed up, with 40% being vaccinated after follow-up by the VHTs.

I continue to provide technical support to immunization programs in Uganda, Namibia, Ghana, Malawi, and Nigeria, working towards sustainable public health solutions.

Also see link to video footage supporting Measles Outbreak Response in Arua district, Uganda, in February 2024.

https://www.youtube.com/watch?v=jaLsEEWDwhk

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**Benon Kwesiga, Senior Epidemiologist**

Dr. Benon Kwesiga (MBChB, MPH, Advanced FETP) is a Senior Epidemiologist with 10 years' experience in epidemiology and public health. Benon has held several positions in the Uganda Ministry of health (UMOH) during which time he have gained experience in epidemiology and public health. Benon studied medicine from Mbarara University of Science and Technology before undertaking an MPH degree at Makerere University. He then followed this up with a training in Advanced Field Epidemiology.

In the last 8 years, Benon has worked as an Advanced FETP Field Supervisor, Field Coordinator and currently Program Coordinator within the Uganda Public Health Fellowship Program. He has trained over 90 FETP residents in advanced field epidemiology and public health. He has been involved in outbreak investigations, epidemiological studies, quality improvement projects, analysis of public health surveillance data etc. He routinely trains FETP residents in delivering effective scientific presentations. He is an author and coauthor to several publications especially disease outbreak investigations like COVID-19, Ebola, Marburg, cholera, typhoid etc.

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**Dr. Mutaawe Arthur**

My MPH training at Makerere University School of Public Health gave me critical competencies as a Public Health Specialist, enabling me to address Uganda's public health challenges and contribute to health system strengthening at all levels.

Currently, I support the Ministry of Health's Environmental Health Department, where I play a significant role in policy development. I've contributed to key policies, strategies, and guidelines in Environmental and Community Health and Health Promotion. I also develop training materials, facilitate capacity-building sessions, and monitor

adherence to new protocols.

I've actively engaged in disease surveillance and outbreak responses, including COVID-19, Ebola, and cholera, and contributed to the Ebola Virus Disease After-Action Review. As the lead for inter-sectoral coordination on Water, Sanitation, and Hygiene (WASH), I promote unified planning and resource mobilization.

Resource mobilization has been another focus, securing funds for healthcare waste management, climate adaptation, and sanitation projects. Additionally, I support impactful public health research, including a collaboration with the Economic Policy Research Center on the cost of inaction in WASH, building an investment case for Uganda. These roles reflect my dedication to strengthening public health systems and ensuring sustainable interventions.

**Mirembe Faith**
**(Public Health Specialist-Ministry of Health Headquarters Uganda)**

My training as an MPH student at Makerere University School of Public Health equipped me with essential skills as a Public Health Specialist, enabling me to address diverse public health challenges. This foundation has significantly contributed to strengthening Uganda's health systems at sub-national, national, and global levels.

Currently, I work with the Ministry of Health, supporting the Environmental Health Department. My major impact lies in policy development, having contributed to key policy documents, strategies, and guidelines across Environmental Health, Community Health, and Health Promotion. Additionally, I have developed training materials, facilitated capacity-building sessions, and monitored compliance with new standards and protocols.

I have actively participated in disease surveillance and outbreak investigations, including responses to COVID-19, Ebola, and cholera. Notably, I contributed to the After-Action Review for the Ebola Virus Disease. I also lead inter-sectoral coordination for Water, Sanitation, and Hygiene (WASH), promoting harmonized planning and resource mobilization.

Resource mobilization is another area where I have excelled, securing funding for interventions in healthcare waste management, climate change, and hygiene improvement. Moreover, I support high-impact public health research, including a study with the Economic Policy Research Center to build an investment case for WASH in Uganda.

**Ndagire Margaret Ireeta**
**Epidemiologist**

My story as an Epidemiologist at a Regional Referral Hospital

I am Ndagire Margaret Ireeta, currently serving as a regional epidemiologist for Mbale region. My passion for epidemiology began in 2006 during my Bachelor of Environmental Health Science studies at Makerere University, where Dr. Makaga David introduced me to the subject. Intrigued by its depth, I pursued a Master of Public Health, specializing in the Epi-Bio track. This equipped me with critical skills in study design, data analysis, and outbreak investigation, solidified by my first field experience responding to a cholera outbreak in Buliisa under Dr. Wamala's mentorship.

After completing my MPH, I supported research at the School of Pharmacy and guided students in writing research projects, applying my epidemiology skills. Joining public service during the COVID-19 pandemic in 2021 highlighted the vital role of epidemiologists. At Mbale Regional Referral Hospital, I analyze health data, lead outbreak preparedness efforts, and provide health education.

From investigating disease trends to training rapid response teams and ensuring resources like PPEs and emergency medical supplies are available, my work revolves around health promotion, disease prevention, and preparedness. Every day presents a unique challenge, reinforcing my commitment to using data-driven approaches to improve public health outcomes in the region.

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