MUWRP
Makerere University
Walter Reed Program

Annual Report 2024

We are a biomedical research organization with over 20 years' experience and commitment to influencing public health policy and action through impactful infectious diseases research, innovation, surveillance, capacity building, and health systems strengthening.

01 January - 31 December 2024

Acronyms and Abbreviations

ACESO	The Austere Environment Consortium for Enhanced Outcomes
AFI	Acute Febrile Illnesses
AMR	Antimicrobial Resistance
AFRICOS	African Cohort Study
ANC	Antenatal Care
ART	Antiretroviral Therapy
BRILLIANT	**BR**inging **I**nnovation to c**L**inical and **L**aboratory Research to End HIV **I**n **A**frica through **N**ew Vaccine **T**echnology
CAB	Community Advisory Board
CoVAB	College of Veterinary Medicine, Animal Resources and Biosecurity
COVID-19	Coronavirus Disease
DELIVER	Developing Leadership and Innovation for Viral Eradication Research
EIDP	Emerging Infectious Diseases Programme
EMR	Electronic Medical Records
FY	Fiscal Year
HCRISA	Hutchinson Centre Research Institute of South Africa
HIV	Human Immunodeficiency Virus
HJF	Henry M. Jackson Foundation for the Advancement of Military Medicine
HOPE	HIV Obstruction by Programmed Epigenetics
HPV	Human Papillomavirus
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MHRP	U.S. Military HIV Research Program
MOCHI	Multinational Observational Cohort of HIV and Other Infections
MoDVA	Ministry of Defence and Veterans Affairs
NIH	National Institutes of Health
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
SAMRC	South African Medical Research Council
TB	Tuberculosis
TSS	Technology Support Services
UNCST	Uganda National Council for Science and Technology
UPDF	Uganda People's Defence Forces
USAID	U.S. Agency for International Development
UVRI	Uganda Virus Research Institute
UWA	Uganda Wildlife Authority
WRAIR-Africa	Walter Reed Army Institute of Research–Africa

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Word from Chairperson

Board of Directors

On behalf of the Board of Directors of the Makerere University Walter Reed Program (MUWRP), I am pleased to invite you to explore the 2024 MUWRP Annual Report.

MUWRP's story, spanning over two decades of dedicated service, highlights a remarkable journey—from modest beginnings to becoming one of the leading institutions in biomedical research, disease surveillance, and healthcare systems strengthening in Uganda. This progression is truly inspiring.

Founded to conduct clinical trials for vaccine development, MUWRP has evolved its focus to address broader global health security challenges. Today, the organization plays a vital role in HIV prevention, care, and treatment; conducts disease surveillance for epidemics; and prepares for and responds to public health emergencies. We are pleased that this expansion in scope has positioned MUWRP among the leading organizations in biomedical research, disease surveillance, and healthcare systems strengthening in Uganda.

The achievements highlighted in this report exemplify the core principles that have defined MUWRP over the years—dedication to continuous learning, adaptability, and the adoption of cutting-edge technologies and best practices. These qualities have enabled MUWRP to remain responsive to the evolving needs of the communities and stakeholders it serves, thereby enhancing its impact and effectiveness.

I sincerely thank all our stakeholders—including research volunteers, sponsors, collaborators, implementing partners, Board members, and the communities we serve—for their ongoing support. Together, we look forward to a future marked by innovation, progress, and a steadfast commitment to improving health outcomes for all.

PROF. FRED WABWIRE-MANGEN
Chairperson, Board of Directors

Foreword

Dear Reader,

On behalf of MUWRP, I am pleased to present our Annual Report for the Fiscal Year 2024. This document highlights the accomplishments, innovative initiatives, and collaborative efforts that have propelled us forward in our mission to address pressing health challenges in Uganda and beyond. As you explore this report, you will find accounts of progress and hope, which reinforce our steadfast commitment to creating healthier futures for all.

In 2024, we made significant progress toward our 2022–2026 strategic plan by conducting vaccine clinical trials for HIV, Marburg virus, COVID-19, and Schistosomiasis. We also advanced observational studies, including the Multinational Observational Cohort of HIV and Other Infections (MOCHI) and the African Cohort Study (AFRICOS), to generate vital data for HIV programs in Uganda and globally. Additionally, we continued delivering comprehensive HIV services across diverse communities and maintained vigilant disease surveillance to detect emerging and re-emerging health threats.

I am pleased to highlight three major developments in MUWRP's journey that took place in 2024:

- We transitioned from "Makerere University Walter Reed Project" to "Makerere University Walter Reed Program." As our activities have evolved and expanded over the years, we believe this new name more accurately reflects the diverse and comprehensive scope of our work—including biomedical research, disease surveillance, HIV service delivery, capacity building, and community engagement.
- Our organizational logo was redesigned to enhance visual impact and align with our new branding strategy.
- We successfully completed the repayment of the commercial mortgage facility for our headquarters, securing a permanent home at Plot 42 Nakasero Road, Kampala.

It is worth noting that our achievements in 2024 were made possible through the dedicated efforts of numerous stakeholders. I extend my deepest gratitude to our Board members, donors, sponsors, research volunteers, collaborators, regulatory and ethical bodies, service providers, local governments, health facilities, implementing partners, MUWRP staff, and the communities we serve. Their unwavering support has been instrumental in driving our success and reinforcing our leadership in biomedical research, disease surveillance, and the strengthening of healthcare systems in Uganda.

I invite you to explore the detailed information contained within this report. It is my hope that this will inspire many to join us in our efforts to respond to disease threats through pioneering health research, disease surveillance, and strengthening health systems. Together, we can create a lasting impact on public health!

HANNAH KIBUUKA, MBChB, MMed, MPH
Executive Director

Executive Summary

In 2024, MUWRP marked the third year of its strategic plan for 2022–2026, implementing a diverse array of activities aimed at enhancing clinical research, laboratory services, HIV prevention, care, and treatment, as well as surveillance and responses to new and re-emerging disease threats and outbreaks. The organization also prioritized strengthening administration and financial management, leading to several significant achievements detailed in this report.

Through its clinical research initiatives, MUWRP reaffirmed its commitment to public health by making substantial progress in vaccine research for a variety of diseases of public health significance and HIV cure research. The organization carried out clinical trials testing candidate vaccines against HIV, Ebola Sudan, Marburg, Schistosomiasis, and COVID-19, as well as a laboratory biosafety and biosecurity study, while also contributing to HIV cure research and conducting epidemiological studies. The data emanating from these research efforts contributed to reports, manuscripts, and scientific conference abstracts.

The research laboratory also achieved significant milestones in 2024. Among these was its crucial involvement in the **BR**inging Innovation to c**L**inical and **L**aboratory Research to End HIV **I**n **A**frica through the **N**ew Vaccine **T**echnology (BRILLIANT) Consortium's initiative to develop HIV candidate vaccine immunogens by African scientists, underscoring its dedication to advancing HIV research. Furthermore, the laboratory implemented a cross-sectional study, code-named "SAFE-CU," which assessed the effectiveness of biosafety guidelines and practices recommended by the Ministry of Health across public health laboratories in Central Uganda to understand lab adoption and compliance.

The laboratory also underwent substantial infrastructural enhancements and acquired state-of-the-art equipment, which strengthened its HIV cure research capacity and technological capabilities to support future scientific pursuits.

MUWRP continued implementing health systems strengthening activities through the HIV Prevention, Care, and Treatment Program in the districts of Buvuma, Buikwe, Kayunga, Mukono, Luwero, and Nakasongola, funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Significant achievements of the strengthened systems during this period include the identification of 9,720 new HIV-positive cases; the distribution of 36,202 HIV self-testing kits; and assistance for 23,728 individuals to begin PrEP.

MUWRP, working with district health partners, also provided circumcision services to 27,986 men, HIV treatment to 93,752 clients, and performed cervical cancer screening for 10,807 women. Furthermore, 5,125 TB cases were identified and linked to care; 11,819 adolescent girls and young women were enrolled in the DREAMS program in Mukono, Luwero, and Kayunga districts; and 138 ART facilities were supported to deploy Electronic Medical Records (EMR) systems.

The Emerging Infectious Diseases Program (EIDP) continued to complement the Uganda

Ministry of Health's (MOH) efforts to support the detection, mitigation, and response to emerging and re-emerging infectious disease threats of global health security importance. We conducted surveillance for human respiratory pathogens, antimicrobial resistance, acute febrile vector-borne diseases, zoonotic respiratory pathogens in Uganda, acute febrile illness and acute gastroenteritis within both civilian and military populations in Somalia; contributing to reports and publications that enabled the MoH and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to provide national strategic guidance on outbreaks of public health importance.

Under the Austere Environment Consortium for Enhanced Outcomes (ACESO) program, MUWRP concentrated on advancing sepsis research through a series of innovative studies, including the primary sepsis study and sub-studies such as Point of Care Ultrasound Scan (POCUS) to assess the effects of sepsis on the cardiorespiratory system; field testing of the novel near-painless capillary blood withdrawal Tasso device; and the Modular Wireless Patient Monitoring System (MWPMS) for wireless vital sign monitoring—aimed at improving patient safety monitoring and enhancing field applicability.

Other sub-studies included the TICK Borne study to identify tick-borne pathogens as causes of sepsis and to explore new diagnostic methods for detecting these pathogens, as well as field testing of the Elispot device to investigate immune modulators in fungal and bacterial infections. In addition, MUWRP conducted the Prophylaxis and Treatment of COVID-19 (PROTECT) clinical trial at the ACESO site in Fort Portal, which aimed to evaluate Upamostat, an investigational therapeutic for COVID-19. These efforts underscore MUWRP's dedication to achieving significant advancements in the management of infectious diseases.

Through the administration department, MUWRP prioritized strengthening its operational efficiency by effectively managing its vehicle fleet, procuring essential services, projects, and commodities to support both institutional and program activities, and recruiting new staff to expand program operations. The organization also prioritized staff safety through specialized training on emergency responses, such as water safety and fire safety protocols. Additionally, MUWRP installed solar hybrid systems at key program sites, including the AFRICOS site, Ntenjeru Training Centre, Buvuma Laboratory, Cluster Office, and Kawolo Cluster Office, to ensure a reliable power supply supporting continuous healthcare and research operations.

MUWRP, through its various programs, hosted and engaged a broad spectrum of influential and strategic stakeholders. These included: a delegation from BRILLIANT Consortium leadership and Hutchinson Centre Research Institute of South Africa (HCRISA); a delegation from the SABIN Vaccine Institute; a team from the Karolinska Institute led by Prof. Johan Sandberg; Professor Lishomwa Ndhlovu from Weill Cornell Medicine; Professor Julian Ma from St. George's University of London; Dr. Jerome H. Kim from the International Vaccine Institute; the Global Emerging Infections Surveillance Commandant; WRAIR Africa leadership; participants in the Developing Leadership and Innovation for Viral Eradication Research (DELIVER) workshop held in Kampala, including representatives from Brazil, Nigeria, Mozambique, Tanzania, Kenya, Thailand, and the Philippines; and inspectors from the Uganda National Council for Science and Technology and the Makerere University School of Public Health Institutional Review Board.

These engagements focused on evaluating MUWRP's capacity to support clinical trials, monitoring the progress of ongoing studies, assessing the academic development of scholars associated with MUWRP, and exploring avenues for technology transfer to advance HIV cure research. These interactions are anticipated to foster collaborations and partnerships that will improve research capabilities through staff and infrastructure capacity building, encourage scientific innovation, and bolster global health security.

MUWRP Achievements

In 2024, MUWRP achieved significant milestones across its various programs and departments. This section highlights the key accomplishments and contributions of the year, reflecting MUWRP's ongoing dedication to advancing health outcomes through innovation, collaboration, and excellence.

1.0. Clinical Research

MUWRP continued to reaffirm its dedication to public health by making notable strides in vaccine development for a wide range of diseases of public health importance and HIV cure research activities in 2024.

The organization conducted various clinical trials testing candidate vaccines against HIV, Ebola Sudan, Marburg, and Schistosomiasis, contributed to HIV cure research, and carried out epidemiological studies. These efforts contributed to global health solutions for these diseases.

Clinical Trials

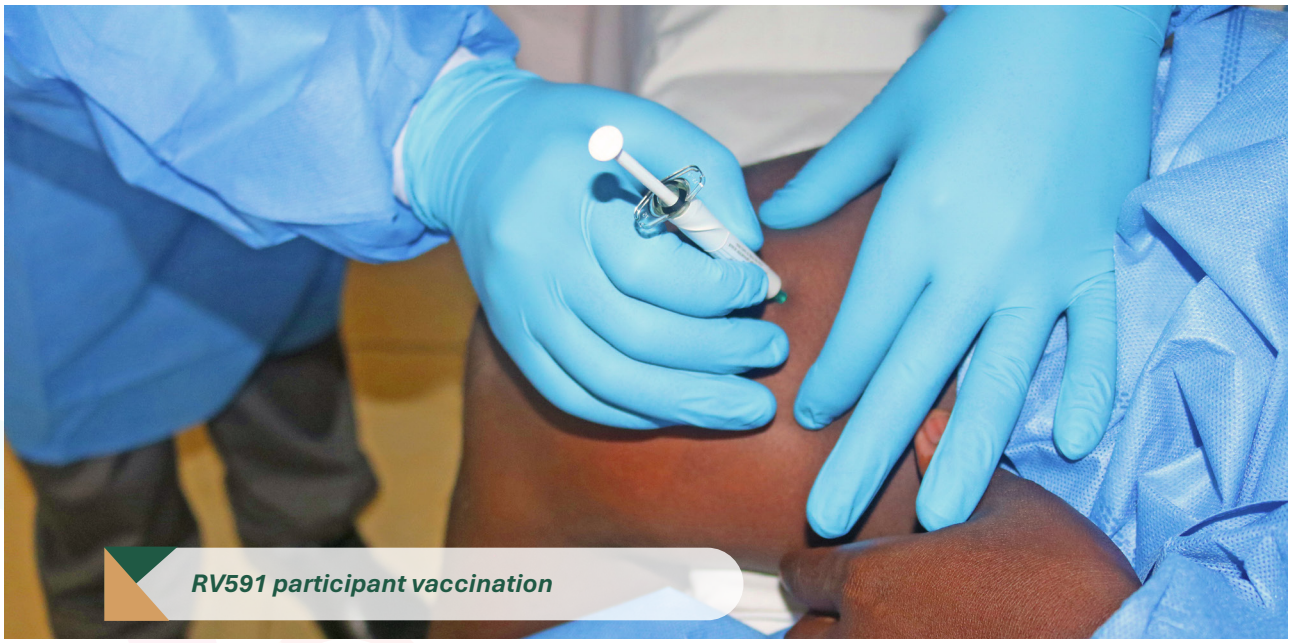
The **Schistosomiasis vaccine** (Sm-TSP-2/Al) study, initiated in 2019, concluded its follow-up phase. In 2024, MUWRP focused on follow-up visits for 200 participants in Part Two of the study, which centred on vaccine safety and efficacy, at the Kasenyi Satellite Clinic. The study achieved a notable retention rate of 77%, a significant accomplishment given the highly mobile fishing population. Data analysis is currently ongoing.

This year, results from Part A of the study—evaluating dose escalation of the candidate vaccine Sm-TSP-2 with adjuvant—indicated that the vaccine was safe, with only mild to moderate, well-tolerated, and short-lived adverse effects. No vaccine-related serious side effects were observed. The highest antibody responses were detected among participants who received 100 mcg of Sm-TSP-2/Al with AP 10-701 (compared to those that received 30mcg and 10mcg of Sm-TSP-2/Al) and this was further evaluated in Phase II of the study. The results were presented at the American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting held in New Orleans, USA, in November 2024.

In a Phase II monovalent chimpanzee adenoviral-vectored **Marburg virus vaccine trial**, sponsored by the Sabin Vaccine Institute and code-named **"SABIN-002,"** MUWRP successfully enrolled 63 participants. This trial included 50 individuals aged 18–50 and 13 individuals aged 51–70. The trial focused on assessing the safety and reactogenicity of the candidate Marburg vaccine. The study had a 97% retention rate. In the same year, MUWRP completed recruitment of volunteers into the **Sabin-003** trial. This Phase II trial is testing a candidate **Ebola Sudan vaccine**. It successfully enrolled 62 participants, including older participants aged 51–70 years. Study follow-up activities continued during this period. The successful recruitment and retention in these two studies, along with the high-quality data collected, will offer important insights for the subsequent development of vaccines against **Marburg** and **Ebola Sudan**—two highly contagious viruses with outbreak potential, which cause deadly diseases with no cure.

A research nurse guiding a volunteer through the consent procedure

MUWRP advanced the **RV591 (Rapid Vax) Phase 1 HIV vaccine trial,** which evaluates the safety and immune response of a novel vaccine delivery schedule that mimics natural infection. Vaccinations are administered over a two-week period (day 0, day 4, day 8, and day 15)—differing from the traditional bolus administration of vaccines. Results from this novel vaccine delivery approach will provide insights into the design of future HIV vaccination trials.



RV591 participant vaccination

The **Phase III multi-site, multi-country SANOFI COVID-19 vaccine study** was concluded. MUWRP was one of eight sites in Uganda and enrolled 50 participants out of the 418 enrolled in the country. Data from this trial led to the regulatory approval of the adjuvanted bivalent D614 and Beta (B.1.351) vaccine for use in the EU in 2022, marking significant progress in COVID-19 vaccine development efforts. This vaccine is particularly important for low- and middle-income countries, as it does not require freezing at high temperatures, making distribution inexpensive and feasible in rural areas with inadequate power supply.

BRILLIANT Consortium

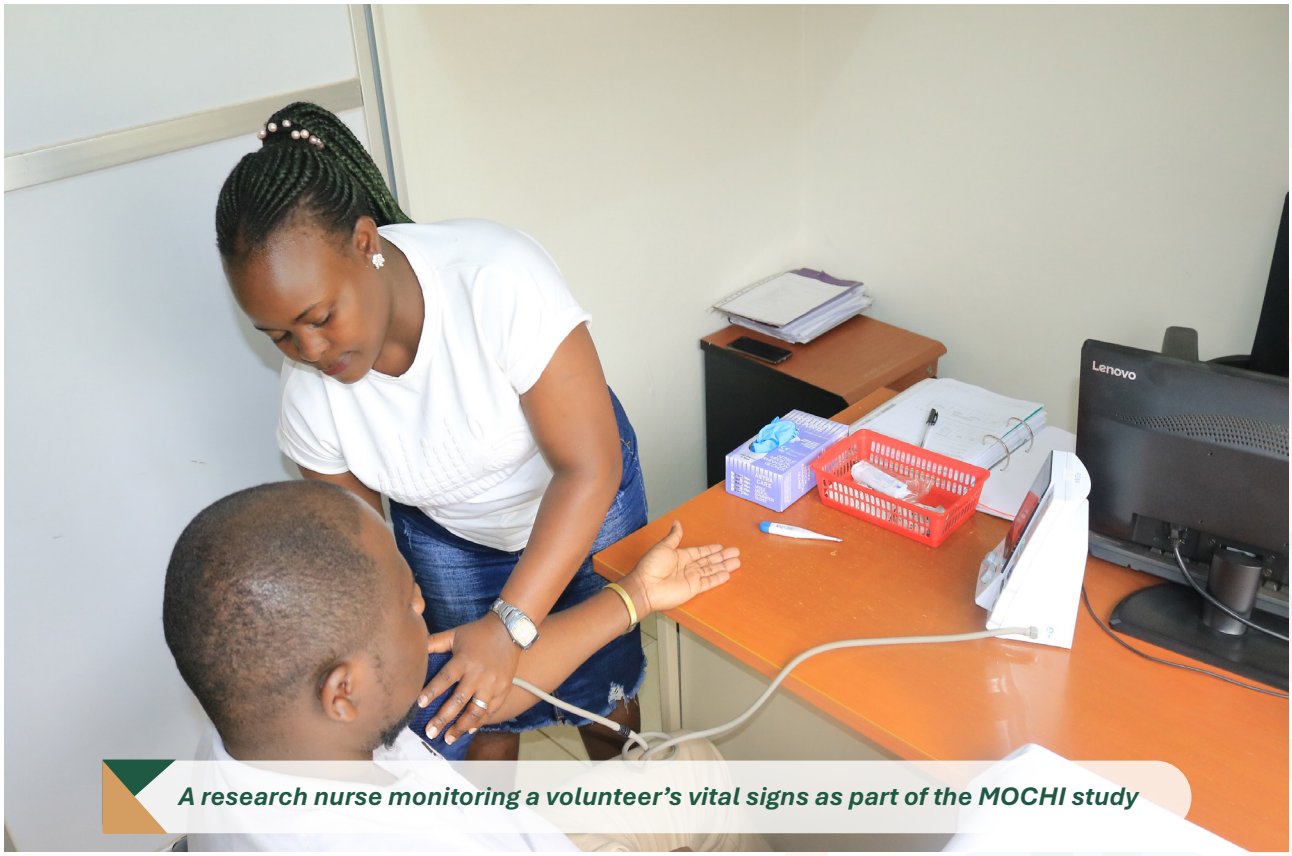
The BRILLIANT (**BR**inging **I**nnovation to c**L**inical and **L**aboratory research to end HIV **I**n **A**frica through **N**ew vaccine **T**echnology) Consortium is a cooperative agreement with the U.S. Agency for International Development (USAID), led by the South African Medical Research Council (SAMRC). The consortium comprises a multi-disciplinary collaboration involving Kenya, Mozambique, Nigeria, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. The overall objective of the BRILLIANT Consortium is to develop and evaluate HIV vaccine candidates emanating from Africa and to conduct both "First-in-Africa" clinical development with existing immunogens and adjuvants, as well as "First-in-Human" HIV vaccine discovery studies of novel immunogens.

in 2024, MUWRP actively participated in various committees of the consortium, including the scientific steering committee, the executive committee, the scientific governance committee, and protocol development. Furthermore, MUWRP hosted the consortium's assessment visits, which reviewed site capabilities and processes to determine their suitability for conducting early-phase clinical trials. These engagements showcased MUWRP's capacity to contribute to HIV vaccine development, given its available physical and human resources. Consequently, MUWRP was chosen to serve as a site for the implementation of the BRILLIANT-001 Phase I discovery clinical trial.

Beyond Trials

MUWRP continued its **HOPE Collaboratory HIV cure research** efforts, which involve the collection of tissue samples such as lymph node and gut biopsies, as well as PBMC collection via leukapheresis. These samples are vital for exploring HIV cure strategies, including approaches to silence or eliminate latent HIV reservoirs. MUWRP has demonstrated its capacity to safely conduct complex invasive procedures critical for ongoing HIV cure research.

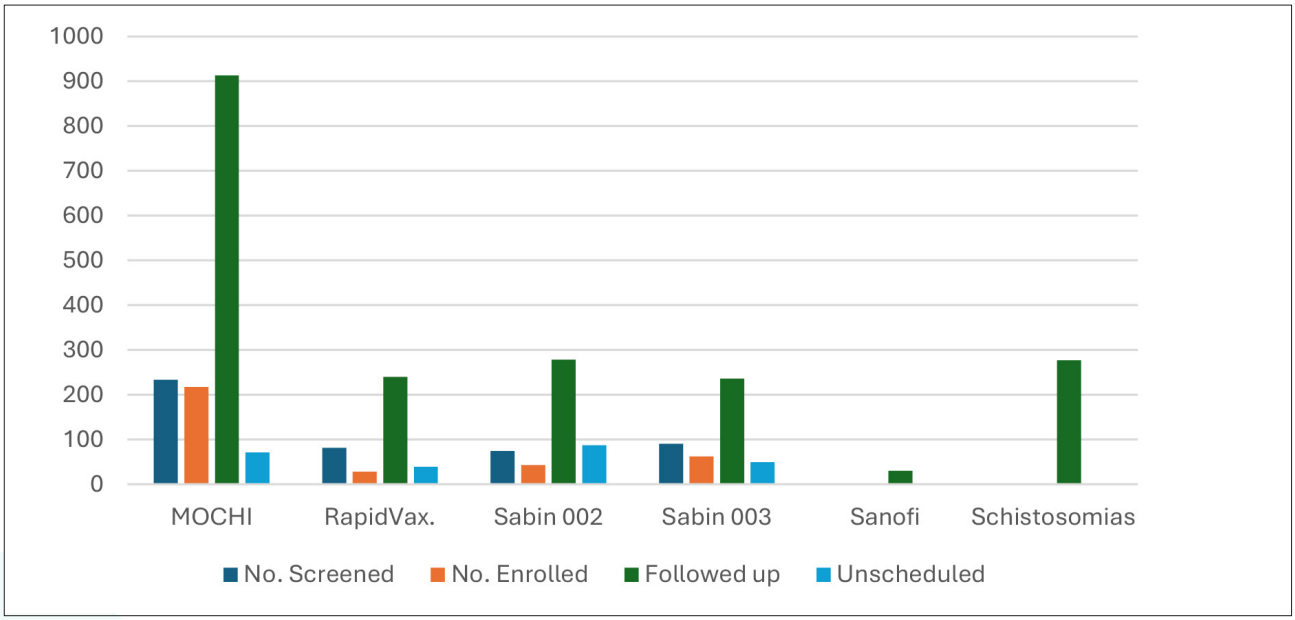
MUWRP also enrolled 422 individuals at increased risk of HIV infection in the **RV583 Multinational Observational Cohort of HIV and Other Infections (MOCHI)**. Participants are followed up at quarterly visits and assessed for sexually transmitted infections (STIs), including HIV, and factors that predispose them to acquiring HIV, laying the groundwork for future late-phase HIV vaccine trials. In 2024, 13 participants acquired HIV despite counselling on the use of PrEP. This demonstrates the ongoing need to provide counselling with an emphasis on drug adherence to the PrEP regimen to prevent HIV among those at increased risk of infection. We are very hopeful that, with the availability of long-acting PrEP in the near future, most of these infections will be averted.



A research nurse monitoring a volunteer's vital signs as part of the MOCHI study

During the same period, **AFRICOS** celebrated its 11th year of operation (2013–2024) and successfully enrolled 26 youths, increasing the total number of active participants to 444 (41% male; 59% female). In this year, AFRICOS published papers on advanced HIV disease in East Africa and Nigeria, the cumulative exposure to depressive symptoms and all-cause mortality, the transformative impact of AFRICOS towards reaching HIV 95-95-95 goals in sub-Saharan Africa, persistent low-level viremia and its association with non-infectious comorbidities, and plasma inflammatory biomarkers linked to worse cognition among Africans living with HIV.

Figure 1: Profiles of Study Activities During 2024



Community Engagement, Continuous Quality Improvement, and Pharmacy

MUWRP has vibrant community engagement, pharmacy, and continuous quality improvement and compliance sections that support all aspects of clinical research. The community engagement section supported participant recruitment and retention, as well as fostering strategic collaborations with local and international stakeholders to ensure research inclusiveness and responsiveness to community needs and concerns.

MUWRP staff conducting a prescreening briefing with a voluteer for the MOCHI study

The pharmacy managed shipments of investigational products and laboratory supplies, handled product custody, conducted reconciliations and destruction procedures, prepared clinical trial applications, and assisted with regulatory inspections.

The Continuous Quality Improvement and Compliance section strengthened research integrity through various activities including:

- Coordinating the BRILLIANT site assessment visit
- Site initiation visits for all studies
- Coordinating inspection visits by the Uganda National Council for Science and Technology (UNCST) and Makerere University School of Public Health Institutional Review Board (IRB)
- Training on safety and regulatory compliance
- Monitoring data quality across studies
- Managing the preparation and submission of amendments as well as data and sample sharing agreements to IRBs.

These efforts helped maintain high standards of study conduct and ensured compliance with regulatory requirements.

The Continuous Quality Improvement and Compliance team going through study files to check compliance with regulatory requirements

2.0. Data Management

In 2024, MUWRP's data department engaged in comprehensive data management processes across multiple research studies.

In this endeavor, the data management team performed various statistical analyses for ongoing research studies and programs, including SAFE-CU, EIDP, and ACESO, contributing to study reports, manuscript development, and conference abstracts. One such abstract was titled "***Data Handling and Management During High-Consequence Infectious Disease Outbreak: The MEURI Study Set-Up Experience***," which was presented at the second edition of the Ministry of Health Uganda National Digital Conference.

In line with efforts to enhance and strengthen data security and preservation, MUWRP also acquired an additional archive facility dedicated to long-term data record storage.

Data archival facility at MUWRP head office in Nakasero

3.0. Research Laboratory

Since 2005, MUWRP's Research Laboratory has successfully maintained its accreditation from the College of American Pathologists (CAP), a testament to its commitment to quality and excellence in laboratory practices. In 2024, the laboratory continued to advance research by undertaking various actions and engagements, as highlighted below:

With technical support from the U.S. Military HIV Research Program and the Henry M. Jackson Foundation for the Advancement of Military Medicine, the laboratory made significant contributions to the multi-site, multi-country BRILLIANT Consortium's efforts in developing HIV vaccine immunogens. This included identifying skills and knowledge gaps regarding HIV vaccine immunogen design among early-career researchers across the partner sites. Subsequently, an active training program was implemented to introduce participants to multiple founder virus (MFV) concepts, with particular emphasis on HIV transmission, genetics, and viral evolution, in collaboration with the MHRP Rollins laboratory.

The training enhanced participants' capabilities for bioinformatics analyses relevant to computational and rational MFV immunogen design, updated for locally relevant HIV subtypes. Furthermore, the training enabled participants to understand the challenges posed by HIV diversity - especially on the African continent - for vaccine development. It also aimed to build capacity in molecular and computational techniques critical for advancing HIV vaccine research through the design of immunogens specific to the HIV subtypes circulating in sub-Saharan Africa.

In partnership with the National Biosafety and Biosecurity Coordination Office within the Department of National Health Laboratory and Diagnostic Services of the MoH, the laboratory conducted a cross-sectional study titled "**Adoption, Compliance, and Effectiveness of MoH-Recommended Biosafety Practices and Guidelines at Public Health Laboratories in Central Uganda"** - known as "**SAFE-CU**." Funded by the Elizabeth R. Griffin Program of Georgetown University, the study evaluated adherence to biosafety and biosecurity practices across 43 public health laboratories in Central Uganda, recognizing the critical importance of these protocols in safeguarding personnel, communities, and the environment from biological hazards.

By comparing actual practices against the MoH's 2021 Biosafety and Biosecurity Manual - which outlines economically feasible and sustainable concepts and codes of practice for the safe handling of biological agents and toxins relevant to Uganda's public health - the study aimed to identify gaps and strengths in implementing recommended safety measures. These measures focus on the handling of biological specimens, chemicals, and waste, and are essential for preventing unintentional releases, exposures, theft, or misuse of biological agents in the

country. The detailed results anticipated in 2025, are expected to inform strategies to enhance laboratory safety and biosecurity systems within Uganda's public health infrastructure.

Strategic Engagements

Through the Laboratory and Research Program, MUWRP hosted and engaged a diverse array of influential and strategic stakeholders. These included a delegation from the BRILLIANT Consortium leadership and the Hutchinson Centre Research Institute of South Africa; representatives from the SABIN Vaccine Institute; a team from the Karolinska Institute led by Prof. Johan Sandberg; Col. Julie Ake from the U.S. Military HIV Research Program; Prof. Lishomwa Ndhlovu from Weill Cornell Medicine; Prof. Julian Ma from St. George's University of London; Dr. Jerome H. Kim from the International Vaccine Institute; participants of the Developing Leadership and Innovation for Viral Eradication Research (DELIVER) workshop held in Kampala—coming from Brazil, Nigeria, Mozambique, Tanzania, Kenya, Thailand, and the Philippines; inspectors from the Uganda National Council for Science and Technology; and representatives from the Makerere University School of Public Health Institutional Review Board.

These engagements focused on evaluating MUWRP's capacity to support clinical trials, monitoring the progress of ongoing studies, assessing the academic development of scholars associated with MUWRP, and exploring avenues for technology transfer to advance HIV cure research. These interactions are expected to foster new collaborations and partnerships, enhancing research capabilities through staff and infrastructural capacity building and the promotion of scientific innovation.

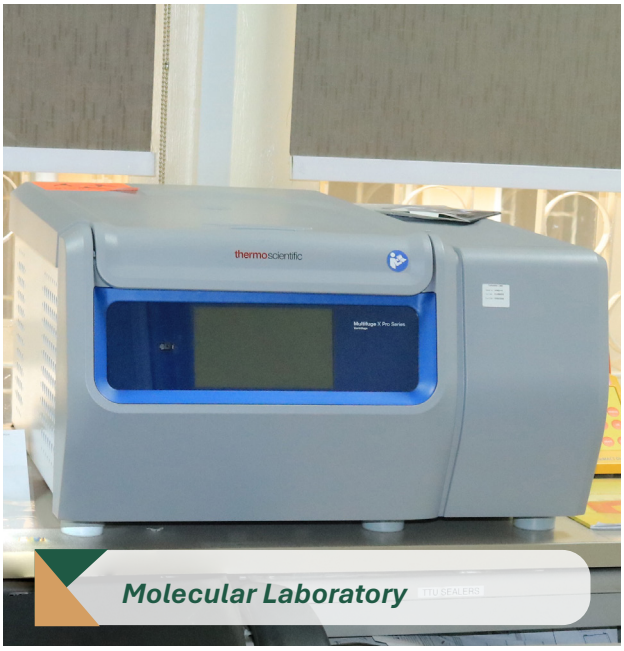
Professor Lishomwa Ndhlovu (far right) an immunology professor at Weill Cornell Medicine's Division of Infectious Disease, and Col. Julie Ake - Director MHRP (Second right) during a site tour of the MUWRP Research laboratory

Through the DELIVER initiative and collaboration with Weill-Cornell University, the laboratory underwent significant infrastructural upgrades and acquired advanced equipment to enhance existing technologies and facilitate technology transfer.

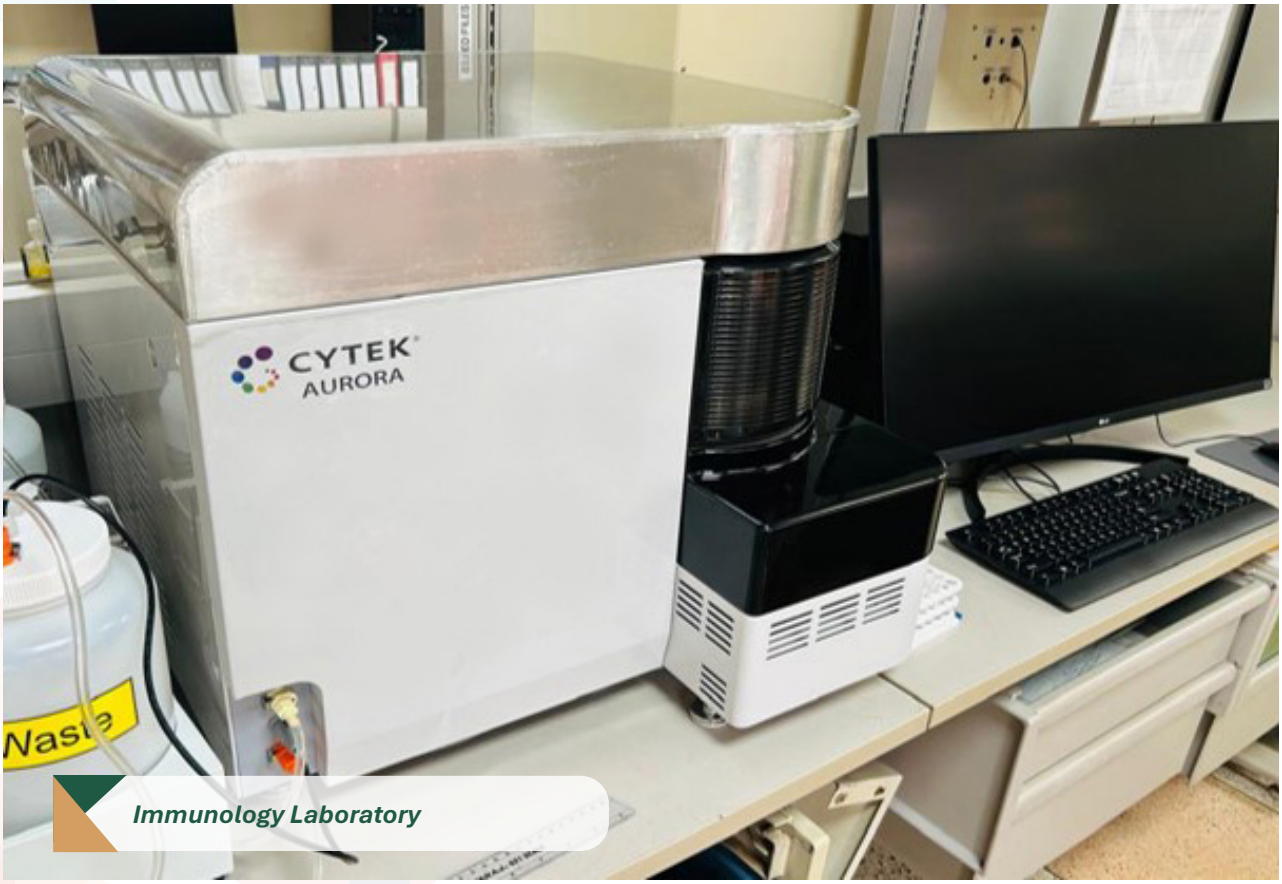
Contractor handing over completed laboratory renovation works to MUWRP's Excutive Director, Dr. Hannah Kibuuka

The facility was reorganized into three specialized laboratories: a General Laboratory (including sample processing, safety testing, and sample repository sections), an Immunology Laboratory (focused on diagnostic assays and flow cytometry), and a Molecular Laboratory. Notable equipment acquired included a 10x Genomics Chromium single-cell sequencer from Weill-Cornell University; a Cytek Aurora flow cytometer with three lasers and 24 colors; a Rotor-Gene Q 5plex real-time PCR platform; a 4150 TapeStation; a Qubit 4 fluorometer; a Veriti Pro thermocycler; a Cyflow CD4 counter; a Countess 3 cell counter; and a gel documentation system. All these facilities have contributed to enhancing the lab's research capacity and technological capabilities.

General Laboratory



Molecular Laboratory



Immunology Laboratory

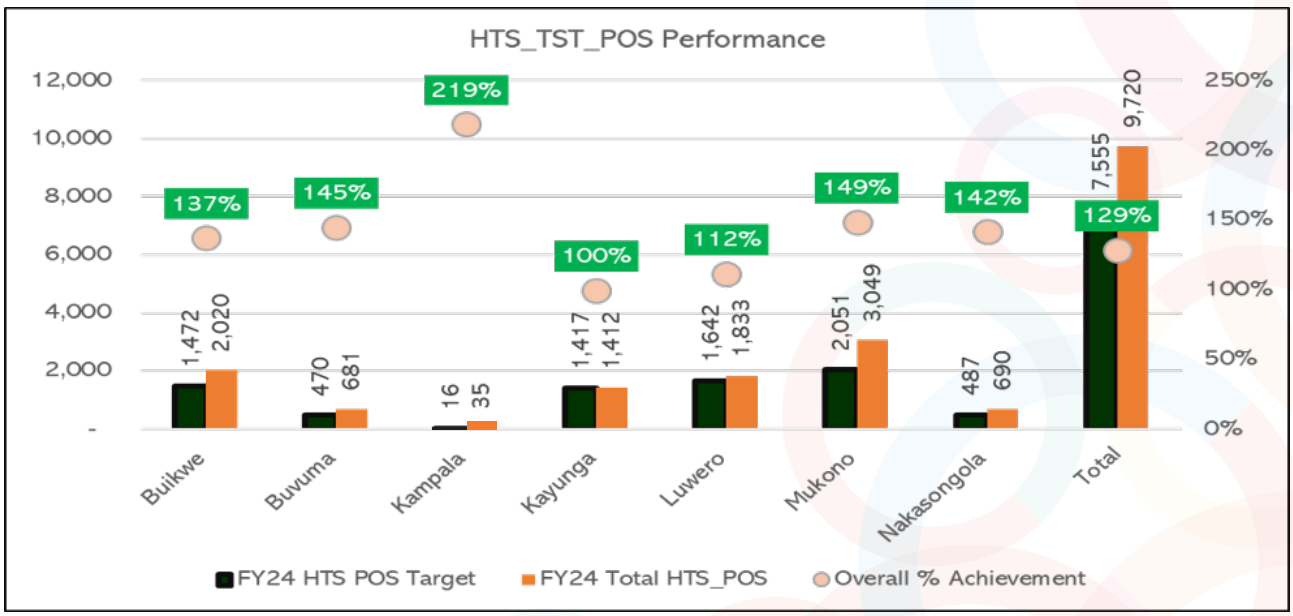
4.0. PEPFAR HIV Prevention, Care and Treatment Program

In 2024 MUWRP continued to deliver comprehensive HIV services across six districts in Uganda: Mukono, Kayunga, Buikwe, Buvuma, Luweero, and Nakasongola

HIV Testing

For the year under review, MUWRP facilitated the identification of 9,720 new HIV-positive cases, surpassing the target of 7,555. The primary methods for case identification included provider-initiated testing and counselling (28%), index testing (facility: 10%; community: 9%), prevention of mother-to-child transmission (PMTCT) at antenatal clinics (15%), and TB screening (8%). Mukono district reported the highest number of positive cases, accounting for 21% of all new diagnoses. Approximately 97% of these individuals were enrolled in antiretroviral therapy (ART) and remained in care during the reporting period. Furthermore, MUWRP distributed a total of 36,202 HIV self-testing kits, of which 83% (7,058) were directly assisted, and 17% (1,509) were unassisted. Among the unassisted users, 56% (841) self-tested independently, 25% (381) were sex partners, 2% (37) were caregivers for children, and 17% (250) fell into other categories.

Figure 2: Overall HIV Testing Performance Across Six Districts Under the MUWRP-PEPFAR Program



HIV Prevention

MUWRP made significant strides in HIV prevention by supporting 23,728 individuals to initiate PrEP across 78 sites, exceeding the annual target of 20,048. Audio-Computer Assisted Self- Interview (ACASI) technology was also introduced at Mukono, Kawolo, and Kayunga hospitals to enhance the identification of individuals at substantial HIV risk.

Additionally, MUWRP delivered PMTCT services, achieving a remarkable 99% testing rate among pregnant women attending ANC, with 109,168 out of 109,802 women tested for HIV. Furthermore, MUWRP provided circumcision services to 27,986 men, reaching 88% of its target - primarily through surgical methods (95%) and device techniques (5%)

Health worker conducts health education for men at a circumcision clinic at Mukono General Hospital

MUWRP also intensified efforts to reduce HIV incidences among adolescent girls and young women (AGYW), particularly through the implementation of the DREAMS program in Mukono, Luweero, and Kayunga districts. As a result of these efforts, 94% of the 11,819 enrolled AGYW received a full set of age-appropriate primary packages and at least one secondary service. Cumulatively, 14,588 AGYW completed at least one DREAMS service, with 9,296 receiving violence prevention packages and 2,355 benefiting from education subsidies. These activities contribute to HIV prevention and provide holistic support for this vulnerable group.

HIV Care and Treatment

Under the HIV treatment component, MUWRP provided anti-retroviral treatment to a total of 93,752 clients, compared to 89,585 in the previous year. Of these, 95.6% (89,610) were adults, and 4.4% (4,142) were children, reflecting the organization's commitment to addressing the needs of diverse populations.

MUWRP staff speaks to a father with an HIV+ child during a health camp at Kayunga Regional Referral Hospital

Furthermore, interventions aimed at addressing cervical cancer screening among women aged 25–49 were implemented. These efforts led to the screening of 10,807 women, surpassing the annual target of 10,334. The screenings conducted using Human Papillomavirus (HPV) and Visual Inspection with Acetic Acid (VIA) methods yielded an 11% positivity rate, identifying 1,201 women with pre-cancerous lesions. The 44 women identified with cervical cancer were referred for further management.

A total of 5,125 new TB cases were identified, representing 91% of the annual target. Key activities included weekly screening at high-volume facilities, TB index contact tracing, TB community awareness, screening and testing (CAST+) implementation, redistribution of TB commodities, and accurate bimonthly ordering and redistribution of HIV testing supplies to facilities with low stock levels. Of the registered HIV-positive TB cases, 99% received ART, and 91% were started on TB treatment. MUWRP prioritized the integration of HIV and TB services, ensuring that 100% of registered TB cases had documented HIV status.

Efforts to ensure retention in care and viral load suppression among people living with HIV were continued. Overall, 98% of clients eligible for viral load testing were tested, with 97% of them achieving viral suppression. However, achieving optimal viral suppression among children remained a challenge, with a suppression rate of 93.7%. This drawback is attributed to various factors, including non-disclosure of HIV status, multiple caregivers, HIV stigma, medication fatigue, and lack of family support. To address these challenges, efforts were made to put all clients on optimal regimens, monitor non-suppressed clients for prompt management, utilize tracking tools for non-suppressed individuals, engage youth and adolescent peer support groups to offer peer support to struggling adolescents, and enroll non-suppressed clients into the integrated community Directly Observed Treatment Support (DOTS) model.

Health Information Systems Strengthening

Enhancing health information systems for health facilities continued to be a key focus. In this effort, MUWRP supported the implementation of two Electronic Medical Records (EMR) systems - Clinic Master (65%) and Uganda EMR (35%) - across 138 supported ART facilities, eventually covering 95% of the sites. These systems improved data collection and reporting capabilities across various program sectors.

Enhancing HIV/AIDS Service Delivery in Hard-To-Reach Areas

To enhance access to HIV/AIDS service delivery in hard-to-reach island areas on Lake Victoria, MUWRP acquired a new boat to complement one procured seven years ago. The boats facilitate the transportation of health workers and supplies to the islands of Koome and Buvuma. This investment has significantly contributed to overcoming geographical barriers and ensuring improved access to HIV prevention, testing, and treatment services in these challenging and underserved areas.

The US Ambassador to Uganda, H.E. William Popp, commissioning the new boat at Speke Resort Munyonyo, Kampala

5.0. The Emerging Infectious Diseases Program (EIDP)

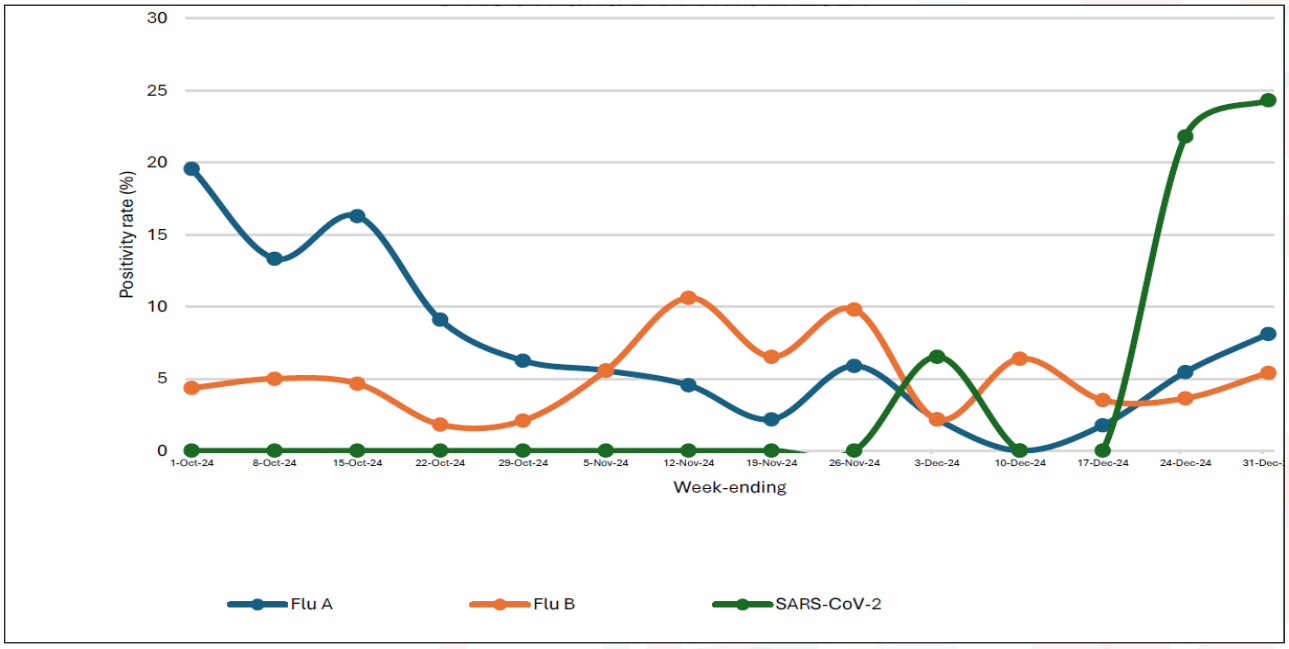
In 2024, MUWRP, through its Emerging Infectious Diseases Program (EIDP), continued to implement a comprehensive and multi-faceted approach to strengthen detection, monitoring, and response to human and zoonotic disease threats.

In collaboration with its partners - the Ministry of Health (MoH), Ministry of Agriculture, Animal Industry and Fisheries, Ministry of Defence and Veteran Affairs (MODVA), district health teams, and other stakeholders - MUWRP conducted surveillance for human and zoonotic respiratory pathogens, antimicrobial resistance, acute febrile vector-borne illnesses, and causes of acute gastroenteritis in civilian and military populations in Somalia.

Respiratory Pathogen Surveillance

Under human respiratory pathogen surveillance, EIDP collected over 2,000 samples that were analyzed for 13 different viral families. The results indicated that adenoviruses (11.16%) and influenza A (5.90%) were the most prevalent, with H3 being the predominant influenza A subtype. The Global Influenza Hospital Surveillance Network (GIHSN) supported influenza surveillance in Western Uganda which indicated that circulation of influenza A was 12.96%, with H1N1 being the most prevalent strain. Circulation of COVID-19 over the 12-month period was 3% in Western Uganda, compared to 1.9% in Central, Eastern, and Northern Uganda. Our findings underscore the importance of enhancing vaccination initiatives and reinforcing preventive measures.

Figure 3: Trend in the positive rate of influenza and SARS-CoV-2 between October and December 2024



Zoonotic Respiratory Pathogens' Surveillance

Under this surveillance activity, over 1,000 samples were collected from avian, porcine, and bat populations. The findings revealed a significant prevalence of Influenza A in poultry (49.5%) and swine (8.13%). The substantial presence of Avian Flu in poultry underscores the need for improved biosecurity measures at live bird markets, while the notable prevalence of Influenza A in swine may indicate a potential risk of zoonotic spillover.

Waterfowl (left) and swine (right) sample collections

Antimicrobial Resistance Surveillance

Antimicrobial resistance (AMR) remains a major health challenge in Uganda, complicated by a rise in multi-drug resistance strains to antibiotics such as oxazolidinones and carbapenems. In 2024, our AMR team isolated 1,274 significant bacteria from 4,465 clinical samples. The isolated pathogens included members of the ESKAPE group, as well as *Escherichia coli* and *Neisseria gonorrhoeae*. Specifically, the counts were: *E. coli* 458/1,274; *Staphylococcus aureus* 359/1,274; *Klebsiella pneumoniae* 147/1,274; *Enterobacter* species 48/1,274; *Enterococcus* species 92/1,274; *Pseudomonas aeruginosa* 76/1,274; *Acinetobacter baumannii* 50/1,274; and *Neisseria gonorrhoeae* 27/1,274. Approximately 13.0% (115/886) of the Gram-negative bacteria isolated were resistant to carbapenems, and 46.0% (165/359) of the *Staphylococcus aureus* isolates were phenotypically resistant to methicillin.

Overall, drug susceptibility patterns over the reporting period showed high resistance to antibiotics available in Uganda, with over 90% of the isolates tested for susceptibility to aminopenicillins being resistant. However, we also observed susceptibility of isolates to oxazolidinones, nitrofurantoin, and carbapenems. These findings highlight the need to strengthen national surveillance to address the AMR challenge through community-led approaches.

MUWRP-EIDP AMR experts observing sample inoculation processes at Gulu Reginal Referral Hospital

Acute Febrile Illness and Acute Gastroenteritis Surveillance

Under the Acute Febrile Vector-borne Illnesses surveillance, MUWRP collected samples from Uganda and Somalia, supporting both civilian and military populations. In Uganda, MUWRP analysed 461 samples, and malaria was the leading identifiable pathogen. Approximately 77.5% of all malaria cases were caused by Plasmodium falciparum. Additionally, Rift Valley Fever and flaviviruses were identified as significant contributors to febrile illnesses. In Somalia, malaria, dengue, leptospira, and Rift Valley Fever emerged as the most prevalent causes of AFI.

Our findings highlight ongoing public health threats posed by vector-borne diseases in the region. There is need for integrated prevention and surveillance strategies within a One Health framework to effectively control and reduce the impact of these illnesses.

Acute Gastroenteritis Surveillance

For the acute gastroenteritis project involving civilian and military populations in Somalia, surveillance indicated that *Salmonella* species, *Escherichia coli*, *Campylobacter* species, and *Adenovirus* were most prevalent. Overall antibiotic susceptibility testing showed sensitivity to most antibiotics, although resistance to chloramphenicol was observed in cases of *E. coli*-related enteritis.

Partnerships

During the year, the program consolidated its partnership with key stakeholders such as GEIS, WRAIR-A, MoH, MoDVA-UPDF, MAK-CoVAB, UWA, and MAAIF. We are proud to have hosted the Global Emerging Infections Surveillance (GEIS) Commandant and the Walter Reed Army Institute of Research-Africa (WRAIR Africa) leadership. Furthermore, we consolidated our relationship with surveillance sites including Kiruddu National Referral Hospital, Mulago National Referral Hospital, Jinja Regional referral Hospital, Gulu Regional Referral Hospital, Bwera Hospital, Bombo General Military Hospital, AUSSOM Level II Hospital, Somalia, Live bird markets, Swine abattoirs, and Districts where we conduct vector and bat sample collection. In the same vein, we had collaborative discussions with MoDVA-UPDF on how to strengthen research and global health security collaboration, and executed a working memorandum of Understanding with the Uganda Wildlife Authority (UWA).

MUWRP's leadership during a visit to the Uganda People's Defence Forces Medical Research Centre in Kampala

The US-DoD GEIS, HJF/MRI, and MUWRP EIDP teams after visiting the MUWRP-EIDP BSL II Laboratory at Makerere University CoVAB

6.0. The Austere Environment Consortium for Enhanced Sepsis Outcomes Program (ACESO)

In 2024, the ACESO program concentrated efforts on advancing sepsis research with a focus on novel technologies and expanding its clinical trial portfolio, while maintaining active stakeholder engagement to support health research and epidemic preparedness.

MUWRP continued to implement the sepsis observational study as the primary study at the ACESO site located within Fort Portal Regional Referral Hospital. The study aims to characterize the causes of severe illnesses in the region, describe current treatment approaches, identify biomarkers associated with infection severity and disease progression, investigate the long-term effects of severe illness, and determine predictors of mortality. In 2024, MUWRP successfully recruited 100 participants diagnosed with sepsis for the study, reaching 90% of the annual recruitment target, and maintaining a high retention rate, with 98% of participants completing in-person visits at Day 28 post-enrollment.

Furthermore, MUWRP conducted three sub-studies of the main sepsis observational study:

1. **Point-of-Care Ultrasound Scan (POCUS) Sub-study** - Aimed to explore how POCUS technology can assess the effects of sepsis on the cardiorespiratory system and predict long-term mortality. In 2024, MUWRP successfully enrolled 97 participants out of the targeted 100 and continues to enrol potential participants.
2. **Immunophenotyping Study Using the Elispot Device in Sepsis** - A laboratory-based research project seeking to identify immune modulators - substances in the blood that influence immune responses - in patients with bacterial and fungal sepsis. In 2024, MUWRP enrolled 36 participants out of a target of 60, and recruitment continues.

ACESO team attending ELISPOT protocol training led by ACESO Laboratory Lead, Ms Melissa Gregory (right)

3. **Tick-Borne Sub-study** - Conducted to determine the prevalence of tick-borne causes of sepsis and assess the sensitivity and specificity of proposed diagnostic tests. In 2024, MUWRP successfully collected all 500 required samples. In 2025, the focus will be on data cleaning and preparation for publication, with the goal of providing valuable insights into the role of tick-borne pathogens in sepsis diagnosis and management.

Under the ACESO program, MUWRP initiated the first-ever clinical trial at the Fort Portal site, titled "The PROTECT Study" (2024). The study aims to evaluate the safety and efficacy of the investigational drug Upamostat in treating patients with mild to moderate COVID-19. The trial is projected to last approximately 18 months and aims to enroll a total of 40 participants, with recruitment planned to begin in 2025.

By the end of 2024, MUWRP was preparing to implement two studies to be conducted at the ACESO site. These include: (1) the Tasso Plus Protocol, an improved version of the Tasso device based on insights from the original protocol; and (2) the Hantavirus Protocol, a sub-study within the Sepsis protocol aimed at investigating the role of Hantavirus in sepsis. Both studies are currently in the regulatory approval process.

MUWRP also closed two sub-studies conducted at the ACESO site. These include: (1) the Tasso sub-study, which evaluated the field application of a near-painless, self-administered capillary blood draw device for use in sepsis patients - aimed at minimizing discomfort associated with painful venipuncture and enhancing safety in highly infectious environments; and (2) the Modular Wireless Patient Monitoring System (MWPMS) sub-study, which validated the accuracy of wireless physiological sensors connected via Bluetooth to an internet-enabled database for measuring vital signs, comparing their readings to manual measurements to assess reliability and predictive capabilities. For both studies, MUWRP is currently working on data cleaning, analysis, and the preparation of results for publication in 2025.

The Modular Wireless Patient Monitoring System

The Tasso device

7.0. Administration

MUWRP's Administration Department plays a vital role in overseeing the organization's operational requirements. This department encompasses several functions, including human resources management, administration and operations, supply chain management, technology services, and finance management. In 2024, the department recorded the following accomplishments:

Human Resource Management

MUWRP recruited and onboarded 64 new employees, with 54% of these assigned to support PEPFAR program operations in the Luwero and Nakasongola districts. Additionally, the Human Resources section facilitated training for 81 staff in water safety and fire outbreak response protocols. Nine staff members received promotions across various departments.

MUWRP staff undergoing a fire fighting training

Fleet Management

MUWRP's fleet management in 2024 was effective and well-structured. This significantly enhanced operational efficiency resulting in cost savings, and ensured compliance with safety regulations. The fleet consisted of seventeen (17) motor vehicles, ten (10) motorcycles, and two (2) marine boats, all of which remained fully operational throughout the year. To mitigate risks, comprehensive insurance policies were applied to the entire fleet with timely renewals, guaranteeing sufficient coverage and protection. Furthermore, to optimize fuel usage, Fuel Management Standard Operating Procedures (SOPs) were diligently followed, including the consistent completion of travel log sheets. This disciplined approach led to a noticeable reduction in fuel expenditures, further enhancing the overall efficiency of fleet operations.

Supply Chain Management

Through the supply chain management unit, MUWRP procured services, works, and commodities to support institutional and programmatic operations in 2024. Notable accomplishments included remodeling the laboratory to create extra space for new equipment aimed at supporting advanced research; installing a passenger lift at the Nakasero head office to improve accessibility for staff with disabilities; and renovating the Safe Male Circumcision (SMC) theatre at Koja HC IV to expand medical service capacity. Furthermore, MUWRP undertook a comprehensive refurbishment of its head office and established satellite offices at Kawolo Regional Hospital and Buvuma Health Centre IV. These initiatives have markedly improved infrastructure, accessibility, storage capacity, and created a more conducive working environment.

Refurbished MUWRP head office block

Technology Support Services

MUWRP's technology support services facilitated the installation of Solar Hybrid Systems at four critical program sites, including the AFRICOS site, Ntenjeru Training Centre, Buvuma Laboratory, Cluster Office, and Kawolo Cluster Office. Each site now operates on a minimum 5 kW Solar Hybrid System. This initiative has reduced dependence on the national grid, ensured uninterrupted power for healthcare and research activities, and led to significant reductions in electricity costs, thus contributing to operational cost savings and sustainability.

Solar power system installed at Buvuma Health Centre IV Laboratory

Finance Management Finance Management

A significant achievement for MUWRP in 2024 was the full repayment of its commercial mortgage for the facility at its current headquarters on Plot 42 Nakasero Road, Kampala. This accomplishment marks a major step forward in MUWRP's infrastructure development and financial sustainability efforts.

Statement of Financial Position

	Notes	Actual 2024 US$		Actual 2023 US$
ASSETS				
Fixed Assets				
Leasehold Land	7.6	978,930		1,001,152
Buildings	7.6	368,187		470,937
		1,347,117		**1,472,089**
Current Assets				
Cash at bank and in hand	7.4	5,381,680		1,704,445
Receivables	7.5	1,416,004		1,578,428
Total Assets		**6,797,684**		**3,282,873**
TOTAL ASSETS		**8,144,801**		**4,754,962**
FUND BALANCE AND LIABILITIES				
Fund balance				
Accumulated Funds (unrestricted funds)	10.13	1,390,967		1,225,986
Non-Current liabilities				
Provision for Severance Costs	10.7 (a)	1,253,419		1,114,762
HJF Advance Payable	10.7	475,000		475,000
DFCU Bank Loan – Non-Current	10.9			64,742
		1,728,419		**1,654,504**
Current Liabilities				
Accrued expenses and other Payables	10.7 (b)	4,315,070		1,073,822
Short term loan from HJF	10.8	687,828		687,828
DFCU Bank Loan – Current	10.9	22,517		112,822
		5,025,414		**1,874,472**
TOTAL FUND BALANCE AND LIABILITIES		**8,144,801**		**4,754,962**

8.0. Participation in Scientific Events

In 2024, MUWRP participated in various events and meetings aimed at strengthening collaborations, sharing research advancements, and promoting public health initiatives. These included:

1. **The 2024 Developing Leadership and Innovation for Viral Eradication Research (DELIVER) Workshop –** held in Kampala in June 2024, provided a platform for research institutions to showcase their capabilities in HIV cure research. The workshop also offered an opportunity to reflect on lessons learned and discuss the resource support needed to strengthen their capacities to effectively support and participate in HIV cure research initiatives.

Group photo: DELIVER workshop delegates

2. **HJF Communications Workshop** held in Nairobi, Kenya, 29-30 April 2024. MUWRP was represented by three staff namely Richard Mayanja, the Communications Manager, Stephen Mugamba, the Stakeholder Engagement Coordinator and Hadijah Nabulya, Social and Behavior Change Communication Officer. The workshop deliberated on the current communication strategies and techniques to enhance organizational communication and visibility.

3. **Global Health Security Conference 2024 in Sydney, Australia – June 2024.** MUWRP's representative, Willy Kayondo, a Laboratory Supervisor, presented a poster titled "*Utilization of Prepositioned Research Laboratory Capabilities during the 2022 Sudan Virus Disease Outbreak in Uganda.*"

4. **Training on Next Generation Sequencing (NGS) and Bioinformatics using Minlon and Illumina platforms at the EIDP in July 2024.** MUWRP was represented by Sharon Kagabane, a Laboratory Technologist.

5. **Training on the 10X Chromium Sequencer at Weill-Cornell Medical University – October 2024**. MUWRP was represented by Raymond Mayanja, a Biomedical Scientist.

6. **Bio-Rad Clinical Diagnostic Symposium in Nairobi, Kenya – October 2024.** MUWRP was represented by Ronald Wasswa, the Laboratory Manager.

7. **Vaccinology Training held in Kigali, Rwanda** - October 2024. MUWRP was represented by Godfrey Zziwa, a PhD student working with the laboratory.

8. **ABSA International Conference on Biosafety and Biosecurity in Arizona, USA – November 2024**. MUWRP was represented by Harriet Nabirye, a Quality Control and Quality Assurance Coordinator, who also presented preliminary data on the SAFE-CU study.

9. **Makerere Bioethics Conference, 2024**, held in Kampala, 11-12 November 2024. MUWRP was represented by two staff: Hilda Mutebe, a Continuous Quality Improvement and Compliance Coordinator, and Agatha Mukanza, a Regulatory Officer. The conference deliberated contemporary issues in bio-ethics practice.

10. **Gilead Sciences HIV Global Community Advisory Group Meeting** held in Amsterdam, Netherlands, 19-12 November 2024. MUWRP was represented by Stephen Mugamba, the Stakeholder Engagement Coordinator. The event generated valuable insights into inclusive health literacy, peer-led advocacy, and culturally responsive community engagement models.

11. **National Health Digital Conference 2024** held in Kampala, Uganda, November 2024**.** Two MUWRP staff: Dr Okello Stephen and Francis Olebo made presentations on the implementation of Point of Care Ultrasound Scan and digital monitoring of vital signs technologies.

Dr. Okello Stephen (left) and Francis Olebo presenting during the National Health Digital Conference 2024

12. **American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting in New Orleans, USA - November 2024**. MUWRP was represented by Sharon Atukunda, a Senior Biomedical Scientist, and Dr. Chrisps Bakunda, a medical officer. Sharon made a poster presentation on "*Utilization of Prepositioned Research Laboratory Capabilities during the 2022 SUDAN Virus Disease Outbreak in Uganda",* while Chrispus made an oral presentation titled *"A Phase I /II Study of the Safety, Immunogenicity, and Efficacy of Sm-TSP-2/Alhydrogel with or without AP 10-701 for Intestinal Schistosomiasis in Healthy Ugandan Adults".*

13. **A candlelight event to commemorate World AIDS Day** was held in December 2024, at MUWRP head office in Kampala to honor individuals affected by HIV/AIDS and to acknowledge MUWRP's continuous efforts in addressing the disease since 2002. Attendees included MUWRP staff, members of the Community Advisory Board, research participants, and other stakeholders.

Candlelight commemoration at MUWRP head offices

14. **Data Protection Africa Summit 2024**, held in Kampala Uganda, 2-5 December 2024. MUWRP represented Jacqueline Namugabo, a Continuous Quality Improvement and Compliance Coordinator.

15. **9th National Cross Community Advisory Board (Cross CAB) Forum** held on 4-6 December 2024, in Masaka City, Uganda**.** MUWRP was represented by 17 members of the Community Advisory Board (CAB) from the Kayunga and Kampala research sites and MUWRP's community engagement staff. The forum underscored the importance of integrating local insights to inform research priorities that significantly affect health outcomes.

Group photo: MUWRP's representatives at the Cross-CAB forum

Publications

In 2024, MUWRP contributed to several scientific publications including the following:

1. **Byarugaba, D.K., Osman, T.S., Sayyouh, O.M., Wokorach, G., Kigen, C.K., Muturi, J.W., Onyonyi, V.N., Said, M.M., Nasrat, S.A., Gazo, M. and Erima, B.,** 2024. Genomic epidemiology of multidrug-resistant Escherichia coli and Klebsiella pneumoniae in Kenya, Uganda, and Jordan. *Emerging Infectious Diseases*, *30*(Suppl 2), p.S33.

2. **Eneku, W., Erima, B., Byaruhanga, A.M., Cleary, N., Atim, G., Tugume, T., Ukuli, Q.A., Kibuuka, H., Mworozi, E., Tweyongyere, R. and Douglas, C.E.,** 2024. Molecular detection of Coxiella burnetii in ticks collected from animals and the environment in Uganda. *Zoonoses and Public Health*, *71*(8), pp.869-875.

3. **Le Van, A., Rahman, N., Sandy, R., Dozier, N., Smith, H.J, Martin, M.J., Bartlett, K.V, Harncharoenkul, K., Nanava, A., Akhvlediani, T., Rios, P., Mehta, S.D, Agingu, W., Byarugaba, D.K, Wabwire-Mangen, F., Kibuuka, H., Erima, B., Kabatasi, H.O., Attram, N., Peerapongpaisarn, D., Oransathit, W., Oransathit, W., Suksawad, U., Lurchachaiwong, W., Sriplienchan, S., Boonyalai, W., Somsri, M., Chaitaveep, N., Jerse A., and Garges, E.,** 2024. Common Patterns and Unique Threats in Antimicrobial Resistance as Demonstrated by Global Gonococcal Surveillance. *Emerging Infectious Diseases*, *30*(Suppl 2), p.S62.

4. **Wokorach, G., Erima, B., Najjuka, F., Kiyengo, J., Kibuuka, H., Musinguzi, A.K., Wabwire-Mangen, F. and Byarugaba, D.K.,** 2024. Draft genome sequence of Staphylococcus urealyticus strain MUWRP0921, isolated from the urine of an adult female Ugandan. *Microbiology Resource Announcements*, *13*(1), pp.e00817-23.

5. **Wokorach, G., Erima, B., Alafi, S., Kabatesi, H.O., Muhindo, J.T., Najjuka, F., Kiyengo, J., Kibuuka, H., Musinguzi, A.K., Wabwire-Mangen, F. and Byarugaba, D.K.,** 2024. Draft genome sequence of Acinetobacter haemolyticus strain MUWRP1017 isolated from the pus of a female inpatient at Bwera General Hospital in Uganda. *Microbiology Resource Announcements*, *13*(9), pp. e00566-24.

6. **Mwesigwa, B., Sawe, F., Oyieko, J., Mwakisisile, J., Viegas, E., Akintunde, G.A., Kosgei, J., Kokogho, A., Ntinginya, N., Jani, I., Shukarev, G., Hooper, J.W., Kwilas, S.A., Ward, L.A, Rusnak, J., Bounds, C., Overman, R., Badorrek, C.S., Eller, L.A., Eller, M.A., Polyak, C.S., Moodley, A., Tran, C.L., Costanzo, M.C., Leggat, D.J., Paquin-Proulx, D., Naluyima, P., Anumendem, D.N., Gaddah, A., Luhn, K., Hendriks, J., McLean, C., Douoguih, M., Kibuuka, H., Robb, M.L., Robinson, C., Ake, J.A.** Safety and Immunogenicity of Accelerated Heterologous 2-Dose Ebola Vaccine Regimens in Adults With and Without HIV in Africa. Clin Infect Dis. 2024 Oct 15;79(4):888-900. doi:10.1093/cid/ciae215. PMID : 38657084.

7. **Oboho, I.K., Esber, A.L., Dear, N., Paulin, H.N., Iroezindu, M., Bahemana, E., Kibuuka, H., Owuoth, J., Maswai, J., Shah, N., Crowell, T.A., Ake, J.A., Polyak, C.S.; AFRICOS Study Group.** Advanced HIV disease in East Africa and Nigeria, in The African Cohort Study. J Acquir Immune Defic Syndr. 2024 May 1;96(1):51-60. doi:10.1097/QAI.0000000000003392. Epub 2024 Apr 10. PMCID: PMC11008437.

8. **Happe, M., Hofstetter, A.R., Wang, J., Yamshchikov, G.V., Holman, L.A, Novik, L., Strom, L., Kiweewa, F., Wakabi, S., Millard, M., Kelley, C.F., Kabbani, S., Edupuganti, S., Beck, A., Kaltovich, F., Murray, T., Tsukerman, S., Carr, D., Ashman, C., Stanley, D.A., Ploquin, A., Bailer, R.T., Schwartz, R., Cham, F., Tindikahwa, A., Hu, Z., Gordon, I.J., Rouphael, N., Houser, K.V., Coates, E.E., Graham, B.S., Koup, R.A., Mascola, J.R., Sullivan, N.J., Robb, M.L., Ake, J.A., Lyke, K.E., Mulligan, M.J., Ledgerwood, J.E., Kibuuka, H.; VRC 208 and RV 422 study team**. Heterologous cAd3-Ebola and MVA-EbolaZ vaccines are safe and immunogenic in US and Uganda phase 1/1b trials. NPJ Vaccines. 2024 Mar 29;9(1):67. doi: 10.1038/s41541-024-00833-z. PMID: 38553525; PMCID: PMC10980745.

9. **Puri A, Pollard AJ, Schmidt-Mutter C, Lainé F, PrayGod G, Kibuuka H, Barry H, Nicolas JF, Lelièvre, J,D, Sirima ,S,B, Kamala, B,, Manno, D, Watson-Jones, D., Gaddah, A., Keshinro, B., Luhn, K., Robinson, C., Douoguih, M. EBL4001 Study Group**. Long-Term Clinical Safety of the Ad26.ZEBOV and MVA-BN-Filo Ebola Vaccines: A Prospective, Multi-Country, Observational Study. Vaccines (Basel). 2024 Feb 17;12(2):210. doi: 10.3390/vaccines12020210. PMID: 38400193; PMCID: PMC10892482.

10. **Esber, A.L., Colt, S., Jian, N., Dear, N., Slike, B., Sing'oei, V., Maswai, J., Iroezindu, M., Bahemana, E., Kibuuka, H. and Polyak, C.S.** Persistent low-level viraemia is associated with non-infectious comorbidities in an observational cohort in four African countries. JAIDS Journal of Acquired Immune Deficiency Syndromes, pp.10-1097.

11. **Kemp, C.G., Pence, B.W., Velloza, J., Concepcion, T., Moitra, M., Iroezindu, M., Bahemana, E., Kibuuka, H., Semwogerere, M., Owuoth, J., Maswai, J., Langat, R., Esber, A.L., Dear, N.F, Parikh, A., Crowell, T.A, Ake, J.A., Polyak, C.S., Collins, P.Y.; AFRICOS Study Group** Cumulative exposure to depressive symptoms and all-cause mortality among adults with HIV in Kenya, Nigeria, Tanzania, and Uganda AIDS. 1;38(8):1228-1236. doi: 10.1097/QAD.0000000000003891. Epub 2024 Mar 19. PMID: 38507586.

12. **Wailagala, A., Blair, P. W., Kobba, K., Kayiira, M., Aanyu-Tumukahebwa, H., Kiiza, D., Sekikongo, M. T., Klena, J. D., Waitt, P., Bahatungire, R. R., Kyobe, H. S., Atwine, D., Adaku, A., Bodo, B., Kirenga, B., Boore, A., Clark, D. V., Kaggwa, D., Gregory, M., Kabweru, W., Kayondo, W., Mbabazi, S. K., Kibuuka, H., Kimuli, I., Mulei, S., Mutegeki, M., Batibwe, E., Mwebesa, H., Naluyima, P., Okello, S., Tumusiime, A., Montgomery, J., Vasireddy, V., Olaro, C., Wayengera, M., & Lamorde, M. (2024).** *Sudan Virus Disease among Health Care Workers, Uganda, 2022*. *New England Journal of Medicine, 391*(3), 285–287. https://doi.org/10.1056/NEJMc2313183

13. **Shah, N., Crowell, T.A., Hern, J., Anyebe, V., Bahemana, E., Kibuuka, H., Singoei, V., Maswai, J., Parikh, A., Duff, E.R., Cavanaugh, J.S., Romo, M.L., Ake, J.A., Reid, M., AMB Nkengasong, J.N**. The Transformative Impact of the African Cohort Study (AFRICOS) towards reaching HIV 95-95-95 Goals in sub-Saharan Africa. American Journal of Tropical Medicine and Hygiene (AJTMH). **2024**.

14. **Esber, A.L., Colt, S., Jian, N., Dear, N., Slike, B., Sing'oei, Maswai J., Iroezindu, M., Bahemana, E., Kibuuka, H., Polyak, C.S., Streeck H., Shah, N., Crowell, T.A., Ake J,A**. Persistent Low-Level Viremia is Associated with Noninfectious Comorbidities. JIAS. **2024.** Doi: 10.1002/jia2.26316. PMID: 39189824.

15. **Scott, R., Olsen, C.H., Crowell, T.A., Mancuso, J.D., Shah, N., Kibuuka, H., Maswai, J., Owuoth, J., Sing'oei, V., Bahemana, E., Anyebe, V., Parker, Z., Ake, J.A., Lee, E.H**. Characterizing multimorbidity and the risk for hospitalization among people living with HIV from the African Cohort Study.

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