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**MBALE CLINICAL RESEARCH
INSTITUTE**

IDEA FELLOWSHIP

NEWSLETTER

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FIELD EPIDEMIOLOGY

**WHY THE IDEA
FELLOWSHIP?**

PARTNERSHIPS

**THE NEED FOR
PARTNERSHIPS TO
CONTROL PUBLIC HEALTH
EMERGENCIES**

RESEARCH

**BUILDING THE BODY OF
KNOWLEDGE WITH FIELD
EPIDEMIOLOGY TRAINING**



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EDITORIAL



Editor in Chief
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Welcome to our inaugural newsletter! We are thrilled to share with you the latest developments in our mission to make a positive impact in the field of infectious diseases epidemiology.

First, we would like to express our gratitude to all of our partners and volunteers who have continued to support us through this journey. Your generosity and dedication have allowed us to keep this program running smoothly and effectively.

In terms of our recent activities, we successfully held the "First Annual Conference on Emerging and Re-Emerging Infectious Diseases in Africa (ACERIA Conference)" under the theme: Enhancing stakeholders engagement and public awareness in emerging and re-emerging outbreaks.

The vision of the IDEA fellowship program is to develop a critical mass of field epidemiologists in Africa equipped with the necessary knowledge, skills, and competencies in early recognition, surveillance, control, and prevention of emerging and re-emerging infectious diseases in Africa. We are also excited to announce that our pioneer cohort of epidemiologists is nearing training completion and will be passed out in October 2024.

Finally, we want to remind everyone that this program relies on the kindness and support of global community. If you are able to donate your time or resources, please do not hesitate to reach out to us. Together, we can make a real difference in the detection and control of infectious diseases. Thank you for your continued support! Enjoy this maiden newsletter!

IDEA FELLOWSHIP PROGRAM COORDINATOR'S MESSAGE



It is with great pleasure and enthusiasm that I welcome you to the first edition of the IDEA Fellowship Newsletter. This publication marks a significant milestone in our journey to foster training of infectious disease field epidemiologists in Uganda.

The IDEA Fellowship Program was established with a visionary goal: to nurture and empower field epidemiologists as leaders in surveillance, response, and scientific reporting of emerging and re-emerging infectious diseases in Uganda, and Africa at large. The programme combines both theoretical and practical training in epidemiology and biostatistics.

Highlights of this Edition:

Feature Stories: Highlighting disease outbreaks during the training period and the responses mounted by our fellows as part of a team in conjunction with responders from the Ministry of Health and collaborating agencies. In addition, these stories also describe research projects and initiatives led by our fellows, showcasing their dedication to advancing knowledge and improving infectious disease surveillance and response.

Spotlight on Collaborative Research: Focusing on impactful collaborations between our fellows and esteemed institutions, including our recent partnership with the Uganda National Health Laboratory Services.

IDEA Fellowship Projects: Insights into the diverse and dynamic projects undertaken by our fellows, supported by expert mentorship and rigorous project management to ensure their success and sustainability.

Postgraduate Supervision and Capacity Building: Information on our initiatives to provide robust academic support and capacity-building opportunities, ensuring our fellows are well-prepared to excel in their respective fields.

As we celebrate these achievements, we also look forward to the future with a renewed commitment to our mission. The IDEA Fellowship Programme is not just a platform for academic and professional growth; it is a vibrant community of responders to infectious disease outbreaks in Uganda.

I extend my heartfelt gratitude to EDCTP, our funders, and all our fellows, mentors, partners, and supporters who have contributed to the success of this programme. Your dedication, hard work, and collaborative spirit are the driving forces behind our shared accomplishments.

In closing, I invite you all to engage with the content of this newsletter, share your feedback, and continue to be active participants in this transformative journey. Together, we can build a brighter, healthier future through capacity building and training of field epidemiologists in Uganda and Africa at large.

**Professor Peter Olupot-Olupot
MPH, PhD, SRF, FUNAS, FRCP(Lon)**

IDEA FELLOWSHIP PROGRAM SECRETARIAT'S MESSAGE



Located at the Mbale Clinical Research Institute, the Secretariat acts as a central hub for communication, resource allocation, and program monitoring. It ensures that the curriculum, which blends theoretical and practical training in infectious disease epidemiology and biostatistics, is delivered effectively and that fellows receive the necessary mentorship and academic support at Busitema University.

The IDEA Fellowship Secretariat serves as the operational backbone of the IDEA Fellowship Program, ensuring the seamless execution of its vision to train and empower infectious disease field epidemiologists in Uganda and beyond. Established to provide robust administrative, financial and logistical support, the Secretariat is pivotal in managing the day-to-day activities of the fellowship, coordinating among fellows, mentors, and partners, and overseeing the implementation of both training and grant management activities.

The Secretariat also plays a crucial role in fostering collaborations with esteemed institutions and partners both locally and internationally. By maintaining these strategic partnerships, the Secretariat enhances the fellowship's impact, ensuring that fellows are well-equipped to respond to disease outbreaks and contribute to public health advancements.

In addition, the Secretariat is responsible for organizing events, such as workshops, seminars, and conferences, which provide fellows with opportunities to present their work, share experiences and for networking, professional development, and knowledge exchange. Through its dedicated efforts, the IDEA Fellowship Secretariat ensures the success and sustainability of the programme, driving forward its mission to build a skilled workforce of field epidemiologists in Uganda and Africa.

Adyango Catherine
IDEA Secretariat

ABOUT THE IDEA FELLOWSHIP PROGRAM

Uganda faces significant challenges in managing emerging and re-emerging infectious diseases (EREIDs) due to its vulnerable health system, porous borders, and high burden of zoonotic diseases. The country's current epidemiological capacity, particularly in field epidemiology, is inadequate for addressing these challenges effectively. The IDEA Fellowship program addresses these gaps by offering specialized, hands-on training in infectious disease epidemiology and biostatistics, directly aligning with national needs.

The program offers a robust, mixed-methods approach to training, combining didactic instruction with extensive fieldwork. This ensures that fellows are not only knowledgeable but also practically skilled in key areas like disease surveillance, outbreak investigation, and data-driven decision-making. The program's emphasis on real-world application through field projects in diverse settings, including refugee camps and cross-border regions, further strengthens its relevance and impact.

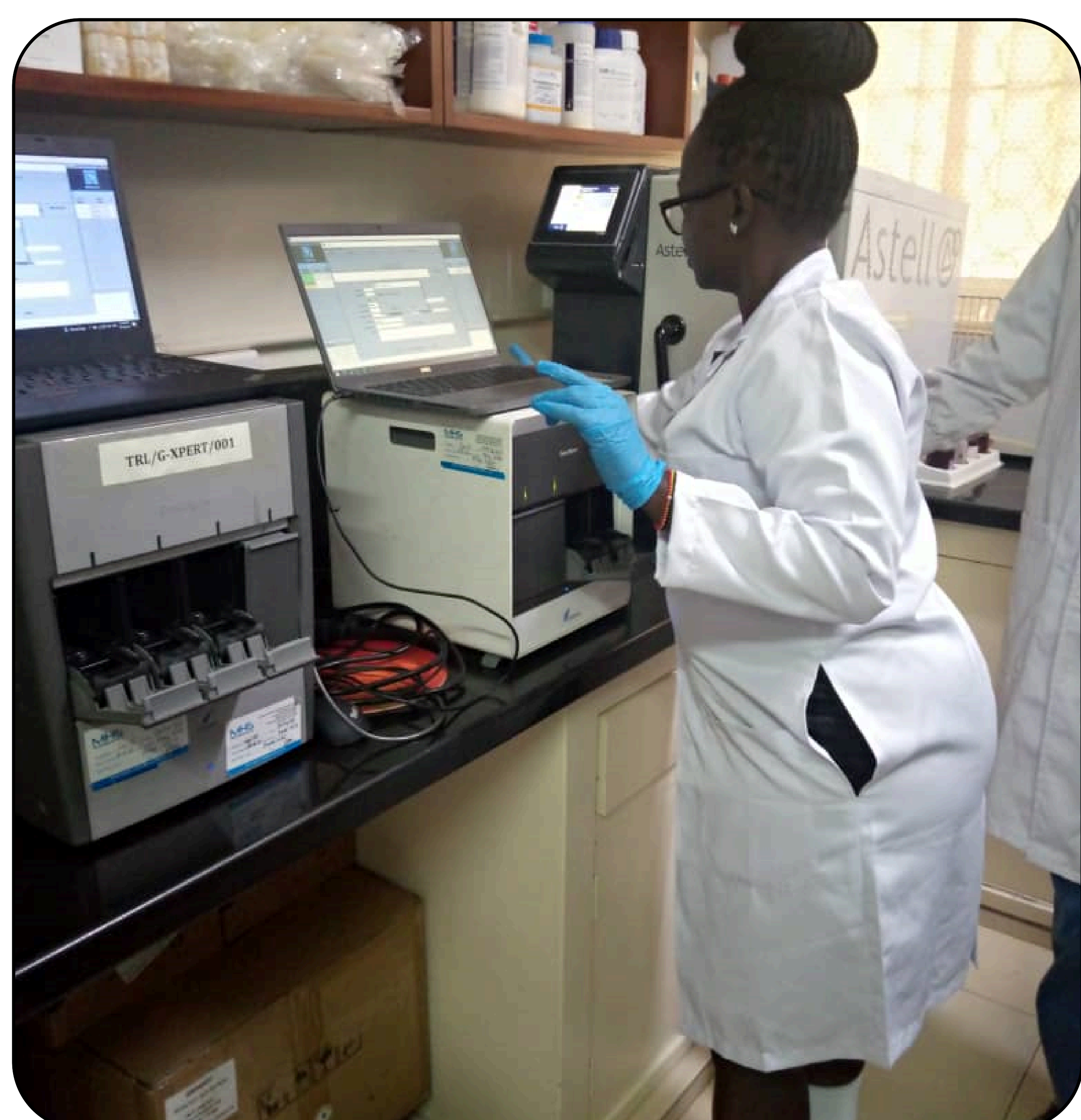


THE PICTURE ABOVE SHOWS THE EPI FELLOWS PERFORMING MICROBIOLOGY TECHNIQUES DURING LABORATORY FIELD INVESTIGATION.

The IDEA Fellowship program is supported by a strong consortium of key stakeholders in Uganda's health sector, including government bodies, research institutions, and international partners. This collaborative approach ensures that the program is well-integrated into Uganda's broader public health infrastructure, enhancing its sustainability and impact. The involvement of institutions like the Uganda National Public Health Institute and the Uganda Virus Research Institute provides a solid foundation for both the training and subsequent deployment of fellows in critical areas.



THE PICTURE ABOVE SHOWS ONE OF THE EPI FELLOWS AND A PROFESSOR DURING DIDACTIC TRAINING.



THE PICTURE ABOVE SHOWS ONE OF THE EPI FELLOWS PARTICIPATING IN SAMPLE COLLECTION DURING OUTBREAK INVESTIGATION.

ABOUT THE IDEA FELLOWSHIP PROGRAM

The program is aligned with WHO recommendations for improving epidemic response capacities, particularly in low-resource settings like Uganda. By focusing on building a critical mass of trained field epidemiologists, the IDEA Fellowship directly supports Uganda's efforts to meet the International Health Regulations (IHR 2005) and strengthen its public health emergency response capabilities.

The IDEA Fellowship is designed not just as a one-time training program but as a sustainable capacity-building initiative that will have a long-term impact on Uganda's health system. By creating a career track in infectious disease field epidemiology and enhancing the research capacity of participating institutions, the program aims to establish a foundation for ongoing improvements in disease control and public health in Uganda and the broader region.

The program's curriculum is innovative and targeted, focusing on emerging issues like antimicrobial resistance, biosafety, bioinformatics, and digital health. This forward-looking approach ensures that fellows are equipped to handle current and future challenges in infectious disease epidemiology, making them valuable assets to Uganda's health system.

In summary, the IDEA Fellowship Program is well-justified given Uganda's urgent need for enhanced capacity in infectious disease epidemiology, the comprehensive and practical nature of the training, and the program's alignment with both national and international health priorities.

First Cohort of IDEA IDFE Fellows



Akello Sarah Rachael
BSWASA, CERT-IN ADMIN LAW, DPAM, MPH & IDEA Fellow



Nsubuga Sydney
Dip Med, BSc, MPH & IDAE Fellow



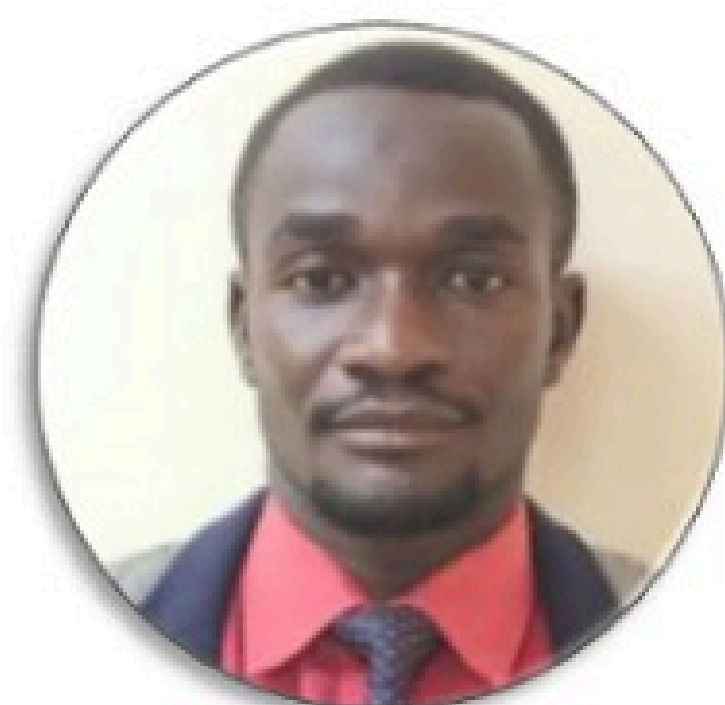
Mr. Alunyo Jimmy Patrick
BDV, MPH & IDEA Fellow



Ms. Birungi Patience
BCP, MHSR & IDEA Fellow



Dr. Paasi George
MBCh.B, MPH & IDEA Fellow



Dr. Okalebo Charles
B.PHARM, MPH & IDEA Fellow



Mr. Bogere Mathias Ngobi
Bsc PH, MPH & IDEA Fellow



Mr. Madenje Micheal
DCMCH, BHSM, MPH & IDEA Fellow



Ms. Nabaggala Grace Ssanyu
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Mr. Opolot Godfrey
BSc. PH, Dip.EH, PG. DHSM,
MSc. Epi & Bios tat & IDEA Fellow



Dr. Okiror William
MBCh.B, MPH & IDEA Fellow



Ms. Aujo Deborah
BBLT, DPPM, MPH & IDEA Fellow



Mr. Oposhia Joseph
Committee member
BEHS, MPH & IDEA Fellow

PARTNERSHIPS FOR THE IDEA FELLOWSHIP PROGRAM

The need for partnerships in the IDEA Fellowship Program arises from the complexity and multidisciplinary nature of infectious disease field epidemiology and biostatistics. These partnerships are crucial for several reasons:

1. Comprehensive Training and Resource Sharing

a) Specialized Expertise:

The IDEA Fellowship Program aims to provide world-class, hands-on training in infectious disease field epidemiology. This requires access to a wide range of expertise, facilities, and resources that no single institution can provide on its own. Partnerships enable the pooling of knowledge, expertise, and infrastructure necessary to deliver high-quality training.

b) Access to Training Facilities: Collaborating with institutions that have specialized laboratories, biobanks, and clinical research facilities, such as the Central Public Health Laboratory (CPHL) and Mbale Clinical Research Institute (MCRI), ensures that fellows have access to the necessary tools and environments for practical learning.

2. Capacity Building and Sustainability

a) Strengthening National Health Systems: By partnering with key national and regional institutions, the IDEA Fellowship Program can directly contribute to strengthening the capacity of Uganda's Ministry of Health and other public health bodies. This partnership approach ensures that the program is aligned with national health priorities and sustainable beyond the initial fellowship period.

b) Creating a Critical Mass of Trained Epidemiologists: Partnerships with academic and research institutions enable the training of a larger number of epidemiologists, which is essential for building a critical mass of professionals capable of responding to infectious disease outbreaks in Uganda and the region.

3. Synergizing Efforts and Enhancing Impact

a) South-South and South-North Collaborations:

The IDEA Fellowship Program involves both local and international partners, such as Busitema University, Uganda National Public Health Institute, and The Open University in the UK. These collaborations allow for the exchange of knowledge and best practices, enhancing the quality and impact of the program. It also promotes collaboration across regions, which is essential for addressing cross-border health challenges.

b) Integration with Ongoing Health Initiatives: Partnering with organizations already engaged in field epidemiology, such as the Uganda Ministry of Health and Uganda National Institute of Public Health, helps integrate the fellowship program into broader public health initiatives. This alignment ensures that the training provided is relevant and immediately applicable in real-world settings.

4. Funding and Support

Partnerships are essential for securing the financial and technical support needed to implement the program effectively. The IDEA Fellowship Program is funded by EDCTP2 programme supported by the European Union (grant number EDCTP-II CSA2020E). The views and opinions expressed herein in this IDEA Fellowship Newsletter do not necessarily state or reflect those of EDCTP.

1. Key Partnerships for IDEA Fellowship Program:

I. Busitema University: The lead institution for the fellowship, providing academic oversight and awarding the Master's degree.

II. Uganda National Public Health Institute: A key partner in integrating the fellowship with national public health strategies.

III. Ministry of Science, Technology and Innovation: Provides governmental support and alignment with national health priorities.

IV. Uganda National Health Laboratory and Diagnostic Services: Offers laboratory facilities and expertise for training in disease detection and surveillance.

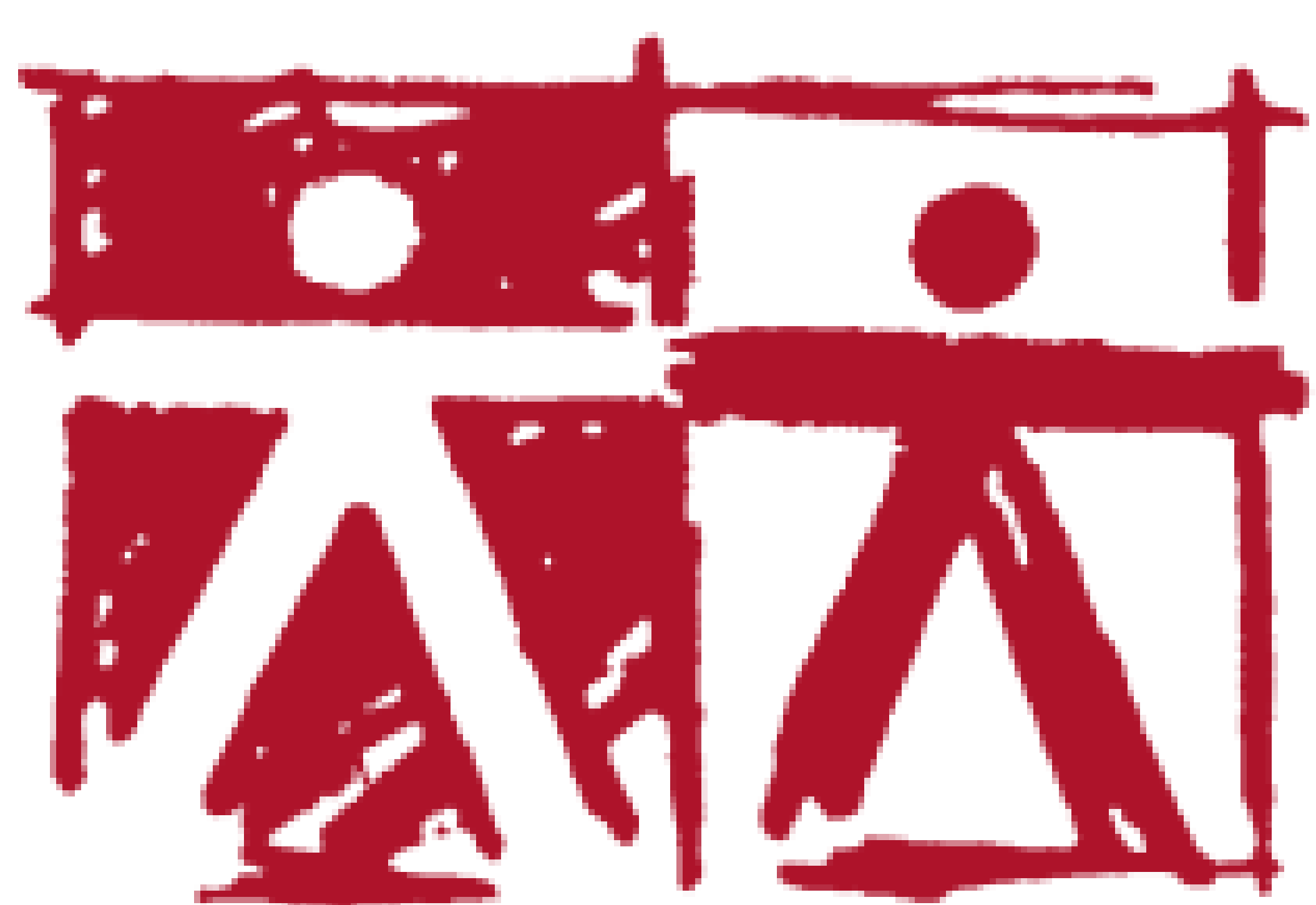
V. Uganda Virus Research Institute: Contributes to research and training in virology and infectious diseases.

VI. Mbale Clinical Research Institute (MCRI): Provides practical training facilities, including clinical trials and biobank access.

VII. Infectious Diseases Institute: Supports the program through its expertise in infectious disease management and research.

VIII. The Open University (UK): A Northern partner contributing to the curriculum development and academic rigor of the program.

These partnerships collectively ensure that the IDEA Fellowship Program is well-rounded, sustainable, and capable of producing skilled epidemiologists who can address Uganda's and the region's infectious disease challenges.



E D C T P

This newsletter was produced by the IDEA Fellowship training program which is part of the EDCTP2 programme supported by the European Union (grant number EDCTP2 CSA2020E). The views and opinions of authors expressed herein do not necessarily state or reflect those of EDCTP.

THE FIRST ANNUAL CONFERENCE ON EMERGING AND RE-EMERGING INFECTIOUS DISEASES IN AFRICA (ACERIA CONFERENCE)

The first ACERIA Conference held in September 2023 at the Mbale Clinical Research Institute [(MCRI); www.mcri.ac.ug] in Eastern Uganda, was a significant gathering of professionals dedicated to addressing pressing health challenges.

The attendees represented a diverse spectrum of expertise and backgrounds, emphasizing the multifaceted nature of the challenges at hand. The experts who made presentations provided insights into the current challenges, solutions, and future directions in the realm of infectious disease control. The conference was structured around several subthemes, including:

- a).Emerging and Re-emerging infections
- b).Detection of outbreaks
- c).Risk communication



A CROSS-SECTION OF THE PARTICIPANTS OF THE ACERIA CONFERENCE

These sub-themes provided a structured approach, allowing participants to explore each area in depth, share insights, and collaborate on potential solutions. Various presentations and sessions were organized, covering a range of topics from infectious disease trends to capacity-building initiatives.



THE PICTURE ABOVE SHOWS ONE OF THE EPI FELLOWS MAKING A PRESENTATION DURING A CONFERENCE.

THE INAUGURAL AFRICAN-RUSSIAN INTERNATIONAL CONFERENCE ON COMBATING INFECTIOUS DISEASES: A NEW ERA OF COLLABORATION.



EPI FELLOW GEORGE PAASI MAKING A PRESENTATION AT THE JOINT AFRICAN-RUSSIAN INTERNATIONAL CONFERENCE

In a historic move towards global health security, the first joint African–Russian International Conference on Combating Infectious Diseases was held this past month, marking a significant step in international cooperation. This pioneering event brought together leading experts, policymakers, and researchers from across Africa and Russia to address the pressing challenges of infectious diseases, with a focus on forging stronger partnerships and enhancing collaborative efforts in research, prevention, and treatment. The conference, hosted in Kampala, aimed to foster dialogue and collaboration between African and Russian health professionals and researchers. It featured a series of keynote speeches, panel discussions, and breakout sessions covering a wide range of topics relevant to infectious disease control.

Key areas of focus included the current state of infectious diseases in both regions, advancements in diagnostic technologies, vaccine development, and strategies for improving healthcare infrastructure. Four of our fellows presented key research findings on Ebola, MDR-TB and Measles. One of the key outcomes of the conference was the establishment of several joint research initiatives aimed at tackling infectious diseases prevalent in both regions. Researchers from the Russian Academy of Sciences and various African universities announced new collaborative projects focused on developing vaccines and therapeutics for diseases such as malaria and HIV/AIDS which continue to be a major health burden in Africa.

PUBLIC HEALTH EMERGENCIES IN UGANDA IN THE LAST TWELVE MONTHS



GRACE NABAGALA - EPI FELLOW, IDEA

Measles Outbreak investigation in Kikuube District, Uganda

A measles outbreak in Kikuube District prompted urgent action from health officials. The crisis began on April 19, 2024, when a private clinic in Rwamutonga Village reported a surge in children with measles symptoms. By April 27, five confirmed cases led to an official outbreak declaration.

Outbreak Investigation and Findings

The outbreak investigation, led by local and national health teams, focused on determining the outbreak's scope, describing case epidemiology, identifying transmission risk factors, supporting the response, and recommending preventive measures. By May 27, 82 cases were identified, with 48 analyzed in detail:

- Gender: 52% male, 48% female.
- Nationality: 71% Ugandans, 29% Congolese.
- Age: 85.4% were aged 9 months and above.
- Vaccination: 53.7% of eligible children had not received the Measles-Rubella vaccine.

The case fatality rate was 6.3%, with three deaths reported. The outbreak was concentrated in Bugambe sub-county, an area with limited healthcare access and high population mobility.

Major Outbreaks of 2023 and 2024

Due to vulnerabilities owing to the location of Uganda in the Yellow fever endemic zone, Meningitis high-risk area, Zika belt area and consistent refugee population movements, global traffic movements, environmental degradation through deforestation, the country is prone to Public Health emergencies.

In the period between January 2023 and May 2024 Uganda recorded ten outbreaks including Rift Valley fever, Cholera, Aeromonas, Measles, Anthrax, Viral Conjunctivitis (Red eyes), Malaria Upsurge, Crimean Congo Hemorrhagic fever (CCHF), Covid-19, and Multidrug-resistant TB (MDR-TB).

A few IDEA fellows participated in these outbreaks' investigations underscoring the need for training more of these professionals in Uganda and the region.

Challenges and Public Health Actions

The response highlighted several challenges:

- Mixing of measles and non-measles cases in pediatric wards.
- Inadequate isolation and infection control measures.
- Lack of screening at entry points between the district and refugee settlements.

To combat the outbreak, health officials intensified routine immunizations, conducted mass vaccination campaigns, enhanced active case finding, and redistributed essential medical supplies.

Recommendations

Key recommendations include a district-wide mass measles vaccination campaign, resumption of outreach programs by local health centers, and intensified active case finding to ensure timely isolation and management of new cases. These efforts aim to control the outbreak and prevent future occurrences, protecting the health of Kikuube District's residents.



THE PICTURE ABOVE SHOWS EPI FELLOWS ABSTRACTING DATA DURING OUTBREAK INVESTIGATION.

RESEARCH PROJECTS FOR THE IDEA FELLOWS

Serial	Name of Fellow	Research Topic
1	Nabaggala Grace Ssanyu	Spatio-Temporal Trends of Measles Outbreaks and Vaccine Coverage in Uganda from 2018 To 2023: An Ecological Study
2	Patience Birungi	Spatio-Temporal Distribution of Tuberculosis Among Contacts in Uganda, 2020-2023. Analysis Of National Surveillance Data.
3	Opolot Godfrey	Epidemiology And Factors Associated With MDR-TB Among People Living With HIV/AIDS At Soroti Regional Referral Hospital: A Nested Case-Control Study.
4	Oposhia Joseph	An Outbreak of Aeromonas Hydrophila Infections in Bukasami Cell, in Jinja, Uganda, 2024: A Retrospective Study
5	Mathias Ngobi Bogere	Risk Factors for Drug Resistant Tuberculosis in Ankole Region, A Cattle Corridor In South Western Uganda- A Mixed Methods Study
6	Akello Sarah Rachael	Geospatial Mapping for Multi-Drug-Resistant TB In Uganda: Ecological Study
7	Paasi George	Determining The Transmission and Spatio-Temporal Dynamics of The Recurrent Ebola Outbreaks in Uganda from 2000 to 2023: An Epidemiological Study.
8	Micheal Mandenje	Evaluating Measles response using the 7-1-7 Metric a Case of Kyenjojo District, Western Uganda.
9	Deborah Aujo	Factors For Cholera Outbreak in Namayingo District Uganda 2023: Case Control Study
10	Alunyo Jimmy Patrick	Risk Factors Associated with Development of Blackwater Fever in Pediatric Patients in Eastern Uganda
11	Charles Benard Okalebo	Spatio-Temporal Epidemiology of Malaria in Relation to Malaria Control Interventions in Uganda.
12	Okiror William	Epidemiological Surveillance of Rabies Outbreak in Bukwo District,2023: A mixed Methods Study
13	Sydney Nsubuga	Prevalence, Distribution, Trends, and Associated Factors of Recent HIV Infection in The Pre-Elimination Era: A Retrospective Study of TASO Data in Uganda

NOVEL CASE FINDING FOR DRUG RESISTANT TB AMONG PASTORAL COMMUNITIES, A CASE OF KAZO DISTRICT, ANKOLE REGION, SOUTH-WESTERN UGANDA

Bogere Mathias Ngobi^{1,2,4}, Kasibula Ali^{1,4}, Sylvia Matovu^{1,4}, Ochieng Gerald Allen^{1,4}, Openy Abraham^{1,4}, Mweteise Protaze³, Tweheyo Samuel³, Nkoyooyo Abdallah^{1,4}, Aluma George Lwanga^{1,4}, Peter Olupot-Olupot²

1 The AIDS Support Organization (TASO) Uganda, Kampala Uganda

2 IDEA: Consortium for Development of Sustainable Research Based Fellowship Training on Infectious Disease Epidemiology and Biostatistics in Africa, Busitema University

3 Kazo District Local Government, Uganda.

4 USAID Local Partner Health Services (LPHS) Ankole, TASO Uganda

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Background:

Uganda is one of the 30 countries with a high burden of TB in the world. According to the 2014-2015 National TB prevalence survey, 39% of people with cough for two or more weeks did not seek treatment. Similarly, there was an estimated 1500 people (range 820-2300) with Drug resistant TB (DR TB) in 2018 but only 34% were notified. While Ankole region in South-Western Uganda detected 36 DR TB cases from April 2022 to March 2023, Kazo District, a majorly pastoral community diagnosed 2. Additionally, in 2021/2022, Kazo District had a case detection rate of 46% (Target 90%). There was stigma concerning TB due to its association with HIV in the community. There was need to improve TB case finding through finding missing people with TB.

Methods:

Microplanning meetings and community engagement were held with the District Health Team and USAID LPHS Ankole (TASO). A review of the District TB register was done. Hotspot mapping was done with community participation while prioritising areas with previously high TB notification. Buremba, Kyampangara and Nkungu were selected. In each hotspot, a professional health worker and a VHT were paired to do household health education, TB screening and data collected using MOH designed tools. Sputum samples were collected for 3 days, and these were transported and tested at the district laboratory hub using NAAT (gene-xpert). Test results that showed sensitivity to rifampicin were taken as DS-TB and those that turned out to be rifampicin resistant were considered DR-TB. All diagnosed clients were started on respective treatment.

Results:

A total of 524 households were reached, 1526 people were screened for TB. Presumptive TB was identified in 220/1526 (14.4%) and 15/220 (6.8%) (8 male and 7 female) confirmed with TB. Of these, 13 (87%) were from Buremba. Out of the 13 clients, 7 (53.8%) (3 male and 4 female) had Rifampicin resistant TB.

Conclusions:

Stakeholder engagement and pairing Village Health Teams with Professional Health workers in community hotspot screening leads to high TB yield. These data provide a paradigm for optimal active TB case finding in hard-to-reach communities.

Key words: Drug resistant TB, pastoral communities, Uganda.

Measles virus disease outbreak investigation in Kyegegwa district, Uganda oct-dec 2023.

MADENJE MICHEAL; IDEA Epi-Fellow

Background:

On 1st November 2023, Kyegegwa District reported three suspected measles cases to the Fort Portal Regional Referral Hospital Public Health Emergency Operation Center (FPRRH PHEOC). We investigated these suspected clusters to verify the cause, identify risk factors, and inform public health interventions from 1st October 2023 to 30th November 2023.

Methods:

We defined a suspected case as a resident of Kyegegwa District with acute onset of fever and ≥ 1 of the following symptoms- cough, cold, red eyes, or a generalized maculopapular skin rash – from 1st November to 30th November 2023. A probable case was a suspected case with generalized maculopapular skin rash and at least one of the other suspected case symptoms and a confirmed case was a suspected or probable case with a positive measles-specific IgM test. We conducted an active case-finding to identify measles cases who had confirmed measles virus disease, the magnitude of the measles outbreak and established evidence-based interventions to mitigate the measles outbreak in the district.

Results:

We identified 68 measles suspect cases, 36(52.9%) were males and 32(47%) were females with an age range of cases of <9 months among the not vaccinated cases (40%) and >18 months among the vaccinated. 54% of them were refugees and only 46% were Ugandan. Overall, four (4) out of the eleven (11) probable cases whose samples were tested in the laboratory were confirmed to have measles virus disease. The measles cases were highest in Nkanja (39,56.5%) sub-county which was recently created from Kyegegwa sub-county.

Conclusion:

Measles was verified and confirmed in Kyegegwa District. Most cases were refugees. Among all the cases, females were most affected. The most affected age groups were <9 months among the not vaccinated and >18 months among the vaccinated measles cases.

Number of measles cases was highest in Nkanja sub-county which was created from Kyegegwa sub county. We recommended continuous contact tracing / testing of suspects who were in contact to diseased, health education of health workers at all entry points about measles, heighten risk communication to the public and orientation of VHTs on measles active case finding.



THE PICTURE ON THE LEFT SHOWS EPI FELLOWS DURING OUTBREAK INVESTIGATION.

Continuous Detection of Isolated Cases of Crimean Congo Hemorrhagic Fever in Uganda-2023.

Authors:

Godfrey Opolot^{1,2}, Grace Ssanyu Nabagala³, Peter Olupot-Olupot¹.

Affiliations:

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2 Amuria District Local Government,

3 Ministry of Health Uganda

Corresponding Author:

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Background:

Crimean-Congo hemorrhagic fever (CCHF) is a severe zoonotic disease prevalent in Europe, Asia, and Africa, with significant health implications. It was first recognized in Crimea in 1944, and the responsible virus, CCHFV, was identified in 1956. The virus can infect humans through contact with infected animals, tick bites, and even human-to-human transmission, especially in healthcare settings, leading to a range of symptoms from mild fevers to severe and life-threatening conditions. CCHFV exhibits genetic diversity with six distinct lineages, each associated with different geographic regions. The virus can cross boundaries due to factors like the movement of cattle, bird migration, and human travel. Although CCHF cases in Uganda were initially reported in 1958 and became sporadic, there was a recent outbreak in 2013, with new cases confirmed in 2022 in Amuru and Kalaki districts. This report focuses on an isolated CCHF case investigation in Wakiso District, Uganda, and provides recommendations for reducing future CCHFV transmission.

Materials and Methods:

Case Definitions for the following were formulated Community case, Suspected case, Probable case & Confirmed case: Any suspected or probable case with a laboratory CCHF confirmation by RT-PCR/ELISA. Development of Tools and Line Listing: A case-finding investigation form was designed to collect data for descriptive epidemiology and hypothesis generation. Descriptive epidemiology: Descriptive analysis uses time, place and personal characteristics. The hypothesis was that; the CCHF outbreak was caused by unknown or unintended contact to infected ticks while playing with community dogs or ruminants located in the homes of affected case-persons. Ethical considerations: WHO and Ministry of Health protocols for outbreak investigation and response were followed. Probable risk factors: Possible exposure to ticks on community stray dogs and livestock as shown in Figure shown below.

Description of contacts listed to the confirmed CCHF case by health facility visited

Facility	Designation	Number (%)
Bulamu Health Centre (PFP)	Clinician	1 (6)
	Gate keeper/hygienist	1 (6)
Nassolo - Wamala HCIII	Clinical staff	3 (17)
Kawempe RRH	Clinical staff	11 (65)
	Laboratory staff	1 (6)

Result

Outbreak Unveiled: 3 Additional CCHF Cases

Lamentable Loss: Case Fatality Rate of 25%

Symptomatic Profile: Weakness, Fever, Gastrointestinal Bleeding

Table 2: Table showing the attack rate by sex distribution among CCHF case-patients identified.

Wamala Parish	Cases	Population	Attack rate/100,000 population
Males	1	31852	3.1
Females	3	33687	8.9

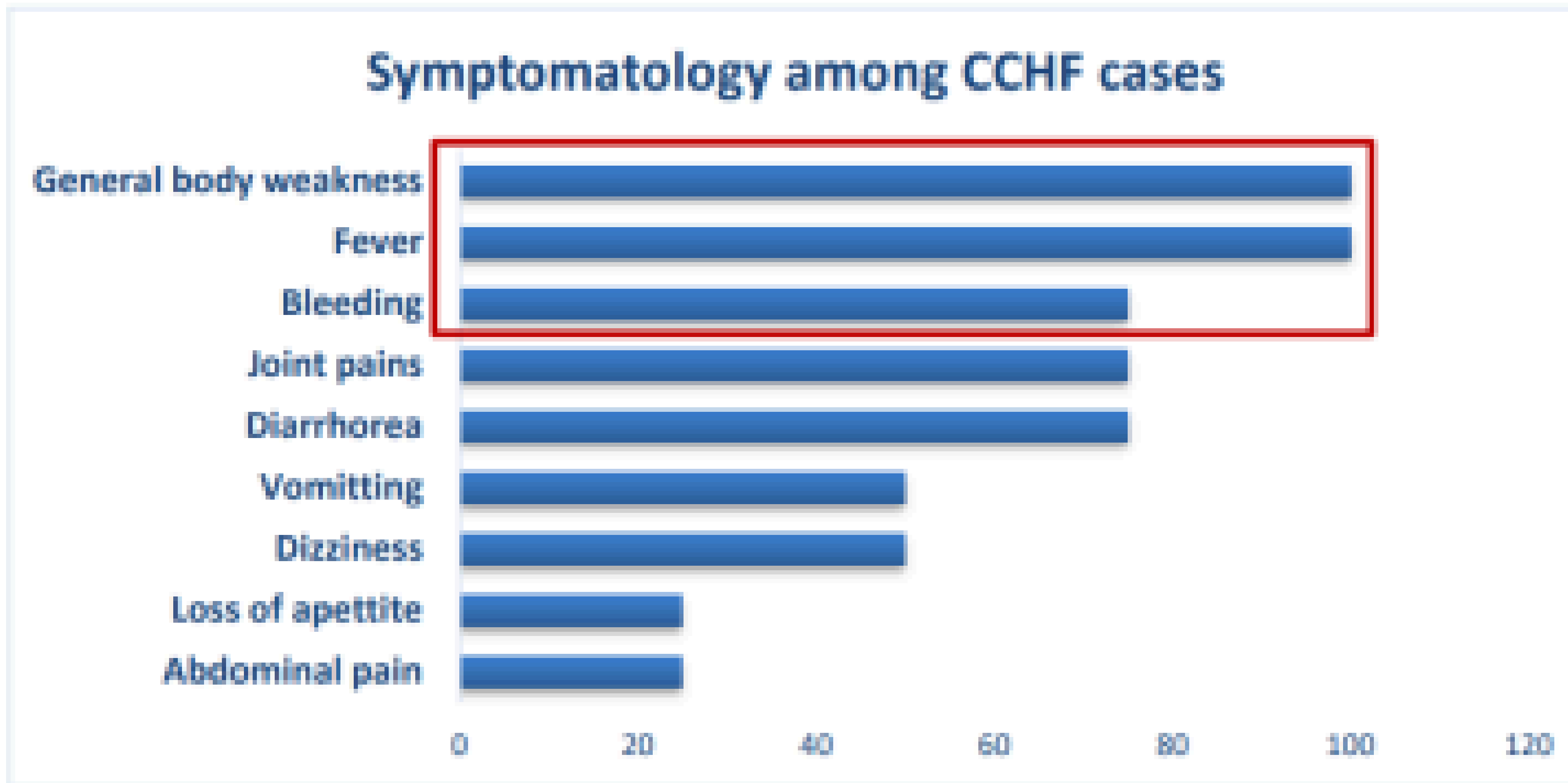


Figure 2: symptomatology of CCHF cases in Katoke-Wamala Zone, Nabweru sub-county, Nansana Wakiso district

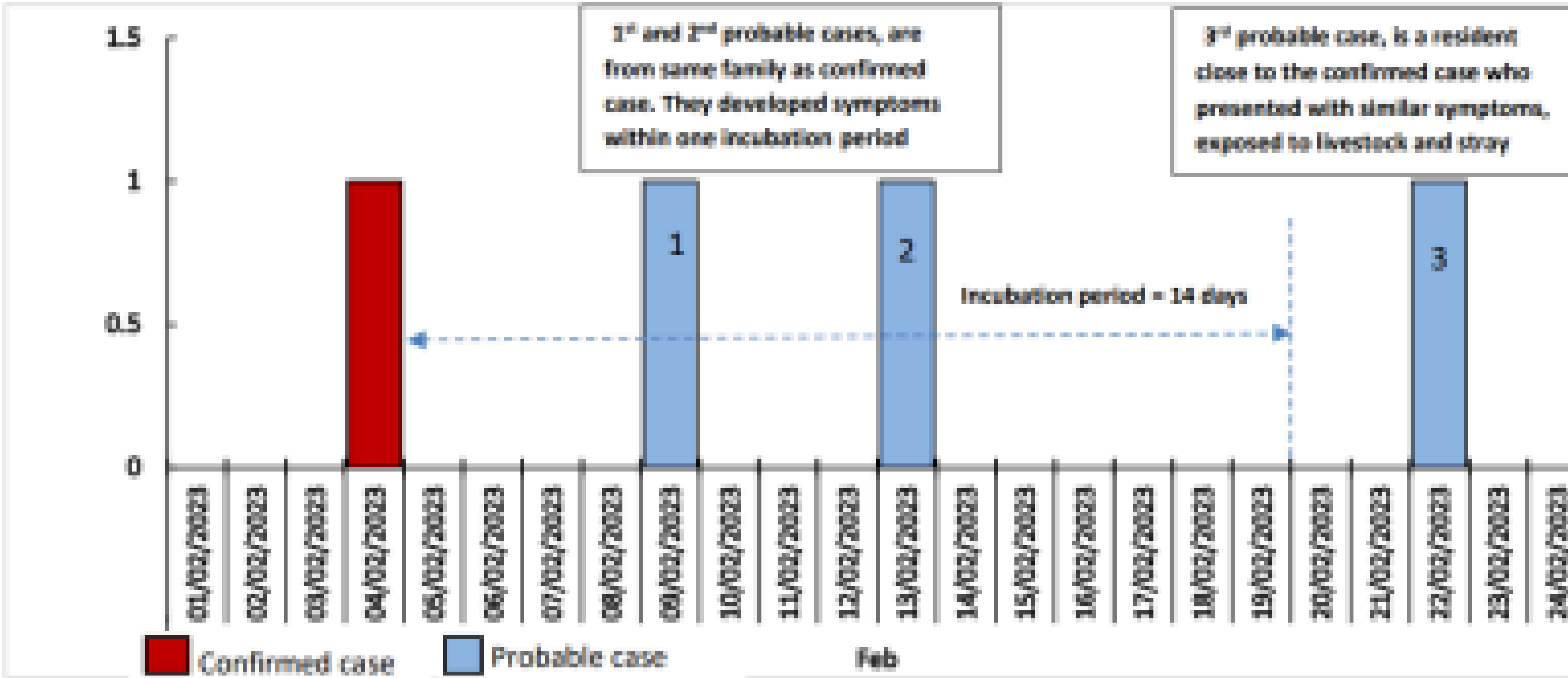


Figure 3: Epidemiological curve showing an intermittent source outbreak of CCHF in Nabweru Sub-County, Wakiso district.

Conclusion and recommendation:

CCHF in Uganda: Is endemic and sporadically distributed Tick Exposure:
A Major Risk Factor Urgent Need: Strong VHF Surveillance and Diagnostic
Capacity Advocacy: Awareness, Education, and Prevention

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Spatial clustering, hotspot analysis and temporal distribution of the 2022 Ebola Virus Disease outbreak in Uganda.

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Background:

Uganda has experienced seven outbreaks of Ebola virus disease (EVD) since 2000. The Ministry of Health declared the latest outbreak of Sudan ebolavirus (SVD) following a confirmed case in Mubende district on 19 September 2022. This study, therefore, aimed to determine the spatial clustering, hot spot analysis and temporal distribution of the 2022 EVD outbreak in Uganda.

Methods:

The study used an ecological design based on the 2184 sub counties in Uganda as the spatial units. Initial exploratory analysis used measures of spatial autocorrelation in the R statistical package. Using the Anselin's Local Moran test cluster detection method, spatial autocorrelation was applied to determine the presence of statistically significant clusters and hotspots at the sub-county level during the 2022 EVD outbreak in Uganda. We used an alpha level of 0.01 to assess statistical significance.

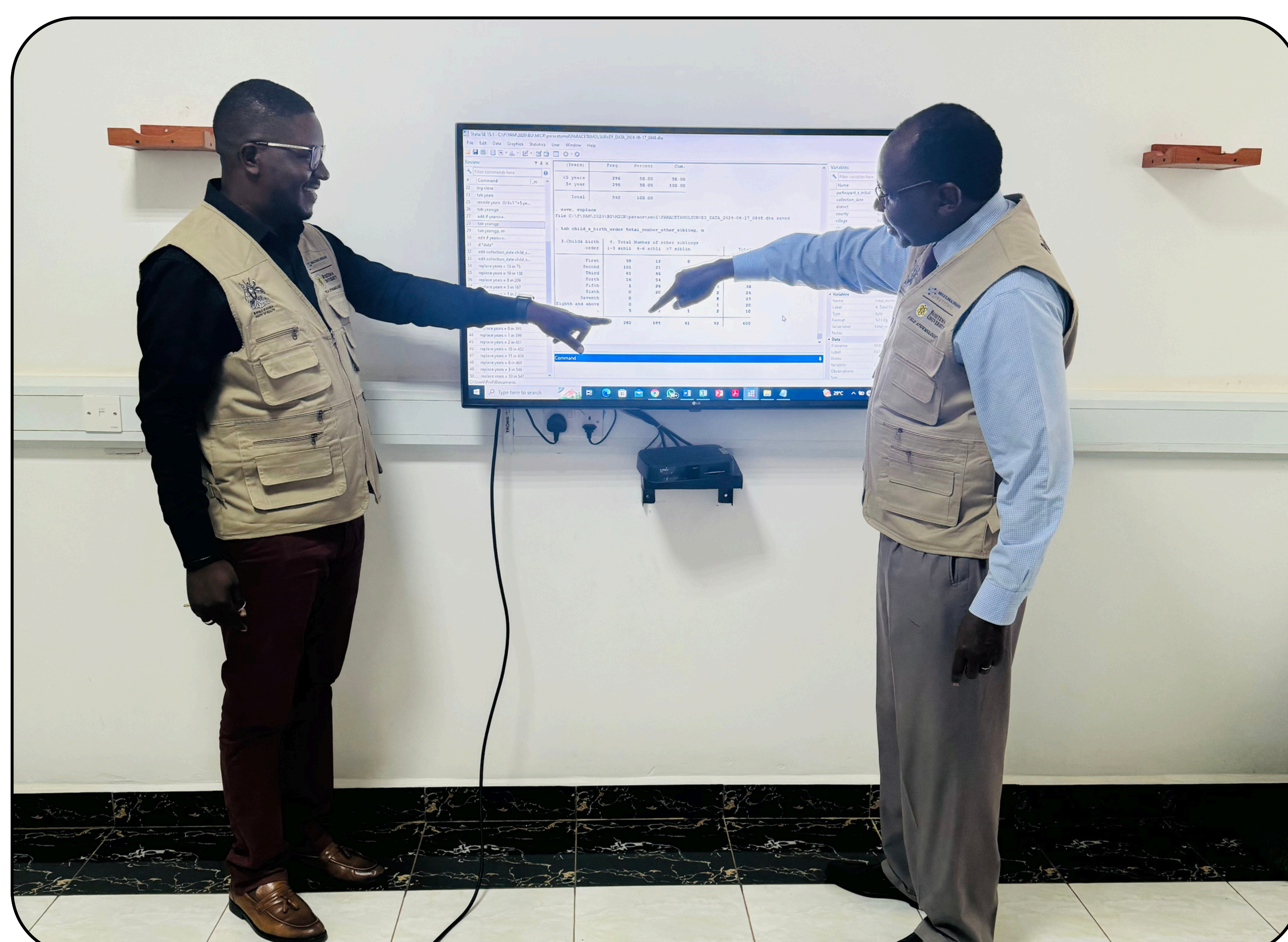
Results:

Overall, 164 cases (142 confirmed and 22 probable) of EVD were reported, of which 55 died (CFR: 39%), and 87 recovered. In addition, 22 deaths among probable cases were reported in individuals who died before samples could be taken (overall CFR: 47%). Overall, nine Ugandan districts were affected by this outbreak: Bunyangabu, Jinja, Kagadi, Kampala, Kassanda, Kyegegwa, Masaka, Mubende, and Wakiso. When the number of permutation test was set to 9999, Moran's I = 0.37261, P = 0.0085, and was significant at significance level of 0.01. Spatial cluster analysis identified two most likely cluster; one large multi-centered cluster in districts of Mubende and Kassanda with 13 locations and one cluster in Rubaga division in Kampala district.

Conclusion:

Substantial spatial clustering of EVD was detected at sub-county level in the recent outbreak at two districts of Mubende and Kassanda in the central region of Uganda. This study identifies hotspot areas for efficient implementation of early-targeted interventions for the prevention and control of the outbreak.

Keywords: Ebola virus disease, spatial analysis, Uganda, Hotspots



THE PICTURE ABOVE SHOWS ONE OF THE EPI FELLOWS AND A PROFESSOR DURING A GEOSPATIAL DATA ANALYSIS SESSION.

Assessing Cholera Outbreak Preparedness in Uganda: A case of Busia District Uganda, July-August 2023

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THE PICTURE ABOVE SHOWS EPI FELLOWS COLLECTING SAMPLES DURING OUTBREAK INVESTIGATION.

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Background: Cholera has become frequent in Uganda in the last 25 years with the 1998 outbreak being the most severe. The country has built epidemic disease outbreak response through District, Regional, and National Task Forces. In addition, the recent introduction of an Emergency Operation Centre (EOC) in regional settings provides monitoring mechanisms for disease outbreaks, progress, and response. This study assessed Cholera outbreak preparedness in Busia District, Eastern Uganda, following a confirmed outbreak in the neighbouring Namayingo District.

Methods: This was a cross-sectional study that was conducted between 28th July 2023 to 01st August 2023. Data were collected through an entry meeting with the District Task Force (DTF) and in-depth interviews with the District Rapid Response Teams (DRRT). A rapid assessment of readiness was carried out, evaluating each pillar of the Rapid Response Team (RRT) using a preparedness standardized checklist adapted by the Ministry of Health (MoH). The assessment focused on eight key outbreak response pillars; leadership/coordination, risk communication and community engagement, infection prevention and control, WASH, case management, surveillance, laboratory capabilities, and operations and logistics.

Results: While the Busia District had a DTF structure, at the time of this assessment there were no meetings, a costed cholera response plan, and partnership mapping. The Risk Communication and Community Engagement (RCCE) team had functional coordination mechanisms but lacked updated training and cholera-specific information materials. Surveillance tools and trained healthcare workers existed, but there were no Cholera Standard Operating Procedures (SOPs) for surveillance. Additionally, Village Health Teams (VHTs) who are users of these tools at community levels had not been trained. Recent WASH assessments addressed identified gaps, and laboratory personnel were trained in sample collection, though challenges in sample collection logistics remained. Infection Prevention and Control (IPC) governance structures and healthcare worker training were in place, but there was an inadequate supply of personal protective equipment (PPE) and cholera-specific IPC protocols. Case management facilities were designated, but issues with patient referral, treatment guidelines, resources, and team activation were reported. Additionally, essential commodities and PPE were lacking in operation support and logistics.

Conclusion: This assessment highlights both the existing strengths and the critical gaps in cholera outbreak preparedness in Busia District in Eastern Uganda. There is a need for coordinated efforts to enhance readiness in the face of a potential cholera outbreak.

Trends and Patterns of Antimicrobial Resistance in Uganda for 2020-2023: A Secondary Data Analysis

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Background:

Antimicrobial resistance (AMR) threatens patient care, healthcare costs, and public health by reducing the effectiveness of treatments and increasing the global disease burden. Understanding AMR trends is vital for effective antimicrobial stewardship. While primary data collection is insightful, secondary data analysis provides a cost-effective way to study long-term trends. This research aims to inform evidence-based strategies for improving antimicrobial stewardship and infection control, ultimately preserving antimicrobial efficacy.

Materials and Methods:

A retrospective study used secondary data from 12 regional surveillance sites extracted from the district health information system software 2 (DHIS2). The study considered thirteen (13) pathogens and Nine (9) antibiotics of five classes of Beta-lactam, Fluoroquinolone, Carbapenem, Aminoglycoside, and Combination. Data was analyzed for temporal trends and patterns of AMR across pathogens, antibiotics, and regions. Ministry of Health protocols were followed, including the use of human data.

Results:

AMR trends in isolates: All isolates exhibited resistance to antibiotics. Isolates of *Klebsiella pneumonia* (62%), *E. coli* (57%), *Shigella* (63%), *Staphylococcus aureus* (49%), and *Streptococcus pneumonia* (49%) had high AMR by 2023. Isolates with increased antimicrobial resistance (AMR) from 2020 to 2023 include *E. coli* (6%), *Shigella* (31%), *Staphylococcus aureus* (5%), *Streptococcus pneumoniae* (5%), *Acinetobacter* (2%), *Vibrio cholerae* (35%), and *Hemophilus influenzae* (19%).

Temporal trends of AMR by antibiotic class: Pathogens resisted all nine antibiotics throughout the period. AMR was higher in Cotrimoxazole, Fluoroquinolones, Beta-lactams, and Aminoglycosides, whereas it was lower in the Carbapenem group of antibiotics. Notably, there is an increase in AMR from 2020 to 2023 across common antibiotics. Specifically, resistance had risen for Cotrimoxazole by 23%, Beta-lactams (including Ceftriaxone and Ampicillin) by 19-22%, Fluoroquinolone (particularly Ciprofloxacin) by 16%, and Aminoglycosides (such as Gentamicin and Amikacin) by 2-9% across the 13 pathogens. There was a decline in antimicrobial resistance (AMR) for Piperacillin/Tazobactam (a Beta-lactam) by 6%, and for Meropenem (a Carbapenem) by 6%.

AMR Patterns: AMR was high in the Busoga, Bunyoro, Bugisu, and North central regions.

Conclusion and recommendation:

AMR increased and was high among Cotrimoxazole, Fluoroquinolones, Beta-lactams, and Aminoglycosides while lower in the Carbapenem group. AMR was high in Bunyoro, Busoga, Bugisu, and Karamoja.

There is an urgent need for comprehensive surveillance analysis and a multifaceted response, including advocacy to enhance and enforce stewardship programs, explore alternative treatments, conduct research on novel mechanisms, and provide education on prudent antibiotic use.

POLICY BRIEFS

POLICY BRIEF

The Ongoing Role of Evidence Generation in Supporting the Elimination Strategy

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EXECUTIVE SUMMARY

Evidence generation is critical in the development and implementation of strategies aimed at eliminating diseases. This policy brief highlights the importance of continuous evidence generation to inform and refine elimination strategies, emphasizing its role in decision-making, policy formulation, and program evaluation. The brief outlines key areas where evidence generation is essential and provides recommendations to strengthen these efforts.

BACKGROUND

Elimination strategies for diseases such as malaria, tuberculosis, and HIV/AIDS rely on robust data to guide interventions, monitor progress, and adjust tactics as needed. Evidence generation includes epidemiological studies, clinical trials, operational research, and surveillance systems.

KEY FACTS

1. **Data-Driven Decision Making:** Accurate and timely data are crucial for making informed decisions and allocating resources effectively.
2. **Adaptive Strategies:** Continuous evidence generation allows for the adaptation of strategies based on emerging trends and challenges.
3. **Stakeholder Engagement:** Engaging stakeholders, including communities, healthcare providers, and policymakers, is essential for effective evidence generation and utilization.

KEY CHALLENGES

1. **Data Gaps:** Insufficient data in certain regions or populations can hinder the development of effective strategies.
2. **Quality and Reliability:** Variability in data quality and reliability can impact the accuracy of evidence used in decision-making.
3. **Resource Constraints:** Limited resources for data collection, analysis, and dissemination can restrict evidence generation efforts.
4. **Integration of Evidence:** Challenges in integrating evidence into policy and practice due to lack of coordination among stakeholders.

POLICY RECOMENDATIONS

1. Strengthen Data Collection and Surveillance Systems

- **Enhanced Surveillance:** Invest in robust surveillance systems to monitor disease incidence, prevalence, and trends.
- **Standardized Data Collection:** Implement standardized protocols for data collection to ensure consistency and comparability.

2. Invest in Research and Innovation

- **Epidemiological Research:** Support epidemiological studies to understand disease dynamics and identify risk factors.
- **Clinical Trials:** Fund clinical trials to evaluate new interventions, treatments, and vaccines.
- **Operational Research:** Encourage operational research to assess the effectiveness of intervention strategies in real-world settings.

3. Improve Data Quality and Reliability

- **Capacity Building:** Train healthcare workers and researchers in data collection, analysis, and interpretation.
- **Quality Control Measures:** Implement quality control measures to ensure the accuracy and reliability of data.

4. Enhance Data Utilization and Dissemination

- **Data Sharing Platforms:** Develop platforms for data sharing among stakeholders, including researchers, policymakers, and practitioners.
- **Policy Integration:** Ensure that evidence is integrated into policy formulation and program planning through regular reviews and consultations.

5. Foster Stakeholder Collaboration

- **Multi-Sectoral Approach:** Promote collaboration among different sectors, including health, education, and finance, to support evidence generation and utilization.
- **Community Engagement:** Engage communities in data collection and dissemination efforts to ensure local relevance and acceptance.

6. Monitor and Evaluate Interventions

- **Regular Evaluations:** Conduct regular evaluations of elimination strategies to assess progress and identify areas for improvement.
- **Adaptive Management:** Use evidence from evaluations to adapt and refine strategies in response to emerging challenges and opportunities.

CONCLUSION

The ongoing generation of evidence is vital for the success of disease elimination strategies. By strengthening data collection and surveillance, investing in research, improving data quality, enhancing data utilization, fostering collaboration, and monitoring interventions, we can ensure that elimination strategies are effective, adaptive, and responsive to changing circumstances. Continuous evidence generation will support informed decision-making, optimize resource allocation, and ultimately contribute to the achievement of disease elimination goals.

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