MUWRP
Makerere University
Walter Reed Program

Ebola Vaccine Trials in Uganda

Community Engagement in Emergency Disease Outbreaks

Lessons learned, ethical dilemmas, what failed, and what next?

Dr. Betty Mwesigwa
Deputy Executive Director MUWRP

12th ANREC – 21 October 2025

MUWRP
Makerere University
Walter Reed Program

About MUWRP

- Established 2002
- Not for Profit organization
- Locally registered health organization

MAKERERE UNIVERSITY

WRAIR
Walter Reed Army Institute of Research
AFRICA

HENRY M. JACKSON FOUNDATION
FOR THE ADVANCEMENT OF MILITARY MEDICINE

Vision

- To be a leading biomedical research organization for better health

Mission

- To mitigate disease threats through quality health research, health systems strengthening and disease surveillance

Core values

- Excellence, Integrity, Quality, and Teamwork

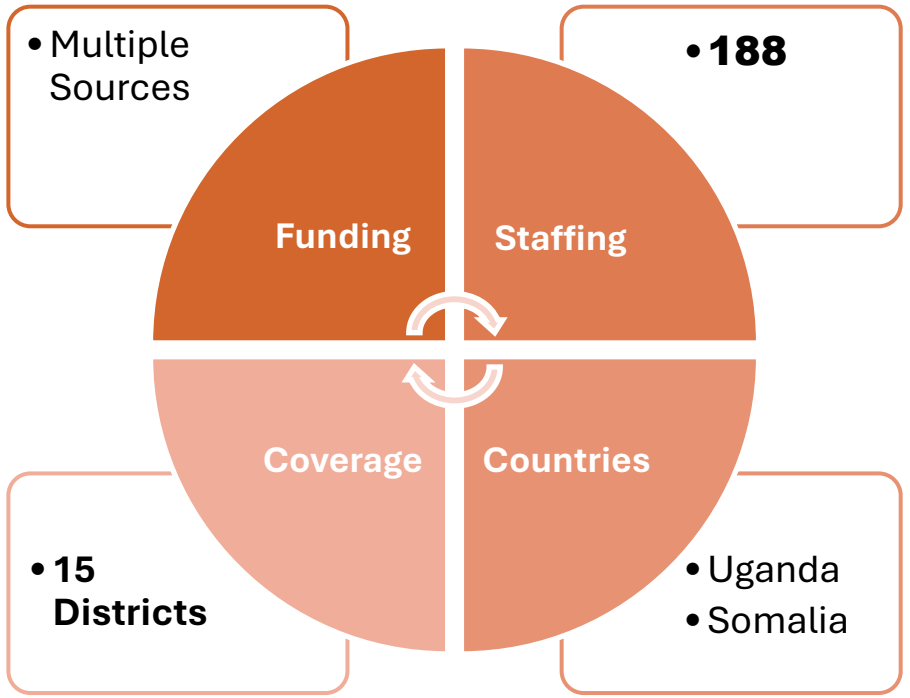
MUWRP
Makerere University
Walter Reed Program

MUWRP Portfolio

MUWRP

- **Research**
- **Clinical and Research Laboratory**
- **Emerging Infectious Diseases Program**
- **ACESO-Uganda**
- **PEPFAR**

- **Finance**
- **Administration**
- **Logistics**
- **Data**
- **IT**
- **Human resource**
- **Operations**



MUWRP
Makerere University
Walter Reed Program

Overview of the Ebola Virus Disease (EVD)

- EVD is a severe, often fatal illness caused by viruses in the Filoviridae family.
  - *EVD has a case fatality rate ranging from 25% to 90%.*
- Transmission is through direct contact with infected bodily fluids, contaminated surfaces, or infected animals (e.g., fruit bats, primates)
- Prevention and control rely on **community engagement**, to ensure IPC, case management, contact tracing, and vaccination and safe burials

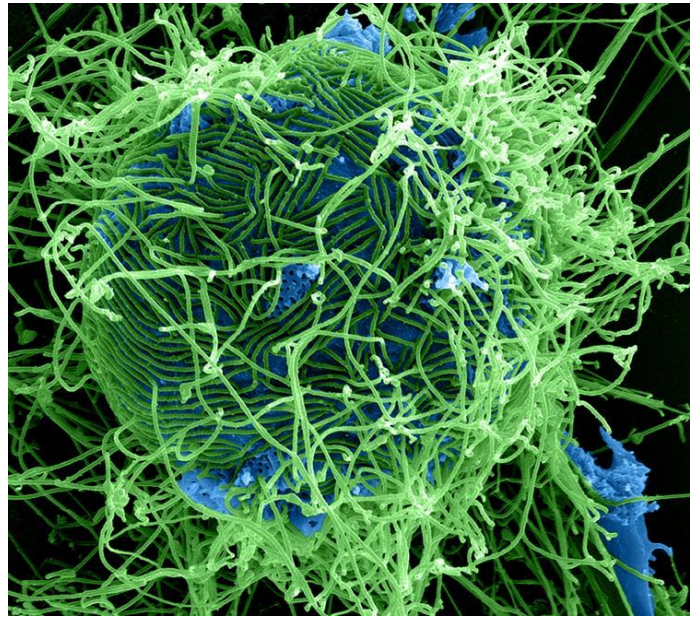
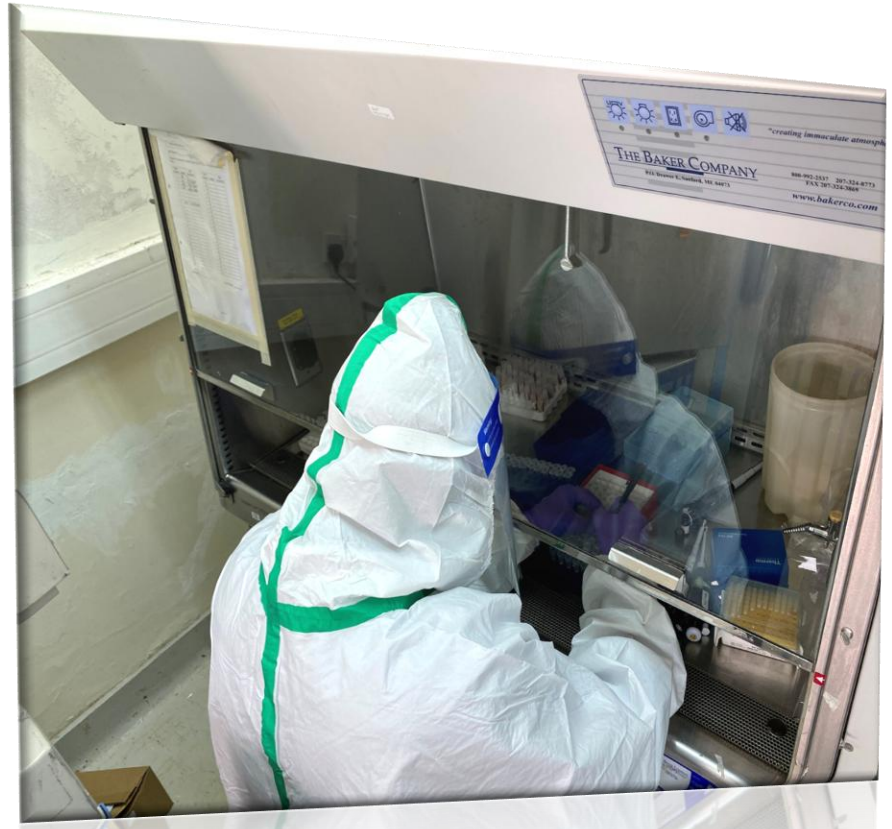


Photo Credit: *Baylor College of Medicine, Department of Molecular Virology and Microbiology*

MUWRP
Makerere University
Walter Reed Program

Importance of Vaccine Trials During Outbreaks

- Some strains of EBV have no licensed vaccines!
- Phase 1 and 2 trials have mainly been conducted in ‘non outbreak’ periods
- **Impact to Public Health**
  - Providing critical efficacy data under outbreak conditions:
    - to tailor public health responses
    - optimize vaccine deployment



MUWRP Laboratory scientist undertaking a procedure

MUWRP
Makerere University
Walter Reed Program

Importance of Vaccine Trials During Outbreaks

- **Rapid Evaluation of Effectiveness**
  - Rapid vaccine trials during outbreaks enable quick assessment of vaccine effectiveness to control disease spread.
- **Adaptive Clinical Designs**
  - Adaptive trial designs allow simultaneous evaluation of multiple vaccine candidates, accelerating results.
- **Building Resilient Systems**
  - Real-time data from vaccine trials help build resilient health systems to respond to current and future outbreaks
- **Adapting to Emerging Variants**
  - Pathogens evolve quickly; ongoing vaccine trials determine if existing vaccines require modification for emerging variants
- **Enhancing Global Collaboration**
  - Vaccine trials during outbreaks lead to global cooperation for vaccine development and distribution
  - enable data sharing and resource pooling, leveraging diverse expertise worldwide,
  - ensure equitable access to vaccines and interventions.

MUWRP
Makerere University
Walter Reed Program

Role of Community Engagement in Emergency Response

Community Trust and Resilience

- Community engagement builds trust and resilience, enabling timely and culturally appropriate responses to health crises.

Team-work and Acceptance

Involving communities in planning and implementation improves uptake of public health measures and reduces mis-information.

Ownership of interventions

Two-way communication with local leadership are essential for effective surveillance, safe practices, and sustained emergency preparedness.

MUWRP
Makerere University
Walter Reed Program

Lessons Learned

- **Trust is foundational:**

Building trust with communities before an outbreak is critical

  - The Community Led Ebola Action (CLEA) Approach (communities take their own action, and their own analyses)
  - Enabled faster behavior change and better compliance with health measures

- **Local leadership matters:** Empowering local leaders and community-based organizations fosters ownership and sustainability of health interventions

- **Two-way communication:**

Engagement must be dialogic—not just informing but listening

  - Real-time feedback mechanisms helped adapt strategies during outbreaks

- **Cultural sensitivity:**

Understanding local customs and beliefs helps tailor interventions that are more acceptable and effective

MUWRP
Makerere University
Walter Reed Program

Lessons learned from engaging communities for Ebola vaccine trials in Sierra Leone

Dada *et al. BMC Public Health* (2019) 19:1665
https://doi.org/10.1186/s12889-019-7978-4

BMC Public Health

RESEARCH ARTICLE Open Access

Lessons learned from engaging communities for Ebola vaccine trials in Sierra Leone: reciprocity, relatability, relationships and respect (the four R's)

Sara Dada[1,2*], Gillian McKay[1], Ana Mateus[2] and Shelley Lees[1]

Abstract

Background: Building trust and engaging the community are important for biomedical trials. This was core to the set up and delivery of the EBOVAC-Salone and PREVAC Ebola vaccine trials in Sierra Leone during and following the 2014–2016 West African Ebola epidemic. Local community liaison teams (CLT) engaged with the community through public meetings, radio chat shows, and other activities, while a social science team (SST) assessed community members' and participants' perceptions and regularly updated the clinical team to adapt procedures to improve the acceptability and compliance of the trial. The objective of this study was to examine the community engagement (CE) program in these trials and to identify potential barriers and facilitators.

Methods: Fifteen CLT and SST members participated in in-depth interviews and 23 community members attended

MUWRP
Makerere University
Walter Reed Program

Uganda's Experience

Photo Credit: *The Guardian - Health workers among dead in Ugandan Ebola outbreak*

- Uganda has faced 8 Ebola outbreaks since 2000, with the deadliest in Gulu (2000): 425 cases, 224 deaths
- 5 of these outbreaks involved the Sudan strain, including the 2022 outbreak with 164 cases and 55 deaths
- The most recent was declared this year (2025) with 14 cases *(12 confirmed, 2 probable),* 4 deaths, and 10 recoveries
- Uganda has always had strong national response involving; contact tracing, quarantine, and community mobilization

MUWRP - Ebola Vaccine Clinical Research

- In 2009, MUWRP conducted Africa's first Ebola vaccine trial using a DNA vaccine (RV247)
  - The trial showed safe and immunogenic responses in Ugandan volunteers
- Subsequently MUWRP conducted Phase 1b trials of ChAd3 vaccines for Zaire and Sudan strains.
- Phase II Ad26 ,MVA vectored vaccines in a prime boost regimen
- Currently completing follow up for Sabin 003, a Phase II Ebola Sudan Vaccine Trial
- We also conducted long-term studies on Bundibugyo Ebola survivors (2007–08)
  - These revealed persistent health issues like vision loss, memory problems, and joint pain

MUWRP
Makerere University
Walter Reed Program

Recent Ebola Vaccine Research in Uganda

- Uganda launched a clinical safety and efficacy trial for the rVSV Sudan Ebola virus vaccine(IAVI) in February 2025
  - Trial readiness was achieved in 4 days after outbreak confirmation
- Research efforts led by Makerere University Lung Institute, UVRI, and WHO
- Ring vaccination strategy that targets contacts of confirmed cases

MUWRP
Makerere University
Walter Reed Program

Lessons

- The inter-outbreak period is an opportunity
  - Protocol development and regulatory approvals, staff training, completed before outbreak occurred

- Multi disciplinary teams including community engagement experts involved
  - Community engagement strategies for recruitment, retention and risk communication were clearly laid out

- Lessons from Sierra Leone and DRC- ring vaccination trial preparations and implementation were harnessed

- Vaccines were prepositioned in the country

MUWRP
Makerere University
Walter Reed Program

Community Engagement pillars to outbreak response and vaccine research

Stakeholder Mapping & Early Involvement to build trust and ownership

Risk communication and Social Mobilization to address fears, mis-information and promote vaccine acceptance

Community Advisory Boards to provide feedback on Trial design, consent process and community concerns

Participatory dialogue and co-design to give contextual insights on trial recruitment, follow up and feedback mechanisms

Leveraging the existing health infrastructure of the Village Health Teams (VHTs), local clinics to disseminate information and manage referrals

Ethical Dilemmas in Vaccine Trials during Outbreaks

MUWRP
Makerere University
Walter Reed Program

Ethical Dilemmas in Vaccine Trials during Outbreaks

- Experimental vaccines in crisis settings raise concerns about ***safety, urgency, and informed consent.***
  - Communities may feel like “test subjects”, especially when vaccines are unlicensed and outcomes uncertain.
- ***Use of placebos in double-blind trials*** during deadly outbreaks can be controversial with no proven treatment exists.
  - Balancing scientific rigor with humanitarian urgency is ethically complex.
- Gaining true ***informed consent is difficult*** amid fear, misinformation, and low health literacy.
  - Historical mistrust of medical research can hinder participation and fuel resistance.
- Concerns when trial communities ***lack access to vaccines*** after the end of the studies.
  - Calls for fair benefit-sharing and regional vaccine manufacturing are growing louder.

MUWRP
Makerere University
Walter Reed Program

Ethical Dilemmas in Ebola Vaccine Trials

- **Balancing autonomy and public safety:** Measures like quarantine and mandatory vaccination raise questions about individual rights versus collective health
- **Resource allocation**: Deciding who gets limited resources (e.g. vaccines, hospital beds) involves ethical trade-offs, especially in underserved areas
- **Transparency vs fear:** Sharing information about risks must be balanced against the potential to cause panic or stigma
- **Informed consent in research:** Conducting clinical trials during outbreaks requires careful ethical oversight, especially when communities are vulnerable. Extra vigilance by RECs during protocol review required

What has not worked?

MUWRP
Makerere University
Walter Reed Program

What has not worked?

Top-down messaging: In several outbreaks, centralized communication failed to resonate with local communities, leading to mistrust and resistance

Lack of preparedness: Many regions lacked pre-established community engagement frameworks, delaying effective response

Ignoring local knowledge: Dismissing traditional practices or community insights often alienated populations and hindered cooperation

Insufficient monitoring: Real-time tracking of engagement efforts was limited, making it hard to adjust strategies quickly

MUWRP
Makerere University
Walter Reed Program

What has not worked?

- Limited community understanding of Ebola and vaccines
- Exhumation of safely buried bodies due to mistrust
- Delays in vaccine development and diagnostics
- Under investment in outbreak research compared to COVID-19

MUWRP
Makerere University
Walter Reed Program

Recommendations - What next?

- **Institutionalizing engagement:** Community engagement should be embedded in national preparedness plans, not treated as an afterthought.

- **Digital tools for feedback:** Leveraging mobile platforms and social media can enhance real-time communication and data collection.

- **Training frontline workers:** Equipping health workers with skills in cultural competence and community dialogue is essential.

- **Global standards:** Adopting minimum quality standards for community engagement can guide consistent, ethical practices across contexts.

MUWRP
Makerere University
Walter Reed Program

Recommendations - What next?

- Invest in community engagement as a core pillar of outbreak response
- Establish ethical frameworks for emergency trials by developing context-specific ethical guidelines for conducting research during outbreaks
- Standardize community engagement approaches (Learning from past experiences)
- Lay strategies that ensure trial participants and affected communities have priority access to vaccines and therapeutics once proven effective.
- Train multidisciplinary rapid response teams with expertise in epidemiology, social science, ethics, logistics, and communication.

Dr. Stephen Okello of MUWRP (in the middle – white T-shirt) with the Minister of Health and other development partners involved in the 2022 Ebola Outbreak response.

MUWRP
Makerere University
Walter Reed Program

Conclusions

- Community engagement is not optional; it is essential
- Uganda's experience offers valuable lessons for the region and the world
- Ethical, inclusive, and proactive approaches are key to future conduct of research during outbreaks

Thank You