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More than meets the eye: hidden epidemics in Africa and the power of multi-pathogen serosurveillance

Submission date
04/11/2025

Recruitment status
No longer recruiting

Registration date
09/11/2025

Overall study status
Ongoing

Last Edited
07/11/2025

Condition category
Infections and Infestations

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Infectious diseases affect millions of people around the world every year. Most cases are mild, but some people become very unwell. There is a great deal that we do not understand about existing infections, and new infectious diseases continue to appear. Marburg Virus Disease is a rare but serious health threat in Africa. This research study seeks to find out the proportion of people who may have been exposed at some point. This will help us gain important information in order to better understand the disease so we can try to find better ways to manage and treat this infection in the future.

Who can participate?
Individuals aged 10 years and above who have lived in selected households for more than 3 months before the study began are eligible to participate. Households are chosen randomly within selected communities using population maps and GPS. Participation is entirely voluntary, and choosing not to take part will not affect you in any way.

What does the study involve?
If participants agree to take part, their basic information will be collected including their health and household. This includes details such as your age, sex, medical and travel history, exposure to infections, and household living conditions. A small blood volume sample (about 10 ml or two teaspoons) will be drawn to test for antibodies against Marburg virus and the other WHO-priority pathogens. The entire visit will take about 15 minutes.
Data and samples will be handled confidentially and stored securely. Personal information will be coded and only used by authorized research staff. With participants' permission, part of their samples will be stored for future approved research.

What are the possible benefits and risks of participating?
Participants may not receive direct personal benefits from participating but will be given feedback on their antibody test results, which can show if they have been exposed to the virus before. The study's findings may help improve understanding of the infection and support future public health efforts.

There are minimal risks involved. Drawing blood may cause slight pain or discomfort, but this will be done by trained professionals to reduce any discomfort. All participants' information will be kept anonymous and confidential.

Where is the study run from?
The study is coordinated by the ALERRT consortium through the Global Health and Infectious Diseases Research Group at the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) in Kumasi, Ghana, in collaboration with partner institutions in each participating country:
1. The University of Yaoundé 1, Biotechnology Center in Cameroon
2. The Centre of Excellence for the Prevention and Control of Transmissible Diseases (CEA-PCMT), University of Conakry (UGANC) in Guinea
3. The Uganda Virus Research Institute in Uganda.

When is the study starting, and how long is it expected to run for?
July 2025 to May 2026

Who is funding the study?
The study is funded through the African coaLition for Epidemic Research, Response and Training (ALERRT) Consortium and the European and Developing Countries Clinical Trials Partnership

Who is the main contact?
Prof. John Humphrey Amuasi, amuas001@umn.edu

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
Nil known

Study information

Scientific Title
Seroprevalence of Marburg virus infection and other WHO-priority pathogens in Cameroon, Guinea, and Uganda

Acronym
SeroMARV

Study objectives
The study's main aim is to assess previous exposure to Marburg virus (MARV) Infection in the general population in three countries in Africa, determined by measuring circulating IgG antibodies. Also, to estimate MARV force of infection (FOI), which is a measure of the risk of infection/level of pathogen circulation that can be used to determine the burden of MARV infection and disease.

Primary objectives:
1. To assess previous exposure to Marburg Virus (MARV) Infection in the general population in three African countries, determined by measuring circulating IgG antibodies.
2. To estimate MARV force of infection (FOI) in the three African countries.
3. To develop a platform for the implementation of seroprevalence of WHO priority pathogens in Africa

Secondary objectives:
1. To characterize age-specific and gender-specific seroprevalence trends.
2. To determine risk factors associated with prior infection with MARV in the three African countries.
3. To assess host genetic factors, including single-nucleotide polymorphism (SNP) of candidate genes that could be associated with susceptibility/protection from infection with MARV and other outbreak-worthy pathogens.
4. To estimate the seroprevalence of other WHO priority filovirus pathogens, including Ebola virus (EBOV), Sudan virus (SUDV), Bundibugyo virus (BDBV , and Taï Forest virus (TAFV), Ravn virus (RAVN) etc.

Ethics approval required
Ethics approval required

Ethics approval(s)
1. approved 14/05/2025, Comité Régional d'Ethique de la recherche en Santé Humaine du Sud (CRERSH SUD) (8 Rue 3038 quartier du Lac (Yaoundé III), Ebolowa, 237, Cameroon; +237 (0)222 23 04 68; dpsp_sud@yahoo.fr), ref: 05/CRERSH SUD/SE/2025

2. approved 18/06/2025, Comité National d'Ethique de la Recherche en Santé (CNERS) (Conakry, Conakry, 224, Guinea; +224 (0)622 03 48 51; oumou45@yahoo.fr), ref: 108/CNERS/25

3. approved 04/07/2025, Uganda National Council for Science and Technology (Plot 6, Kimera Road, Ntinda, PO Box 6884, Kampala, 256, United Arab Emirates; +256 (0)414 705500; info@uncst.go.ug), ref: HS6241ES

Study design
Multicenter population-based household cross-sectional survey employing a two-stage sampling approach

Primary study design
Observational

Study type(s)
Screening

Health condition(s) or problem(s) studied
Marburg virus infection

Interventions
This is a household-based cross-sectional survey using a two-stage sampling method. First, communities are conveniently selected and divided into clusters using population data. GPS coordinates are randomly generated in clusters, guiding selection of nearby households. From each household, one individual is chosen based on age and gender distribution; some homes provide multiple participants. The approach ensures representative sampling and enables infection rate and transmission estimates.

If participants agree to take part, their basic information will be collected including their health and household. This includes details such as your age, sex, medical and travel history, exposure to infections, and household living conditions. A small blood volume sample (about 10 ml or two teaspoons) will be drawn to test for antibodies against Marburg virus and the other WHO-priority pathogens. The entire visit will take about 15 minutes.

Data and samples will be handled confidentially and stored securely. Personal information will be coded and only used by authorized research staff. With participants' permission, part of their samples will be stored for future approved research.

Intervention Type
Other

Primary outcome(s)
Determination of MARV-specific IgG antibodies measured using Luminex Magpix -based multiplex immunoassay from plasma samples collected during participant enrolment

Key secondary outcome(s))
1. Quantitative levels of pathogen-specific IgG antibodies against selected candidate WHO-priority pathogens, measured using Luminex Magpix -based multiplex immunoassay from plasma samples collected during participant enrolment
2. Correlation of antibody titers with potential exposure histories or risk factors, assessed using questionnaire-derived demographic and exposure data collected during participant enrolment.

Completion date
01/05/2026

Eligibility

Key inclusion criteria
1. Individuals aged 10 years and above
2. Member of the visited household
3. Resides in household for more than 3 months before study start
4. Willingness to participate in the study demonstrated by a signed or thumbprinted informed consent or assent form

Participant type(s)
Population

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
10 years

Sex
All

Key exclusion criteria
Known pathology or a health problem contraindicated with blood sample collection

Date of first enrolment
02/07/2025

Date of final enrolment
30/11/2025

Locations

Countries of recruitment
Cameroon

Guinea

Uganda

Study participating centre
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Study participating centre
Uganda Virus Research Institute
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Study participating centre

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Sponsor information

Organisation
Kumasi Centre for Collaborative Research in Tropical Medicine

ROR
https://ror.org/032d9sg77

Funder(s)

Funder type
Research organisation

Funder Name
European and Developing Countries Clinical Trials Partnership

Alternative Name(s)
Le partenariat Europe-Pays en développement pour les essais cliniques, A Parceria entre a Europa e os Países em Desenvolvimento para a Realização de Ensaios Clínicos, The European & Developing Countries Clinical Trials Partnership (EDCTP), The European & Developing Countries Clinical Trials Partnership, European and Developing Countries Clinical Trials, EDCTP

Funding Body Type
Private sector organisation

Funding Body Subtype
International organizations

Location
Netherlands

Funder Name

Results and Publications

Individual participant data (IPD) sharing plan

Data sharing for the SeroMARV study will follow the ALERRT Master Data Management Plan. Participant-level data will be made available for sharing within 1 and 2 years upon study completion, in line with the EDCTP Data Sharing Policy, FAIR principles (ensuring data are Findable, Accessible, Interoperable, and Reusable), and the PANDORA/ALERRT Data Sharing Principles emphasizing Fairness, Ethics, Equity, Quality, Usability, Transparency, and Timeliness. The SeroMARV data will be anonymized and accompanied by metadata and documentation, including the study protocol, and codebook with the data dictionary. Data sharing will be coordinated by the lead data management team and require approval from the Lead Principal Investigator to share the data with the Health Research Data West Africa platform.

IPD sharing plan summary

Available on request