**Anthropology of the Ebola Outbreak:**

**Social Transformation, Surveillance and Resilience**

**Research protocol**

**Version 1.0**

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# Project Summary

Following the unprecedented Ebola Virus Disease (EVD) epidemic in West Africa, there is an urgent need for public health action and social science expertise to communicate risks of Ebola transmission and deepen community engagement with containment efforts. As we approach what is, hopefully, the final phase of the outbreak response, understanding the social impact of emergency public health measures is critical. Drawing upon anthropological, epidemiological and veterinary expertise, this pilot project will pursue pressing questions about people’s experiences with wide-ranging disease control interventions and the possibilities for preparedness and strengthening national health capacities to minimize health hazards and vulnerabilities.

The two key aims of the study are to (1) study how people come into contact with reservoir species to understand how best reduce the risk of zoonotic spillover events that might lead to future EVD outbreaks and (2) to explore the transformations (infrastructure and health personnel) of the health system following the outbreak of EVD, to improve responses to future outbreaks.

Prevention of zoonotic origin of epidemics hinges on reducing the likelihood of zoonotic transmission. The epidemic of EVD and risk-awareness campaigns altered the interactions between humans and animals, with potential consequences on the social, food security and public health. A better understanding of everyday human-animal interactions can contribute to adapt sensitization measures, inform future studies on eco-epidemiology of Ebola, animal surveillance measures and study the extended impact of EVD on rural communities.

The magnitude of onward transmission in Sierra Leone was felt most strongly among health personnel. Preliminary data suggests that health workers are between 21 and 32 times more likely to be infected with Ebola than people in the general adult population (WHO 2015). Identifying the situations in which health workers are exposed is a difficult task, depending on the occupation of the worker—clinicians, nurses, contact tracers or laboratory staff—and the settings—private clinics, outpatient offices, Ebola treatment centres—where that work takes places. An in-depth analysis of the factors that facilitated the contamination of health professionals and the study of adaptations and innovations needed in the health structures to deal with the EVD will prepare Sierra Leone to face future epidemics and to bring this current outbreak to its conclusion.

This project extends the work of a sister project currently being undertaken in Guinea. Activities in Sierra Leone will constitute a pilot study to provide preliminary comparative data with our work in Guinea, and allow us to develop networks for future research collaborations in Sierra Leone. More broadly, the research builds upon on the multidisciplinary experience of our team members in viral haemorrhagic fevers (Lassa fever and EVD) in West and Central Africa, in particular with WHO, FAO, research institutes and the Guinean Ministry of Environment, Water and Forests and the Ministry of Health to support the efforts of the struggle against the EVD.

The methodology used will be exclusively qualitative (semi-structured interviews, focus groups, participant observations). Although our methodological orientation is rooted in anthropology, we also seek to innovate an interdisciplinary approach (ecology, epidemiology, virology, anthropology) that can contribute to the understanding and management of epidemics. Extending preliminary ethnographic work in afflicted villages and participant-observations of the public health response, this project seeks to illuminate the everyday realities of living through the Ebola outbreak.

The study will take place in Freetown and in the Bo, Kenema and Kaliahun districts of Sierra Leone. It will focus on the Survivors’ Clinic at the 34th Military Hospital and on the health systems and NGO networks that were mobilised to manage EVD in Kenema and Bo districts. The animal-human work will build upon research for Lassa fever conducted in villages in Bo and will expand to the border areas with Gola National Park.

# General information

**Protocol title:** Anthropology of the Ebola Outbreak: Social Transformation, Surveillance and Resilience

**Funder:** ESRC

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*NB: The CVs of principal investigators and co-investigators are presented in Annex 1.*

# Background information & Rationale

## Background

“Critical events” such as epidemics have the capacity to reorder social relations of all kinds, upending individual and collective modes of existence (Das 1995; Lakoff and Collier 2004). In addition to acute physical and emotional suffering, contagion precipitates panic and blame, entrenching inequalities (Alcabes 2004; Anderson 2006; Farmer 1992; Hewlett and Hewlett 2008; Epelboin, Anoko, and Formenty 2005). Outbreaks are also occasions when global concerns impinge on matters of state, reconstituting the domains of government and citizenship, causing deadly frictions between scientific rationalities, public health norms, and cultural processes (Hinchliffe 2014; Keck 2008; Tsing 2004). Like other ‘disasters’, outbreaks have the capacity to exacerbate existing social tensions and create new ones, to trigger both administrative collapse and political progress (Choi 2009; Janzen 2011; Leach and Dry 2010).

While conducting research in Guinea and Sierra Leone on Lassa fever members of this team were invited by the Guinean Ministry of Environment, Water and Forest, and the Ministry of Health to support Ebola containment efforts, specifically by exploring the forms and social significance of human-animal contact, and the population’s mixed reactions to outbreak responses. Over the past months, members of this team have worked closely with the WHO, FAO, Clinical Research teams, IRC, MSF NGOs and Governmental actors helping to illuminate the primary routes of infection, support efforts to reduce secondary transmission and provide recommendations on how best to conduct research in the context of an emergency.

This protocol builds upon insights from these interdisciplinary collaborations and seeks to extend them by consolidating anthropological lines of inquiry. This twelve-month study will form the basis of a research proposal for a more extensive study of the impacts of the outbreak on rural communities and health infrastructure and identify key areas for building social resilience for future outbreaks.

## Rationale

Extending ongoing anthropological research in afflicted villages and participant-observations of the public health response, this project seeks to illuminate the impact of the Ebola response on rural livelihoods and health infrastructures. While our methodological orientation is rooted in anthropology, we also seek to innovate interdisciplinary tools that can contribute to the understanding and management of this and future outbreaks. Our research will explore the impact of the Ebola outbreak and its attendant public health interventions on two key areas:

A. Human-Animal interactions – e.g. hunting, consumption, ecologies

Prevention of zoonotic origin of epidemics is partly based on the decreased risk of zoonotic transmission (Baize et al 2014; Formenty 1999; Groseth et al 2007; 9et al 2007). This requires a richer understanding of the interactions between people and animals, such as hunting, consumption, overlapping domestic and agricultural areas, or ritual practices bans these interactions, such as hunting are often ineffective and even anti-productive. Indeed, these measures rarely consider the social structures that govern how people interact with animals and the environment (Brown and Kelly 2014; Leach 2008). Preliminary observations form our previous work with the World Organization for Food and Agriculture of the United Nations (FAO) suggests that the epidemic of EVD has permanently altered the interactions between humans and animals, with potential consequences the social, food security and public health.

Building upon previous work with the Food and Agricultural Organisation, we will investigate how the EVD outbreak has changed the relationship between humans and the natural environment (the “bush”) and to what extent alternative interactions have emerged between people, animals, and the environment. By providing finely-grained insights into how rural inhabitants understand the ecological aspect of Ebola virus in its natural environment, we will development recommendations on risk communication arising from a constant threat (zoonotic spillover from wildlife), and how current containment messages can form the basis of a preparedness strategy once the current outbreak is over.

B. Health Care Capacities – e.g. workers, training, infrastructures

Outbreak control depends upon the isolation of cases, contact tracing, secure burial, awareness of preventive measures, training of health personnel in the early detection of cases and the establishment specialized treatment centers. However, since the beginning of the epidemic cases of EVD has persisted among health personnel (Brown et al 2014). Our previous work with MSF, IRC and the Guinean Ministry of Health suggest that the persistence of infections is partly caused by the continuation of risky behavior among health workers face the EVD, a reinterpretation of the objectives of the response, and the difficulty of applying the prevention protocols and control of hospital infections (Fauci 2014). Moreover, the experience of some members of our team in controlling hemorrhagic fevers gives us a basis to analyze in depth the modes of transmission, adjustments of health facilities and difficulties to track prevention and protection protocols (Borchert 2007).

Drawing on experiences working with building ETUs, survivors, training contact-tracers, MSF volunteers and blood donor peer-educators, we will shed light on the transformation and adaption of local health infrastructures in the wake of the outbreak. Providing finely grained social science insight into the motivations, understandings and career trajectories of this emergency work force, will help provide key insights on how to support and enhance the health care system as the epidemic wanes.

# Study objectives and use of results

## Primary Objectives

1. Study the impact of EVD on the interactions between humans and animals in rural areas to help refine public health efforts to reduce the risk of zoonotic transmission.
2. Explore the transformations (infrastructure and health personnel) of the health system following the outbreak of MVE, to improve responses to future outbreaks.

## Secondary Objectives (Theme Specific)

1. Zoonotic transmission:
   1. Describe human-animal interactions in their socio-cultural context to understand the risk factors for zoonotic transmission.
   2. Explore how the EVD has changed the relationship between rural communities and their environment to understand the impact on food security and social relations.
   3. Study the knowledge of rural populations on the natural ecology of Ebola virus and how they contextualize the various rumors related to zoonotic transmission to refine prevention strategies and control of outbreaks of zoonotic diseases.
   4. Analyse how awareness messages can be transferred to a prevention strategy when complete current epidemic
   5. Explore local knowledge of the ecology of wildlife to inform potential studies on the ecology of the virus in wildlife.
2. Human transmission:
   1. Study the experiences and understandings of the first health personnel in response EVD (community health workers, laboratory technicians, health workers) to detail the basic capabilities to strengthen the Guinean health services.
   2. Conduct in-depth interviews with key representatives of the response system of national and international health (national coordination, MSF, International Rescue Committee, WHO, etc.) to identify strategies for the prevention and response to epidemics.
   3. Explore how the response to the EVD has transformed infrastructure (laboratories, reception rooms-triage, treatment room, obstetrics), including a critical analysis of structures used during the outbreak (mobile laboratory, Ebola Treatment and Transit Centers, separate holding centers for pregnant women, survivor clinics) to better understand the obstacles and potentials for outbreak preparedness.

## Use of results

We expect to maintain a continuous dialogue with research participants, collaborators and national and international public health experts engaged in the response in order to prepare and improve communication strategies as appropriate.

Continuing work with communities which we have engaged with in the context of Lassa fever will help identify concerns and suggest additional public health measures, if need be.

Results will be used to build public awareness for animal-surveillance and EVD containment, to enhance health care capacity, to contribute to capacity building of health staff and to formulate public health recommendations.

Results will be made available to key members in the response during a dissemination workshop in Freetown in early 2016 and will also be fed back to rural communities before the close of the project.

Results will be communicated on relevant workshops and conferences in order to share them with actors of relevant scientific and public health communities.

Finally, we intend to publish the results in peer-review journals including top-ranked social science and high-impact public health journals.

The project will also form the basis of a larger grant proposal for further anthropological research on VHF transmission in the West African Region with key collaborators in Sierra Leone.

# Study Design

Participative research is based on qualitative research methods. Qualitative research is an iterative, cumulative process. Starting from an open research question, qualitative research aims to (i) collect data through various methods, (ii) analyse and interpret this data intermittently, (iii) adjust questions or develop new questions based on emergent themes, (iv) collect further data and continue this process until the point of saturation is reached, i.e. when no new information emerges from the data and no new insights are generated.

Qualitative, participatory methods include **repeated** observation, informal conversations, semi-structured interviews, in depth interviews and literature review**. These** will allow the researchers to understand and describe the different processes, compare perceptions and actions.

## Study population and sampling

Sampling will be theoretical (i.e. informants are purposefully selected based on the analysis of upcoming information) and will be dived into the key two areas of focus. The data collection will take place in three phases of 2-3 months: June-August 2015 and September-November, 2015, and finally January-February (2016).

The first objective examining “zoonotic transmission” will focus on areas previously identified during field missions with FAO, namely rural Bo district. Several members of our team (assistant CPI and Co-investigators) are already worked in those prefectures and built trust among communities. Villages will be purposively selected to include villages of various size and distance form main transport access. Individuals for interview will be chosen according to convenience, although an effort will be to include representation from various groups (socio-economic status, religion, ethnic group, age, sex) as well as those knowledgeable of the community (chief, teachers) or known to engage in the behaviors of interest.

The second objective exploring “human transmission” will be primarily based in Freetown (34th Military Hospital, survivors’ clinic) at Bo and Kenema where some members of our team have worked on identifying human resources that can be used as starting point to reinforce emergency measure for the health system at community and district levels.

Purposive sampling categories that will *a priori* be included in the sampling frame are: health care workers (including laboratory technicians, contact tracers, ambulance drivers); local, national and international public health experts; additional key informants from the villages including, such as traditional healers, community leaders, teachers, etc.; regular community members to whom health promotion information is targeted. Sampling will continue until saturation, when no new information is observed and there are no gaps in the emergent theory.

### Observations

Observing the everyday behaviour of people in their own environment is important to compare the performance with their thoughts that emerge during discussions. The data obtained by participant observation can solve a gap between knowledge and practice of concrete behaviours and self-reported. Given the sensitivity of some of the research questions (experiences with contamination, hunting etc.), participant observation is a critical way to identify areas of concern that are difficult to articulate.

The observations in the various research sites will be first noted in a notebook including date, place and people. Informal conversations will not be recorded in order not to bias information, but will be written up as soon as possible following the interaction. These notes will be then elaborated in order to identify topics and gaps that could be explored in further observations. People will be informed about the aim of our presence and our study and we will obtain oral consent from them.

### Semi-structured interviews

Semi-structured interviews using an interview guide will explore, depending on the respondent: EVD knowledge, perceptions of risk in the environment, experiences during the outbreak, professional and social experiences.

### Focus group discussions

FGDs will be conducted with community members and health workers. Group discussions will be recorded and transcribed. We will include key leaders of the response, community health workers and other health personnel. In Bo, interviews will focus more on rural populations and transcripts will be translated if necessary. We will use a topic guide, including e.g. perception of EVD risk, professional experiences, change in practice since the outbreak.

## Data analysis

In accordance with the principles of participant research, data collection and analysis will be continuous, concurrent and iterative, based on grounded theory. Preliminary data (from interviews, focus group discussions, participant observation, and informal discussions) will be intermittently analysed in the field, leading to refinement of theory and further sampling. Analytic induction will categorise themes grounded in the data, will put these in dialogue with the existing literature, and will be further evaluated in relation to existing social science theory. This approach will allow the construction of theory from the data. Audio records of all interviews and notes of the most relevant informal conversations and observations in the field will be maintained. In the case of informal conversations, notes will be taken immediately after the conversation or as soon as is practical.

# Time table of the Project

|  |  |  |
| --- | --- | --- |
| Major achievement or outcome | Activities | Completion date |
| Exploratory Mission | Protocol refinement and submission | June |
| Contextual analysis | Structured observation, interviews, focus group discussions | July |
| Team feedback/trouble shooting | Skype | July |
| Data collection | Structured observation, interviews, focus group discussions | August |
| Sharing preliminary results within social science team | Skype | September |
| Data Collection | Structured observation, interviews, focus group discussions | October |
| Sharing preliminary results with trial partners | Workshop | November |
| Write-up of zoonotic paper | Manuscript will be produced for a public health journal | December |
| Data Collection | Structured, observation, interviews, focus group discussions | January |
| Sharing of results within social science team | Skype | February |
| Data Collection | Structured, observation, interviews, focus group discussions | February-March |
| Dissemination | Workshop and discussions with villages in Bo | April |
| Write-up of health worker papers | Manuscript for social scientific and public health journal | May-June |

## Researchers

|  |  |  |
| --- | --- | --- |
| Name | Institution | Roles |
| Almudena Marí Sáez | Institute of Tropical Medicine and International Health, Charité | PI, research lead for zoonotic risk & contact tracers |
| Ann Kelly | University of Exeter | PI, research lead for human-zoonotic risk laboratory staff |
| Hannah Brown | Durham University | PI, research lead for clinical environments |
| Foday Sahr | University of Sierra Leone | Co-investigator, supervision of data collection, expertise in EVD response |
| Rashid Ansumana | Research Director, Mercy Hospital Research Laboratory | Co-investigator, supervision of data collection, expertise in EVD response |
| Matthias Borchert | Institute of Tropical Medicine and International Health, Charité - Universitätsmedizin Berlin | Co-investigator, support on qualitative methods |
| Jesse Bonwitt | University of Durham | Co-investigator, expertise on human-animal interactions |
|  |  |  |

## Human resources and follow up

A social scientist / research assistant will be recruited through the University of Sierra Leone. He/she will be required to speak Mende or Krio as wells as English to cover the linguistic needs in the research settings.

The social scientist will be followed up by the researchers taking turns during the data collection process. The national PI will ensure continuous supervision. The expatriate members of the research team are planning to be in Freetown at least two weeks a month during the six months of the project.

## Safety Considerations

The researchers have experience in working in the context of Ebola and have undergone Ebola safety briefings. Special attention will be paid during visits to Ebola Holding Centres and Treatment Units. The team will always consider biosecurity when considering working with surveillance teams. The team will update safety protocols according to evolving national and international guidelines.

## Quality Assurance

Quality assurance and methodological integrity of the research will be a collaborative and iterative endeavour, involving routinely monitoring the accuracy of transcriptions and depth of observational description. A sample of interview transcriptions will be checked with a native speaker in country for accuracy before the audio recording is deleted. In the case of the Sierra Leonean research assistant, support will include on the job training by the project team. Carrying out some elements of the participant observation as a team, and holding bi-monthly meetings over skype and online via wiki-notes to discuss emerging data, results and insights will provide opportunities to triangulate and critically interrogate the data throughout the collection period. The project team will maintain the highest levels of rigour in collaborative and independent research, writing up detailed notes in the field and putting these in a shared file in Dropbox to capture as much detail and receive team feedback as soon as possible.

## Backup and Security

Data files will be stored in triplicate on the computer hard drive in different folders and backed up onto an external data drive daily. Provided there is a reliable Internet connection, data will be uploaded daily onto a cloud storage service (e.g. Dropbox) or emailed to administrators at Charité who can store the data on the university system. If the latter option is not possible, data will be backed up onto a second external hard drive, stored in a separate location from the computer and the first drive. Owing to the potentially sensitive nature of the data, these files and drives will be encrypted.

# Expected Outcomes of the Study and Dissemination of Results and Publication Policy

## Expected Outcomes

Our project will join the efforts to assess front line worker needs and to lend them a voice to express their views and concerns.

We expect the study to provide insights into how surveillance work is perceived by workers and how enhance working conditions.

The study is expected to inform discussions on how to make best use of health care workforce following the end of the outbreak.

The study will identify further relevant knowledge gaps that merit research, and avenues for its pursuit in the context of preparedness efforts.

Last but not least, the project will strengthen the existing research cooperation between Sierra Leonean, British and German institutions and academics, and foster its extension e.g. towards Sierra Leonean social science.

## Dissemination and publication

Given the nature of this study and the circumstances of the ongoing EVD epidemics, the results of the anthropological research will be shared as rapidly as possible with local and international health authorities, and with the scientific community at large.

Results will be communicated to the study participants during a workshop in Freetown and with smaller dissemination workshops within rural areas of Bo district. Project collaborators will also be participating in dissemination workshops associated with other projects, which will provide another platform for discussion of our results.

Our project includes a strong commitment to support the needs of public health decision makers through the production of working reports and summary briefings.

Research results will be updated regularly on university weblogs, Facebook and other social media related to the project to ensure dissemination to a wider public.

A publication plan will be drafted to ensure a fair representation of all the Sierra Leonean and European partners. Co-authorship will be based on the Uniform Requirements for Manuscripts Submitted to Biomedical Journals as defined by the International Committee of Medical Journal Editors (ICMJE).

Qualitative data will be filed with the UKDSS, subject to the necessary consent to serve in future comparative analysis of outbreaks of EVD.

# Problems Anticipated

There are several challenges to the proposed study but researchers’ extensive experience in implementing projects and conducting research in Sierra Leone will help address these issues.

## Contextual

Health staff have been approached by different research groups and humanitarian agencies to participate in different projects. We can encounter a reticence to talk and share their experience to new researchers coming in to the ground. Furthermore, discussions regarding animal consumption can be a sensitive area particular in the wake of hunting bans. However, we believe that the project’s linkage with ongoing research teams, as well as with

## Technical

Structured observations and interviews may introduce a respondent bias where the participants are keen to please the researcher. We will include a wash out period to ensure that participants are comfortable with having an observer by their side.

# Ethics

## Ethics approval

We are applying to both the Office of the Sierra Leone Ethics and Scientific Review Committee and to the internal review board of University of Exeter, Durham University and Charité – Universitätsmedizin Berlin.It is envisaged that applying to four two bodies will enable a comprehensive review that is able to reflect the interests and positions of the different actors involved. Full approval from the Sierra Leonean Committee is a requirement for starting research. Given the urgent context and the timing of ethics board meetings at Charité, Durham and Exeter, the research will proceed with provisional rather than full approval from these institutions. The study will adhere to the current guidelines on ethical practice for research of both institutions, modifying practice as necessary if these guidelines change during the period of fieldwork.

## Informed Consent

Participants will be included in the study only if they (or parents or legally acceptable guardians of subjects under 18 years of age) give informed oral consent.

Participants will receive information about the research in which they are being invited to participate in a language they can understand. The study information and consent forms for semi-structured/in-depth interviews and focus group discussions are primarily written in English (Annex 2). To ensure that those who are illiterate can understand what is being asked of them, the information sheet and consent form will be read out loud verbatim and explained to the participant, parent or guardian, by a trained member of the research team, who will orally translate into Krio or Mende if need be. Details about the study and its benefits and potential risks will be explained. The participant’s right to decline participation and their ability to withdraw at any time will be emphasized. Once all questions have been answered, verbal consent (Yes/No) based on their decision will be sought to participate in the study, and documented in written by a witness or by the person who obtained the consent. Children over the age of 12 years will be requested to assent to participation in the study in addition to the consent of their parent or guardian. Informed consent for observations and informal conversations will be obtained informally: individuals will be informed verbally about the study’s details, benefits and potential risks, any questions will be discussed, and verbal consent to participate will be sought and documented in writing in the field notes.

All participants will be free to withdraw from the study at any time. Verbal consent is preferred rather than written consent in this study for several reasons: a) to avoid problems of illiteracy in the study population which renders written consent difficult to obtain in practice; b) written consent, requiring a signature, can affect trust between participants and researchers and willingness to participate in the study in these settings, due to a lack of congruence between the types of questions asked and the requirement to sign a document; c) the perception that signing a document undermines anonymity of study participation. Importantly, the form of consent required may affect the experience of the interview for the respondent and may, for example, lead some respondents to provide socially desirable answers or to refuse to answer sensitive questions. A detailed justification of the use of verbal consent in qualitative ethnographic studies is provided in Annex 3.

## Privacy and confidentiality

All collected personal data (field notes, interview transcripts, preliminary analyses) will be kept in a locked drawer (paper-based data) or password-protected with secure login (computer-based data). Data will only be available to the study team. Participants’ names will not appear in the final database used for analysis. Publications will only contain aggregate data or anonymised individual cases.

## Inducement

Individuals will be free to choose to participate or not in informal interviews or discussions as well as formal interviews or observations. No financial payments beyond tokens of appreciation (beverages, snacks etc.) and reimbursement of travel costs will be offered to informants.

## Community participation

Before the start of the study, the study team will meet (again) all participants and stakeholders in the trial in order to explain the purpose of the study, the benefits and risks to the participants and overall benefit for the community. Several meetings, visits or dialogues may be necessary in order for selected people to fully understand and approve of participation in the study. Regular meetings with frontline workers and their families will be held with the study team to inform them about the progress of the study. The lead persons in the anthropological field team will be responsible for ensuring ongoing communication between the study team and the key actors.

## Risks and discomfort

The anticipated risks for participants are limited. Experience from Guinea shows that community members and health workers tend to be content, sometimes relieved to share their experiences with the Ebola outbreak and response, provided a trusting relationship can be established, and the timing and set-up of the encounters with researchers are conducive for an open exchange. Nevertheless, the following challenges are anticipated:

* In some interviews, sensitive and confidential information is likely to be addressed, and given the severity of Ebola disease, unpleasant memories can be provoked. If at any point participants feels uncomfortable, or do not want to answer a specific question, they may request to skip the question or to end the interview. They will not be pressed to answer any questions they do not wish to answer.
* Participant observation will entail an observer taking up space in the health facility to view procedures. This could distract or alter the procedures a health worker would normally undertake, and may make health workers feel uncomfortable. To prevent this, we will visit the health facilities repeatedly, explain the objectives and techniques of qualitative research, reassure staff that their professional performance will not be evaluated, and try make the health worker remain at ease.
* Given the potential sensitivity of this research topic there is a need to avoid the production of rumours which could impede the Ebola response and cause future harm to local people, for example if the unexplained presence of the researchers contributes to fear of using health services. For this reason, maintaining an open dialogue with participants in the study is very important. If necessary, the research team will hold open community meetings where the purpose of the research will be discussed.

To preserve confidentiality, the digital recording and transcript of the interview will be stored on a password-protected computer. Only the members of the project team will have access to this information, and they will not be allowed to share it with anyone else. Participants will not be named in any reports or publications that are written on the basis of this project.

# Support for the Project

The partners of the anthropological component are being supported by the University of Exeter, Durham and Charité Berlin through an UK Economic and Social Science Research award (ESRC). Office space and logistical support (e.g. internet connectivity) will be financed through that project. The Ministry of Health and the Ministry of Defence of Sierra Leone support the project by providing access to their facilities, and by allowing their staff to partake in the research.

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Fauci, A. S. (2014). Ebola—underscoring the global disparities in health care resources. *New England Journal of Medicine*, *371*(12), 1084-1086.

Farmer, Paul. 1992. AIDS and accusation: Haiti and the geography of blame. Berkeley, Los Angeles and London: University of California Press.

Farmer, Paul. 2001. Infections and inequalities: The modern plagues. Berkeley, Los Angeles and London: University of California Press.

Formenty, Pierre, et al. 1999. Ebola virus outbreak among wild chimpanzees living in a rain forest of Cote d'Ivoire. Journal of Infectious Diseases 179, Supplement 1: S120-S126.

Hewlett, Barry, and Richard Amola. 2003. Cultural contexts of Ebola in Northern Uganda. Emerging Infectious Diseases 9 (10):1242-1248.

Hewlett, Barry, and Bonnie Hewlett. 2008. Ebola, culture, and politics: The anthropology of an emerging disease. Belmont, CA: Thomson Wadsworth.

Hinchliffe, Steve 2014. More than one world, more than one health: re-configuring

interspecies health. http://dx.doi.org/10.1016/j.socscimed.2014.07.007,

Janzen, John M. 2011. Afri-global Medicine: New Perspectives on Epidemics, Drugs, Wars, Migrations, and Healing Rituals, in Medicine, Mobility, and Power in Global Africa: Transnational Health and Healing, Dilger, Hansjörg, Abdoulaye Kane, and Stacey A. Langwick, eds. Bloomington, IN: Indiana University Press: pp. 115-137.

Keck, Frédéric. 2008. From mad cow disease to bird flu: transformations of food safety in France. In Biosecurity interventions: global health and security in question. New York:

Columbia University Press, pp. 195-227

Leach, Melissa. 2008. Haemorrhagic fevers in Africa: Narratives, politics and pathways of disease and response. Steps Centre working papers www.steps-centre.org: Creative

Commons.

Leach, Melissa, and Sarah Dry. 2010. Epidemic Narratives. In Sciences, Governance and Social Justice, edited by S. Dry and M. Leach: Earthscan publications.

Leroy, Eric M., et al. 2009. Human Ebola Outbreak Resulting from Direct Exposure to Fruit Bats in Luebo, Democratic Republic of Congo, 2007. Vector-bourne and Zoonotic

Diseases 9:723–728.

Tsing, Anna. 2004. Friction: an ethnography of global connection. Princeton, NJ: Princeton University Press.

WHO, Health worker Ebola infections in Guinea, Liberia and Sierra Leone, WHO/EVD/SDS/REPORT/2015.1

# Annexes

## Curricula vitae

### Principal investigators

#### Marí Sáez, Almudena

ALMUDENa mari saez

22 June 1976

[almudena.mari-saez@charite.de](mailto:almudena.mari-saez@charite.de)

Skype: bonagandigi

**Education**

2012 24th February

Ph.D. in Anthropology

University of Granada, Granada (Spain)

Dissertation: *“Fulbe Women Between Crossroads and Changes: Pulaaku, Embodied Agency, Reproduction, and Sexuality.”* <http://digibug.ugr.es/handle/10481/21622>.

2008 Master’s Degree in Anthropology and Ethnology

EHESS, Paris (France)

Master’s Thesis: *“Constructing Female Identity in Borgu (Benin)”*

2006 Bachelor’s Degree in Anthropology

Universidad Autónoma de Madrid, Madrid (Spain)

**Work experience**

2015 For the Institute of Tropical Medicine Antwerp, to implement the Ebola Tx clinical trial

J/M using Ebola convalescent plasma.

2014 For International Rescue Committee: to establish the link between the ETU team and the communities where the ETU is located, and study the perceptions people have in regards to the ETU.

2014 Study on community reticence to Ebola Outbreak response activities, on behalf of Ministry of Health of Guinea.

2014 Study on Ebola primary transmission and spread of the Ebola epidemic into wildlife with Robert Koch Institut and Charite: <http://www.rki.de/EN/Home/homepage_node.html>

[2013-

Now] Lassa fever in Guinea and Sierra Leone: rodent control, and seasonality of Human exposure to rodent (LAROCS)

Funded by the German Research Foundation (DFG)

Institute of Tropical Medicine and International Health,

Charite – Universitatsmedizin Belin.

[2013] Doctors of the World, Koinadugu District (Sierra Leona)

**Main functions**

Analysis of Gender Based Violence and health assistance given to survivors

Establish a Gender Based Violence Network with Human Rights Organization

Produce a cultural strategy to improve the access to health to the population, the analysis of the role of traditional birth attendants and traditional healers and their collaboration with the public health system

[2012] Gender's technical assistance in Mauritania, Andalusia Fund of Municipalities for

International Solidarity (FAMSI in Spanish)

**Main functions**

Documentary analysis and evaluation of women’s political participation, gender training for technicians of Municipia and PERICLES program in Mauritania, elaboration of gender guidance for community development plans

<http://issuu.com/andaluciasolidaria/docs/elles_sont_la_diagnostique_participation_politique?mode=window&viewMode=singlePage>

[2011] Save the Children project evaluation: “protection and prevention of sexual violence against

Children in Nouakchott (Mauritania)”, Periferia Consultancy

**Main functions**

Documentary analysis, design of questionnaires, fieldwork, analysis of data and final report writing

<http://www.periferia.es/trabajo.php?id=76>

[2010] PhD research on Sexual and Reproductive Health (Republic of Benin)

**Main functions**

Fieldwork, design methodological tools (questionnaires, observation, photography’s, diary writing), make interviews: populations, health workers in maternities and hospitals, civil organizations. Analysis data and Phd thesis writing.

[2008] Master’s research in Republic of Benin

**Main functions**

Fieldwork, design methodological tools (questionnaires, observation, photography’s, diary writing), make interviews, analysis data and writing.

[2006] FER (European program for refugees) in the Spanish Commission for Refugees Aid

**Main functions**

Adult language educator in Spanish, job research training, use of social services training.

[2005] Study of viability to women’s participation in a fishing development project in Smala

(Marocco) IPADE.

**Main functions**

Documentary analysis, design of questionnaires, fieldwork, analysis of data and final report writing.

[2001- Adult language educator, Sister Pascualina Centre in Republic of Benin

2004] **Main functions**

Adult language educator in Bariba language of Benin’s Borgu province, health training, gender training, communitarian leaders training.

**Publications and Conference Papers**

Brown H, Kelly AH, Marí Sáez A, Fichet-Calvet E, Ansumana R, Bonwitt J, et al. (2015) *Extending the “Social”: Anthropological Contributions to the Study of Viral Haemorrhagic Fevers*. PLoS Negl Trop Dis 9(4): e0003651. doi:10.1371/journal.pntd.0003651

Mari Sáez, A. et al (2014) *Investigating the zoonotic origin of the West African Ebola epidemic*, EMBO Molecular Medicine. <http://embomolmed.embopress.org/content/early/2014/12/29/emmm.201404792>

[2014] Conveying the pulaaku ideal through rituals: the body and emotions, in Afican realities: Body, Culture and Social Tensions, Cambridge Scholar Publishing.

[2013] The milk and the reproductive ideal among Fulas (animals and humans), Oráfrica, pp.: 40- 52.

[2012] We deliver, Are we deciding on the pregnancy, delivery and postpartum medical attention? AIBR nº7, pp: 400-405.

**Conference Papers**

2014 Understanding outbreaks and control of haemorrhagic fevers, 15th July at the London School o Hygiene & Tropical Medicine.

2014 Emerging knowledge working on haemorrhagic fevers in Guinea: Ebola Outbreak (Guéckédou) and Lassa (Faranah), 1st August at the EASA conference.

2011 Pulaanaaku: Ethnography of Embodied Practice of Honor Among Borgu’s Fulani (Benín),

XII Antropology Conference, F.A.A.E.E., León. September 6-9

ISBN: 978-84-9773-583-4.

2010 Honor, Economy and Power: The Least Access to the Health of Borgu’s Fulani Women,

VII Iberian Conference of Iberian Africanists (CIEA), Lisbon. September 9-11

<http://repositorio.iscte.pt/>

2009 Representations and Bodily Practice: Women’s Health and Illness in Benin,

I International Conference on Cultre and Gender: The Culture of the Body, Elche.

November 11-13

ISBN: 978-84-693-0659-8.

2008 Identity Construction of African Women in the Borgu Region (Benin Republic)

XI Antropology Conference at FAAEE, San Sebastian. September 10-13

IN: “Feminismos en la Antropología: Nuevas Propuestas Críticas,”

Liliana Suárez, Emma Martín y Rosalba Hernández (Coords.): 241-258. Donostia.

ISBN: 13-978-84-691-4958-4.

**Teaching Experience**

[2012] Complutense University, Madrid, Visiting Lecturer for course,

"Fulani Kinship Organization in Benin" Anthropology of Kinship, February 8.

[2012] Complutense University, Madrid, Visiting Lecturer for course,

"Introduction to African Traditional Religions: The Bungibu Case Study of Benin (West Africa), part of the program “Ritual and Belief,” February 29.

[2012] Castilla-La Mancha University, Visiting Lecturer for course,

“Cinema-Cycle” Forum: "Essentials for Life" scheduled for FARMAMUNDI, Highlighted Topic: Health and Gender, March 14.

[2012] Autónoma University, Madrid, African Studies Group, Visiting Lecture for course, "Gender Construction in Africa" March 9.

[2012] Complutense University, Madrid, Visiting Lecture for course,

“Working During the Days of Applied Anthropology: Exposing Development.

“A Qualitative Diagnosis of Sexual Violence in Mauritania,” March 22.

[2012] La Salle University, Visiting Lecture for course,

"The Biological v. the Social Body” Program in Continuing Education, May 8.

[2011] Complutense University, Madrid, Visiting Lecture for course,

"Anthropology from a sub-Saharan African Region: Practices, Tensions, and Negotiations," in the action plan tutorial for Anthropology, May 19.

[2011] Complutense University, Madrid, Visiting Lecture for course,

"The centrality of Kinship in Social Life: A Bariba Case Study" part of the Introduction to Social Anthropology program, May 25.

[2011] La Salle University, Visiting Lecture for course

"Studying Others: African Worldviews " Program in Continuing Education, December 13.

**Professional Affiliations**

Member of the European Association of Social Anthropologists (EASA)

Member of the Association of Iberoamerican Anthropologists Network (AIBR)

Member of AFRICAInES (Research Group at Granada University): <http://antropologia.ugr.es/pages/investigacion/group.php?id=SEJ-491>

Member of SACUDA (Research Network for Africanists for Health and Development)

**Languages**

Spanish: Native speaker.

French: Proficient written and spoken.

English: Proficient reading, intermediate written and spoken.

Baatonum: (Bariba language of Benin’s Borgu province) Fluent written and spoken.

#### Brown, Hannah

**HANNAH BROWN**

Durham University

Hannah.brown@durham.ac.uk

I am a social anthropologist with specialisation in medical anthropology, epidemics, economies of care, the state, and practices of governance. I have worked in Western Kenya for the last 15 years, on a range of health and development related topics. My most recent research was an ethnographic study of health management in this region. This work explored issues around governance, bureaucracy, the state, and global health interventions. I currently hold an ESRC future research leaders award and am developing a new project on zoonotic diseases in Africa. I also hold a two grants relating to the Ebola response in West Africa.

**POST-GRADUATE EDUCATION:**2010: Ph.D. in Social Anthropology, University of Manchester.

2005: MA in Anthropological Research, University of Manchester.

**Languages**: I am an advanced speaker of Spanish, Swahili and Luo.

**RECENT/FORTHCOMING PUBLICATIONS**:

* Hannah Brown and Ruth Prince, eds. (Forthcoming September 2015): *African Studies Review.* Focuson ‘Volunteerism in Africa’*. African Studies Review*
* Hannah Brown and Maia Green (Forthcoming September 2015): *Performing Work in Africa’s New Economies: Volunteering as Status, Practice and Labor in Development Architectures.* In Focus on ‘Volunteerism in Africa’ *African Studies review.*
* Brown, Hannah (2015): Global health partnerships, governance, and sovereign responsibility in western Kenya*, American Ethnologist* 42(2): 340–355.
* Brown, Hannah (accepted): Managerial relations in Kenyan health care: Empathy and the limits of governmentality, *Journal of the Royal Anthropological Institute.*
* Hannah Brown and Ann Kelly (2014): Material proximities and hot spots: Towards an anthropology of viral haemorrhagic fevers, *Medical Anthropology Quarterly*
* Brown, Hannah (2013) “Home-Based Care is not a new thing”: Legacies of domestic governmentality in Western Kenya. In Ruth Prince and Rebecca Marsland (eds.) *Changing forms of public health in Africa: Ethnographic perspectives* Ohio University Press, Athens.
* Brown, Hannah (2012): Hospital domestics: Care work in a Kenyan hospital. Alice Street and Simon Coleman (eds.), special issue on Hospital Heterotopias, *Space and Culture* **15**(1): 18-30*.*
* Hannah Brown, Stein Sundstøl Eriksen and Maia Green, eds. (Under review) *Emergent States: Politics, Culture and Institutions in African Governance.* James Currey.

**GRANTS and AWARDS:**

* ESRC Future Research Leaders Award (PI) 'People, animals and infectious disease transmission: A new synthesis, £240,901.60
* ESRC Urgency Mechanism (CoI) ‘Anthropology of Ebola: Transmission Dynamics and Outbreak Socialities’ £199,142.54
* Response to Humanitarian Catastrophes (R2HC) Dfid/Welcome Trust (Co-PI): Participatory behavioural change to reinforce infection prevention and control for Ebola virus disease in Sierra Leone, £181,127
* Lassa Fever in Guinea and Sierra Leone: rodent control, and seasonality of human exposure to rodents (LAROCS)(Advisor)
* (2012) Short-term research fellowship (five months) awarded by Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine.
* (2011) British Institute in East Africa small grant award (£1000)
* (2009) Emrys Peters Essay Prize for ‘Hospital Domestics: Care Work in a Kenyan Hospital’.
* (2004) ESRC 3+1 quota studentship award at the University of Manchester.

#### Kelly, Ann

**ANN H. KELLY, PhD**

Address: Department of Sociology, Philosophy and Anthropology

Byrne House, University of Exeter

Exeter, Devon EX4 4PJ

Email: [a.h.kelly@exeter.ac.uk](mailto:a.h.kelly@exeter.ac.uk) Tel: +44 (0)1392 725136

**CURRENT POSITIONS**

* Senior Lecturer in Anthropology, Deptartment of Philosophy, Sociology and Anthropology, University of Exeter
* Honorary Lecturer in Anthropology, Department of Global Health and Development, London School of Hygiene and Tropical Medicine

**EDUCATION**

2007    PhD, Social Anthropology, Cambridge University

2003    MPhil SAR, Social Anthropology, Cambridge University

2002   BA (*summa cum laude)*, Phi Beta Kappa, Anthropology, Princeton University

**RESEARCH**

2014-2016 PI, Anthropology of Ebola Outbreaks: Transmission Dynamics and Emergency Socialities, UK Economic and Social Research Council

2014-2016 Co-I, UK, Ebola Anthropology Response Platform, Wellcome-Trust DFID

2015-2016 PI, Detinova on Safari: Forgotten Histories of Global Health, Wellcome Trust Small Grant

2014–2016 Co-applicant, Beyond the Digital Divide: Sharing Research Data across Developing & Developed Countries, Leverhulme Research Grant

2013–2016 Co-I, Evidence in interdisciplinary contexts: the value and ethics of randomised

controlled trials, for an ESRC Research Network Grant

2013–2016 Co-applicant, Deutsche Forschungsgemeinschaft, Lassa Fever in Guinea and Sierra Leone: rodent control and seasonality of exposure to rodents

2011-2014      Co-I, Memorials and Remains of Medical Research in Africa, Open Area in

Europe Research Grant in the Social Sciences

2009-2012     Co-I, Replacing DDT:  Rigorous Evaluation of Spatial Repellents for the Control of Vector Borne Diseases, Bill and Melinda Gates Foundation, Global Health Grant

2010-2011     Co-I, Street Level Health Workers, Wellcome Trust Pilot Grant

2010-2011     Co-I, Understanding the Dynamics of Urban Flexibility and Reconstruction

Future of Cities Program, INSIS, Oxford

2009-2009   Writing Fellowship, Social and Ethical Implications of GM Mosquitoes, Brocher

Foundation Geneva

2007-2010    PI, Fieldworkers in East and West Africa, Wellcome Trust Bioethics Project Grant

**EDITED COLLECTIONS**

2012  **Kelly, A.H**., High, C., & Mair, J. (eds), *Anthropology of Ignorance and Unknowing,* London: Palgrave Macmillan

2012 **Kelly, A.H.** & Geissler, P.W. (eds), *The Value of Transnational Research: labour, participation care.* London: Routledge

**SELECTED PUBLICATIONS**

*In press.* Geissler, P.W. & **Kelly, A.H.** Field Station as Stage: Re-enacting Scientific Work and Affect in African Science*, Social Studies of Science*

*In press.* Extending the ‘social’: Anthropological contributions to the study of viral haemorrhagic fevers, Brown, H., **Kelly, A.H**. Marí-Sáez, A. Fichet-Calvet, E. Ansumana, R. N’Faly Magassouba, N’Faly, Sahr, F., Borchert, M. *PLos Neglected Tropical Diseases*

2014 **Kelly, A.H.** & Lezaun, J. Urban Mosquitoes, Situational Publics and the pursuit of inter species separation, *American Ethnologist,* 41(2): 368-383

2014 Brown, H. & **Kelly, A.H**. Material Proximities and Hotspots: Towards an Anthropology of Viral Haemorrhagic Fevers, *Medical Anthropology Quarterly*, 28(2):280-303

2014 Palmer, J., **Kelly, A.H**. Checci, F. & Jones, C., Changing landscapes, changing practice: Negotiating access to sleeping sickness services in a post-conflict society, *Social Science Medicine* 120: 396-404.

2014 Sangoro, O, **Kelly A.H**., Mtali, S. and Moore., S.J. Feasibility of repellent use in a context of increasing outdoor transmission: a qualitative study in rural Tanzania. *Malaria Journal*13 (1): 347.

2014Chaki, P. P., Kannady, K., Mtasiwa, D., Tanner, M., Mshinda, H., **Kelly, A. H**., & Killeen, G. F. Institutional evolution of a community-based programme for malaria control through larval source management in Dar es Salaam, United Republic of Tanzania. *Malaria journal*, *13*(1), 245.

2013 Geissler, P.W, **Kelly, A.H.,** Manton, J., Prince, R. & Tousignant, N. Sustaining the life of the polis, introduction to the special issue, ‘Street-level health work in African cities’, *Africa* 83 (4): 531–38

2013 **Kelly, A.H.** & Lezaun, J. Walking or waiting? Topologies of the breeding ground in

malaria control, *Science as Culture*, 22:1, 86-107

2013 Dörneman, J**. & Kelly, A. H.** It is me who eats, to nourish him: A mixed methods study of breastfeeding in post-earthquake Haiti**,** *Maternal and Child Nutrition,* 9(1): 74-89

2013 **Kelly, A.H.** Tousignant, N. Beisel, U. Knowing Insects – Insects as Vectors, Hosts

and Companions of Science, Special Issue of *Science as Culture,* 22:1

2012 **Kelly, A.H.** The Experimental hut: Hospitable Vectors. *Journal of the Royal Anthropological Institute*, 8 (S1): 145-160.

2011 **Kelly, A.H.** & Beisel U. Neglected Malarias: The Frontlines and Back Alleys of Global Health. *Biosocieties,* 4:71-87.

2011 **Kelly, A.H.** Will He Be There? A Meditation on Immobility and Scientific Labour. *Journal of Cultural Economy,* 4: (1) 65-79.

2011 Chaki, P. Dongus, S., Fillinger, U. **Kelly, A.H.**  & Killeen, G.F., Community Owned Resource Persons for malaria vector control: enabling factors and challenges in an operational programme in Dar es Salaam, Tanzania, *Human Resources for Health*, **9**:21

2010  **Kelly, A.H.** Pinder, M., Ameh D., Majambere S.,Lindsay, S.“Like Sugar and Honey”:  The embedded ethics of a larval control project in The Gambia, *Social Science & Medicine,* 70 (12): 1912-1919.

2010   Kirby, M.; Bah, P. Jones, C., **Kelly, A**.**H**; Jasseh, M., Lindsay, S. Social Acceptability and Durability of Two Different House Screening Interventions Against Exposure to Malaria Vectors, Plasmodium falciparum Infection and Anaemia in Children in The Gambia, West Africa. *American Journal of Tropical Medicine & Hygiene*, 83 (5): 965-972.

2008   Geissler, P. W., **Kelly, A.H.** Pool, R. Imoukhuede, B. “‘He is now like a brother, I can even give him some blood’ – relational ethics and material exchanges in a malaria vaccine ‘trial community’ in The Gambia. *Social Science and Medicine*, 67:5: 698 707.

2008   Pinder, M., Majambere, S., Ameh, D., Jeffries, D., Jawara, M., **Kelly, A**.**H**, Green, C., Hutchinson, R., Conway, D., Lindsay, S. Impact of Larviciding on Malaria in the Gambia. *American Journal of Tropical Medicine and Hygiene*, 79(6): 793

2003   **Kelly, A.H.** Research and the Subject: The Practice of Informed Consent. *PoLAR.* 26 (2): 182-195.

**COMMENTARIES**

2015 **Kelly, A.H.** Ebola, Running ahead, *LIMN*.http://limn.it/ebola-running-ahead/

2014 Chandler, C., Fairhead, J., **Kelly, A.H.** Leach, M., Martineau, F., Mokuwa, E., Richards, P. & Wilkinson, A. Ebola: limitations of correcting misinformation. *The Lancet*. DOI: http://dx.doi.org/10.1016/S0140-6736(14)62382-5

2014 Marí Sáez, A. **Kelly, A.H**, & Brown, H. Notes from Case Zero: Anthropology in the

Time of Ebola. *Somatosphere*, Sept. 16th, http://somatosphere.net/2014/09/notes from-case-zero-anthropology-in-the-time-of-ebola.html

2014 **Kelly, A. H.** Anthropology in Cyberland: exploring virtual teaching formats*Inspiring Academic Practice,* 1(2) https://education.exeter.ac.uk/ojs/index.php/inspire/article/ view/ 19

2014 Geissler, P.W., **Kelly, A.H.**, John Manton, J. and Tousignant, N. A Home for Science: the Anthropology of Tropical and Arctic Field-Stations, Feb. 17th, *Somatosphere,*

http://somatosphere.net/2014/02/a-home-for-science-the-anthropology-of-tropical and-arctic-field-stations.html

2013  **Kelly, A.H.** Snaring Vectors, in ‘Sentinel Devices’, *LIMN*, Issue 3.

2008 **Kelly, A.H.** Mosquito Huts: Wundercabinets and Social Models. Sept. 10th, *Somatosphere,* http://somatosphere.net/2008/09/mosquito-huts-wundercabinets-and-social.html

**CONFERENCES AND WORKSHOPS CO-ORGANIZED**

2016 Pace Science: Data, Acceleration, Duration, University of Exeter, Jan. 28th-29th.

2015 Zoonotic Horizons: Transciplinarity in the Age of One Health, Durham University, Oct., 8-9th

2015 Wellcome Witness Seminar, African Staff, Amani Laboratories, Tanzania, April 24th

2014 Symbotic Anthropologies: theoretical commensalities and methodological mutualisms, April, 13-16th.

2014 The Trial on Trial: evidence in interdisciplinary contexts, University of Essex, March 28th

2013 Homes (Away From Home) For Science: The Anthropology Of Tropical And Arctic Field-Stations, Finse Research Station, University of Oslo, Norway, Nov. 27-29th.

2012 Wellcome Witness Seminar, Amani Scientists, University of Cambridge, July 5th

2012 Street-level health workers in six African cities – shifting geographies of work, responsibility and entitlement, Workshop at the LSHTM, April 2nd

2011  Understanding the Dynamics of Urban Flexibility and Reconstruction, The Saïd Business School, Oxford, March 17th-18th

2010    Thinking With Insects: Entomological Reflections on History, Medicine and Politics, conference, LSHTM, May 20th

2010 Memories of Medical Research in Africa: photography exhibition, LSHTM March, 15th

2009 The Realms of Memory in Medical Research, seminar series, Department of Global Health and Development Department, LSHTM and the History of Science (REHSEIS) Laboratory Paris-Diderot, March 15th, June 10th, September 13th, Feb 22nd-23rd, 2010

2009 Publics of Public Health, conference, Wellcome Trust Unit, Kilifi Kenya, Dec 7th-11

2009    Anthropology of Ignorance and Unknowing, workshop, St. John’s, Cambridge

2008    Technologies of Democracy, Social Texture of Assessment, workshop, CRASSH Cambridge University, September 28th-29th

2008    Labour, Value and Experiment: Anthropological Reflections on Transnational Research, LSHTM, February 22nd

2006     Ethnography of Clinical Trials, conference, Wellcome Trust Unit, Kilifi, Kenya, Dec.

2006 Discourses of Failure, conference, Darwin College, Cambridge, April 9th

**SCHOLARSHIPS AND AWARDS**

2013 Excellence in Anthropological Teaching, HAE

2002-2006       Gates Cambridge Scholarship

2002-2006       British Overseas Council Award

2006-2007       John’s College Master’s Fund

2003-2004       Gates Research Grant

2002                Senior Creative Writing Award

2001                Princeton University Fellows Scholarship

2000                Martin Dale Fellowship

1999                Mary Quaintenance Creative Writing studentship

**PUBLIC ENGAGEMENT**

* World Health Organization, Meeting of the Scientific Advisory Group in Emergencies

(SAGE) Working Group on Ebola Vaccines and Vaccination

* World Health Organization, Ethics Working Group on Ebola Vaccine Trials
* UK Department of International Development, Social Science Sub-Committee of SAGE advisory group on Ebola Outbreak
* Scientific Advisory Board Member, Convalescent Plasma for Early Ebola Virus Disease in Sierra Leone (Ebola CP)and Convalescent Plasma for Early Ebola Virus Disease in Guinea (Ebola Tx)
* Scientific Advisory Board Member, Efficacy of favipiravir in reducing mortality in individuals with virus Disease in Guinea (JIKI)
* Scientific Advisor, Understanding the Role of Traditional Healers in the Ebola Response in Liberia, Platform for Development and Peace (PFDP)

**ACADEMIC SERVICES**

Visiting Examiner (2014-2016), Medical Anthropology Program, SOAS

External Examiner (2015-), Global Health Postgraduate Degree Programme, Manchester

Secretary (2012-): Medical Anthropological Committee of the Royal Anthropological Institute

Editorial Contributor (2011-): Somatosphere, Anthropology of Science Research Blog

Regular reviewer: American Ethnologist, Social Science and Medicine; Economy and Society; Journal of Science and Engineering Ethics; Political Legal Anthropology Review; Biosocieties; Social History of Medicine; Journal of International Development; Science, Technology and Human Values; Global Health Policy; Social Studies of Science; Journal of the Royal Anthropological Institute; Geoforum, Sociology of Health and Illness

### Co-investigators

#### Sahr, Foday

**CURRICULUM VITAE**

NAME: Foday Sahr

NATIONALITY: Sierra Leonean

DATE OF BIRTH: 26 February 1965

MARITAL STATUS: Married

E-MAIL: [fsahr@yahoo.com](mailto:fsahr@yahoo.com)

1. **QUALIFICATIONS**

2003-2006 D.Sc. (Microbiology) – University of Science and Technology of China

1997-2000 M.Sc. (Microbiology) - College of Medicine and Allied Health Sciences, University of Sierra Leone

1992-1995 M.B.ch.B (Medicine and Surgery) – College of Medicine and Allied Health Sciences, University of Sierra Leone

1989- 1992 B.Sc Hon. (Health Sciences) – College of Medicine and Allied Health Sciences, University of Sierra Leone

1. **TEACHING EXPERIENCE**

2012-Present Associate Professor. COMAHS. USL

2008 – 2012 Senior Lecturer, COMAHS USL

2000 – 2008 Lecturer COMAHS USL

1. **RESEARCH AND PUBLICATIONS**

**A. Articles in learned journals**

1. Koroma J.B, Sesay S, Sonnie M, Hodges M.H, **Sahr F**, Zhang Y, and Bockarie M.J.

Impact of three rounds of mass drug administration on lymphatic Filaeiasis in Areas previously treated for onocoreinsis in Sierra Leone. PLOS. Neglected tropical Diseases 2013.

1. Nabieu P.F, Gevao P.P Songo-M’brewa K, Kamara C.D.S, **Sahr F**, and Kamara T.B A giant Urinary Bladder stone in a female. Sierra Leone Journal of Biomedical Research Vol. 6 (1) 2014.
2. Ansumana R, Joeobson K, **Sahr F**, Sesay S, Bangura H.S. Jalloh M.B, and Idriss M.R, Ebola in Freetown Area, Sierra Leone – A case study of 58 Patients E.Eng J. Med. Letter to editor Dec. 2014
3. Brown H, Kelly A.H, Mari-Saez A. Fichet-Calvet E, Gunther S, Magassouba N, **Sahr F**. and Borchert M. Extending the “Social” Anthropological contributions to the study of viral Haemorrhagic Fevers. Accepted in PLOS neglected deseases 2015
4. **Sahr F**, Smith S. J, Kamara A, Warsame M, Sillah J and Swarray A.Assessment of the Therapeutic Efficacy of Two Artemisinin-Based Combinations in the Treatment of Uncomplicated Falciparum Malaria among Children Under 5 Years in Four District Hospitals in Sierra Leone. Sierra Leone Journal of Biomedical Research 2013 Vol 5 (1) pp 4 - 8
5. Ansumana R, Bockarie A S, Sankoh P, Jacobsen K H, Koroma A B, Malanoski A P, Meehan K A, Leski T, Jimmy D H, Bangura U, **Sahr F**, Lin B and Stenger D A The Use of Mobile Electronic Devices for Public Health Data Collection and Syndromic Surveillance at the Republic Of Sierra Leone Armed Forces. Sierra Leone Journal of Biomedical Research 2013 Vol5 (1) pp 9 – 13
6. Koroma JB, Sesay S, Sonnie M, Hodges MH, **Sahr F**, Zhang Y, Bockarie MJ,Impact of Three Rounds of Drug Administration on Lymphatic Filariasis in Areas Previous Treated for Onchocerciasis in Sierra Leone. PLoS Neglected Tropical Diseases. June 2013. Plosntds/…/journal.pntd.0002273.
7. Gevao S.M, Rogers, M.H., **Sahr, F**., and Gbakima, A.A. Seropprevalence and Assessment of knowledge on HIV/AIDS amongst female commercial sex workers in Freetown, Sierra Leone. Journal of Pure and Applied Sciences. 2012 Vol. 11 pp 50-54
8. Gbakima A. A., Konteh R., Kramer N., **Sahr F**., George T.A and Luckay A. Nutritional Status of Children in Displacement Camps in Sierra Leone. Sierra Leone Journal of Biomedical Research 2012 Vol4 (1) pp 12 -18
9. **Sahr, F**, Gevao, S. M., Bockarie A., Ibrahim-Sayo E., Sevalie S., Hanciles A and Gbakima AA.,: Prevalence and Intensity of intestinal helminthes and their response to treatment in a rural fishing community in Sierra Leone. Sierra Leone Journal of Biomedical Research. 2010. Vol. 2(2).pp 122 – 126
10. Koroma, J.B., Peterson, J., Gbakima, A.A., Nylander, F.E., **Sahr, F**., Soares Magalhães, R.J, Zhang, Y., and Hodges, M H. Geographical Distribution of Intestinal Schistosomiasis and Soil-Transmitted Helminthiasis and Preventive Chemotherapy Strategies in Sierra Leone. PLoS Neglected Tropical Diseases. November 2010. Vol.4 Issue 11 e891 pp1- 9.
11. **Sahr, F**., Solayide, A. A., Hanson, C., Kanty, T.V., George, T.A. and Harding, D., Nasal Carriage of Staphylococcus aureus and Antibiotic Susceptibility Pattern among children in Freetown, Sierra Leone. Sierra Leone Journal of Biomedical Research (SLJBR). 2010. Vol.2 (1) pp 65 – 69.
12. Solayide, A.A., Gevao, F.T., **Sahr, F**., Gevao, M.S. Seroprevalence of Human Immunodeficiency and Hepatitis B viruses among patients at a health facility in Freetown, Sierra Leone. Sierra Leone Journal of Biomedical Research (SLJBR) 2010. Vol. 2(1) pp28 – 31.
13. **Sahr, F**, Gevao S.M, Bockarie A., Ibrahim-Sayo E., Sevalie S., Hanciles A and Gbakima AA.. Treatment of uncomplicated falciparum malaria with Artesunate-Amodiaquine Combined Therapy (ACT) in rural Sierra Leone. Sierra Leone Journal of Biomedical Research. 2009 Vol 1. No2. pp21 – 26.
14. **Sahr, F**, Kargbo B, Gevao S.M, Gbakima A.A and Swarray-Deen Knowledge, Perception of risk and attitude of Sierra Leone Military Personnel towards Colleagues with HIV/AIDS. Sierra Leone Journal of Biomedical Research 2009 Vol. 1, No.1 pp38 – 43.
15. **Sahr F**, Jones J and Barh SB. Prevalence of Intestinal Helminth Infection among children under 15 years in selected communities in Monrovia, Liberia. Sierra Leone Journal of Biomedical Research 2009 Vol. 1, No. 1 pp28 – 32.
16. **Sahr, F**. Jalloh M.I. Kargbo, B and Gbakima, AA. Prevalence of HIV and Other Sexually Transmitted Infections in the Republic of Sierra Leone Armed Forces. African Journal of Science and Technology (AJST) 2008 Vol. 9, No. 2 pp1 – 4.
17. Gbakima AA. Konteh R. Kramer N. **Sahr F**. Mansaray H. Pessima A Becker M. Kallon M. Bah ZJ. Spencer A. and Luckay A. Intestinal protozoa and intestinal helminthic infections in Displacement camps in Sierra Leone. Africa Journal of Medicine and Medical Sciences (2007) 36 pp1-9.
18. Xun Wang. **Sahr F**. Ting Xue and Baolin Sun Methylobacterium salsuginis sp. Nov., isolated from Seawater, International Journal of Systematic and Evolutionary Microbiology (2007),57, pp1699 – 1703
19. Jalloh A. Gamanga J. Jalloh M. **Sahr F**. Gbakima AA. And Willoughby VR. G6PD. Deficiency Assessment in Freetown, Sierra Leone, reveals further insight into the molecular heterogeneity of G6PD A-(short communication). Journal of Human Genetics (2008) DO1 10.1007/s 10038-008-0294-y
20. **Sahr F**, Gbakima AA. Terry B, Willoughby VR and Bockarie M. Assessment of the therapeutic Efficacy of Chloroquine and Fansidar in the treatment of uncomplicated falciparum Malaria. Journal of Pure and Applied Sciences. (2004) Vol. 9. pp89 – 92.
21. **Sahr F**, Rogers I, and Willoughby V.R. Iimmunochromatographic test in the diagnosis of falciparum Malaria inpatients in Freetown, Sierra Leone. Journal of Pure and Applied Sciences. (2004) Vol. 9 pp93-95.
22. Sillah ASB, **Sahr F** and Kamara CA – Clinical waste management at Biomedical Laboratories in Freetown. Sierra Leone Medical and Dental Journal(2003) Vol.12 No. 1.pp66-69
23. **Sahr, F**., Morgan, H.G., Willoughby, V.R. and Gbakima, A.A. Efficacy of Chloroquine in childhood uncomplicated malaria at Primary Health Care level in Sierra Leone. Sierra Leone Medical and Dental Journal. (2004). Vol.13 No. 1 pp54-59.
24. Willoughby VR, **Sahr F**, Russel JWB and Gbakima AA. The usefulness of Defined Clinical Features in the Diagnosis of HIV/ AIDS infection in Sierra Leone. Cellular and Molecular Biology. (2001). 47 (7) 1163 – 1167.
25. **Sahr F**, Willoughby VR, Gbakima AA and Bockarie MJ. Apparent Drug failure following Artesunate treatment in Plasmodium falciparum Malaria in Freetown, Sierra Leone. 4 cases reports. Annals to Tropical Medicine and Parasitology (2001) 95:5,445-449
26. Terry B, Kanjah F, **Sahr F**, Kortequee S, Dukulay I and Gbakima AA. Sarcoptes Scabeie infestation among children in displacement camp in Sierra Leone. Journal of Public Health (2000) 115.pp1-4
27. Willoughby VR and **Sahr, F**. Diabetes admission at Connaught Hospital. A retrospective study. Sierra Leone Medical and Dental Association Journal. (2001) 10(1).pp28-31
28. **Sahr F**. Habib Al-Ali and Sillah ABS. Prevalence of the four(4) species of Plasmodium in Freetown. Sierra Leone Medical and Dental Journal. (2001). Vol.10.pp20-23
29. Gbakima AA. Bockarie MJ, **Sahr F**, Palmer L and Gooding E. Rapid Assessment of the Prevalence and Distribution of Lymphatic filariasis in Sierra Leone. Annals of Tropical Medicine and Parasitology.(2000) 94 (93)
30. **Sahr F**, Babadi, J. and Gbakima, A.A. Tuberculosis and the outcome of treatment among Children and Adolescents in Freetown, Sierra Leone. Sierra Leone Medical and Dental Journal (1998) 9(1):pp1-14 .
31. Gbakima AA, and **Sahr F**. Parasitology and Clinical studies on Wuchereria bancrofti infection in Moyamba District. African Journal of Health Sciences (1996) 3(2):37-40.
32. Gbakima AA, and **Sahr F**. Filariasis in the Kaiyamba Chiefdom, Moyamba District Sierrra Leone. An Epidemiological and Clinical study. Journal of the Society of Public Health (1996). 110:pp169 – 174.
33. **Sahr. F**, Hazra PK and Grillo TAI. Total and Differential White Cell Count in Healthy Sierra Leoneans. West African Journal of Medicine. 14(2): 27- 31 (1995).pp105 – 107.
34. Gbakima AA and **Sahr F**. intestinal parasitic infections among rural farming communities in Eastern Sierra Leone. African Journal of Medicine and Medical Sciences. 1995 24. pp 195 – 200
35. Harkrider, J.R.,,Gbakima AA, Kandeh JB and **Sahr F** Mermithid (Nematoda: Mermithidae) parasitism of Simulium damnosum s.l. (Diptera: Simuliidae) in Sierra Leone and the need for vector control. American Journal of Entomology.(1994) Vol.28(3)pp421 – 423
36. Gbakima AA, Kandeh JB and **Sahr F**. Transmission of Onchocerca vulvulus in four villages in Gorama Chiefdom, Kono District. Sierra Leone Medical and Dental Journal Vol. 7, No. 1 (1993) pp28-37.

**4. PROFESSIONAL ACTIVITIES**

2012-Present Member, Sierra Leone Medical Dental Council

2012- Present Member, National Health Commission

2009 – Present Co-Editor, Sierra Leone Journal of Biomedical Research

2009 – Present Member, National Laboratory Technical Working Group.

2009- Present Member, Sierra Leone Health and Biomedical Research Group

2002- 2003 National Coordinator, Continuing Medical Education of the Defense Sector for Medical Services in Sierra Leone.

2000 – 2004 Member, Editorial Board, Journal of Sierra Leone Medical and Dental Association

**5. UNIVERSITY/PUBLIC SERVICE**

2010 – 2012 External Examiner, Faculty of Environmental Sciences, Njala University

2008 – Present Member, Executive Committee of Senate, USL

2008 – Present Member of Senate USL

2008 – Present Member, COMAHS Curriculum Review Committee

2008 – Present Member, University Discipline Committee

2008 – Present Member, National Polio Expert Committee

1996- Present Member, Sierra Leone Medical and Dental Association

**6. ADMINISTRATIVE EXPERIENCE**

2012-2013 Acting Provost. College of Medicine and Allied Health Sciences. University of Sierra Leone.

2008-2012 Dean, Faculty of Basic Medical Sciences, College of Medicine and Allied

Health Sciences. University of Sierra Leone.

2007- Present Head, Department of Microbiology. College of Medicine and Allied Health

Sciences. University of Sierra Leone.

2008- Present Commanding Officer. Joint Medical Unit. RSLAF.

1. **BRINGING RESEARCH FUNDS/PROJECTS**

2012 €2,400 from DFG Germany. To conduct Lassa research in Kenema

District. Sierra Leone

2008 $40,000 from National AIDS Secretariat (NAS) to conduct Operational

Research in HIV

2009 $60,000 from National AIDS Secretariat to conduct Operational

Research on Social Networking among students in Tertiary Institutions

**8. CONSULTANCY REPORTS**

1. **Sahr, F,** and Conteh, S. National Guidelines on Screening for Tuberculosis and Isoniazid prophylaxis in HIV patients in Sierra Leone. (2010). Commissioned by the Ministry of Health and Sanitation.
2. **Sahr, F,** and Conteh, S. A practical Syndromic tool for Sexually Transmitted Infections in Sierra Leone.(2010). Commissioned by the Ministry of Health and Sanitation.

9. **CONSULTANCIES**

1. 2012- HIV Seroprevalence and Behavioral Survey within the Republic of Sierra Leone Armed Forces- Principal Investigator

2. 2012- Malaria Indicator Survey (National Survey) - Principal Investigator

3. 2013 – National Demographic Health Survey - Principal Investigator

4. 2013 – National Micro Nutrient Survey - Principal Investigator

**10. AWARDS**

2012 National Award, Commander of the Order of the Rokel (COR)

2010 Government of Sierra Leone Annual Award for Public Service – P resident’s Award for Diligent Service

2009 All Works Of Life, National Achievements Award – Military Officer of the year

**11. POST GRADUATE COURSES, CONFERENCES AND WORKSHOPS**

8th-10th October 2013 African Union Commission Joint Consultative Workshop on HIV

Interventions in Afican Unoin Peace Support Operations. Addis Ababa.

Ethiopia.

4th-19th December 2013 Gender Based Violence and HIV Policy Planning. San Antonio. Texas

USA

4th-10th Dec 2010 HIV/AIDS Planning/policy Development Course. San Antonio. Texas.

USA

12th – 23rd Apr 2010 Executive Healthcare Resource Management Course, Brooks City Base Texas, USA

11th – 16th Jan, 2009 Fundamentals on International Clinical Research Course. Cape Town, South Africa

19th – 20th Jan 2009 Laboratory Safety and Assurance Course. Cape Town, South Africa

7th-10th Sept 2009 7th Advanced HIV Course. Montpellier. France.

European AIDS Clinical Society.

3rd - 7th Nov, 2008 Sub-regional Workshop on Health Systems Research Bobo-Dioulasso, Burkina Faso.

Aug- Sept, 2008 Military International HIV Training Program, University of California, San Diego, U.S.A

26th- 30th Nov 2007 HIV Mainstreaming Workshop – Dakar, Senegal

Jul – Sept 2001 Summer Training in Tropical Medicine. Bloomberg School of Public Health, Johns Hopkins University, U.S.A

#### Rashid Ansumana

**Address:** Mercy Hospital Research Laboratory **Email:** rashidansumana@gmail.com **Citizenship:** Sierra Leone **Telephone:** +232-76-683832

**Date of Birth**: 30 July 1977

**EDUCATION**

**Ph.D., Tropical Medicine** (expected 2014)

Liverpool School of Tropical Medicine, University of Liverpool (Liverpool, UK), 2010-present (part-time, off-site)

* Thesis: “Tiered laboratory analyses for common infections to characterize febrile morbidity not related to malaria in Sierra Leone”

**Postgraduate coursework**

Department of Botany and Microbiology, University of Ibadan (Ibadan, Nigeria), 2007-2008

**M.Sc., Environmental Biology (2006)**

Njala University ( Sierra Leone), 2005-2006

**B.Sc.Ed., Biology (2002)**

Njala University College, University of Sierra Leone (Freetown, Sierra Leone), 1998-2002

**PROFESSIONAL EXPERIENCE**

**Mercy Hospital Research Laboratory (MHRL), Bo, Sierra Leone**

**Research Director, 2009-present**

* Manage a portfolio of clinical and public health research projects using tools from the fields of geography, demography, epidemiology, and the laboratory sciences
* Supervise full-time master’s-prepared researchers as well as interns and part-time interviewers, analysts, and technicians
* Develop and implement research protocols
* Ensure compliance with research regulations and laws
* Collect community-based data using surveys, interviews, and community-based participatory research methods
* Conduct molecular diagnostics and other laboratory analysis
* Analyze spatial and statistical data
* Write research reports for publication
* Coordinate the collaborative efforts of MHRL and local, national, and international research partners

**Njala University, Bo, Sierra Leone**

**Lecturer, 2007-present**

* Teach research methods courses for the School of Environmental Science
* Supervise research interns
* Contribute to curriculum development.

**PEER-REVIEWED PUBLICATIONS**

1. **Rashid Ansumana,** Jesse Bonwitt, David A. Stenger, Kathryn H Jacobsen. Ebola in Sierra Leone: a call for action. . The Lancet, [Volume 384, Issue 9940](http://www.thelancet.com/journals/lancet/issue/vol384no9940/PIIS0140-6736(14)X6094-0), Page 303, 26 July 2014.
2. **Rashid Ansumana,** Kathryn H Jacobsen, Moses J Bockarie, David A. Stenger. Diagnostic point-of-care tests in resource-limited settings: Lessons from Sierra Leone. Lancet Infectious Diseases, (Oct. 2014).
3. Mackenzie Dome\*, **Rashid Ansumana**\*&, Andrea L. Covington, Maria Rebollo, Santigie Sesay, Kathryn H. Jacobsen,*Dziedzom De Souza, Benjamin Koudu,Edwin Michael And Moses J. Bockarie. A Case of Filarial Lymphedema in A 7 Year Old Boy in Sierra Leone. 2014.* **Acta Tropica**
4. Dziedzom K. de Souza1, Santigie Sesay, Marnijina G. Moore3, **Rashid Ansumana**, Karsor Kollie, Maria Rebollo, Benjamin G. Koudou, Joseph B. Koroma, Fatorma K. Bolay, Daniel A. Boakye and Moses J. Bockarie. No evidence for lymphatic filariasis transmission in big cities affected by conflict related rural-urban migration in Sierra Leone and Liberia*. 2014. PLOS NTD*
5. Bhoobun S, Jetty A,Koroma MA, Kamara MJ, Kabia M, Coulson R, **Ansumana R**,Jacobsen KH. Facilitators and barriers related to voluntary counseling and testing for HIV among young adults in Bo, Sierra Leone. *J Community Health. Nov. 2013.*
6. Leski TA, Bangura U, Jimmy DH, **Ansumana R**, Lizewski SE, Stenger DA, Taitt CR, Vora GJ. Multidrug-resistant tet(X)-containing hospital isolates in Sierra Leone. *International Journal of Antimicrobial Agents*. 2013. *Epub ahead of print*.
7. Leski TA, Bangura U, Jimmy DH, **Ansumana R**, Lizewski SE, Li RW, Stenger DA, Taitt CR, Vora GJ. Identification of blaOXA-51-like, blaOXA-58, blaDIM-1 and blaVIM carbapenemase genes in hospital Enterobatereriaceae isolates from Sierra Leone. *Journal of Clinical Microbiology*. 2013. *Epub ahead of print*.
8. **Ansumana R**, Jacobsen KH, Leski TA, Covington AL, Bangura U, Hodges MH, Lin B, Bockarie MJ, Stenger DA. Reemergence of chikungunya virus in Bo, Sierra Leone. *Emerging Infectious Diseases*. 2013 Jul; 19(7):1108-1110.
9. **Ansumana R**, Jacobsen KH, Gbakima A, Hodges MH, Lamin JM, Leski TA, Malanoski AP, Lin B, Bockarie MJ, Stenger DA. Presumptive self-diagnosis of malaria and other febrile illnesses in Sierra Leone. *Pan African Medical Journal.* 2013 May 26; 15:34.
10. **Ansumana R**, Bockarie AS, Sankoh P, Jacobsen KH, Koroma AB, Malanoski AP, Meehan KA, Leski T, Jimmy DH, Bangura U, Sahr F, Lin B, Stenger DA. The use of mobile electronic devices for public health data collection and syndromic surveillance in Africa. *Sierra Leone Journal of Biomedical Research*. 2013 Apr; 5(1):8-14.
11. Jimmy DH, Sundufu AJ, Malanoski AP, Jacobsen KH, **Ansumana R**, Leski TA, Bangura U, Bockarie AS, Tejan E, Lin B, Stenger DA. Water quality associated public health risk in Bo, Sierra Leone. *Environmental Monitoring and Assessment*. 2013 Jan; 185(1):241-251.
12. Jacobsen KH, **Ansumana R**, Abdirahman HA, Bockarie AS, Bangura U, Meehan KA, Jimmy DH, Malanoski AP, Sundufu AJ, Stenger DA. Considerations in the selection of healthcare providers for mothers and children in Bo, Sierra Leone: reputation, cost, and location. *International Health*. 2012 Dec; 4(4):307-313.
13. Leski TA, **Ansumana R**, Malanoski AP, Jimmy DH, Bangura U, Barrows BR, Alpha K, Koroma BM, Long NC, Sundufu AJ, Bockarie AS, Lin B, Stenger DA. Leapfrog diagnostics: demonstration of a broad spectrum pathogen identification platform in a resource-limited setting. *Health Research Policy and Systems*. 2012 Jul 4; 10:22.
14. Jacobsen KH, Abdirahman HA, **Ansumana R**, Bockarie AS, Bangura U, Jimmy DH, Malanoski AP, Sundufu AJ, Stenger DA. Home birth and hospital birth trends in Bo, Sierra Leone. *Acta Obstetricia et Gynecologica Scandinavica*. 2012 Jun; 91(6):750-753.
15. Taitt CR, Leski T, Stenger DA, Vora GJ, House B, Nicklasson M, Pimental G, Zurawski DV, Kirkup BC, Craft D, Waterman PE, Lesho EP, Bangura U, **Ansumana R**. Antimicrobial resistance determinant microarray for analysis of multi-drug resistant isolates. *SPIE Proceedings*. 2012 May 1; 8371. doi:10.1117/12.924569
16. Jacobus H, Lin B, Jimmy DH, **Ansumana R**, Malanoski AP, Stenger DA. Evaluating the impact of adding energy storage on the performance of a hybrid power system. *Energy Conversion and Management*. 2011 Jul; 52(7):2604-2610.
17. Leski TA, **Ansumana R**, Jimmy DH, Bangura U, Malanoski AP, Lin B, Stenger DA. Massively multiplexed microbial identification using resequencing DNA microarrays for outbreak investigation. *SPIE Proceedings*. 2011 Apr 25; 8029. doi:10.1117/12.884782
18. Meehan KA, Bankoski AJ, Tejan E, **Ansumana R**, Bangura U, Stenger DA, Jacobsen KH\*. Hypertension in Bo, Sierra Leone. *Ethnicity & Disease*. 2011 Spring; 21(2):237–242,259.
19. **Ansumana R**. 2011. Use of fast technology for the analysis of nucleic acids to store ribonucleic acid extracts at elevated temperatures. *International Journal of Collaborative Research on Internal Medicine & Public Health* 04/2011; 3(3):261-261.
20. **Ansumana R**, Malanoski AP, Bockarie AS, Sundufu AJ, Jimmy DH, Bangura U, Jacobsen KH, Lin B, Stenger DA. Enabling methods for community health mapping in developing countries. *International Journal of Health Geographics*. 2010 Oct 29; 9:56.

**Articles Under Review**

1. Roger Hillson, Joel Alejandre, Rashid Ansumana, Kathryn H Jacobsen,Alfred S. Bockarie3 Anthony Malanoski, Umaru Bangura,, Joseph M. Lamin, David A. StengerMethods for Determining the Uncertainty of Population Estimates Derived from Satellite Imagery and Limited Survey Data: A Case Study of Bo City, Sierra Leone Leone Survey Data (*PLOS ONE-Revised Resubmitted*).
2. Abu James Sundufu, **Rashid Ansumana**, Alfred S. Bockarie, Umaru Bangura, Joseph M. Lamin, Kathryn H. Jacobsen, and David A. Stenger. Syndromic surveillance of livestock disease incidence and mortality in Koinadugu District, Sierra Leone, 2011-2012.(*Journal of Tropical Animal Health and Production-Revised Resubmitted*).
3. Shamika Ranasinghe, **Rashid Ansumana**, Alfred S. Bockarie, Umaru Bangura, David Henry Jimmy, David A. Stenger, and Kathryn H. Jacobsen. Child bednet use before, during, and after a bednet distribution campaign in Bo, Sierra Leone

(*International Health-Revised Resubmitted*).

1. Hannah Brown, Ann H. Kelly, Almudena Mari-Saez, Elisabeth Fichet-Calvet, Stephan Günther , N’Faly Magassouba ,**Rashid Annsumana**, Foday Sahr, Matthias Borchert. Extending the ‘social’: Anthropological contributions to the study of viral haemorrhagic fevers. (*PLOS One*)

#### Borchert, Matthias (CV abridged with VHF focus)

Born 1958. Married, three children. Nationality: German. Languages: fluent in English and French, basic knowledge in Spanish and Dutch

Training:

2009 PhD “Epidemiology and Control of Marburg Haemorrhagic Fever Epidemics in Central Africa”, Gent University, Belgium

1997/98 MSc Course “Epidemiology”, London School of Hygiene and Tropical Medicine

1. License to practice as a physician, Ärztekammer Niedersachsen, Germany

1977 - 1984 Marburg and Göttingen (Germany) Medical School, MD.   
Honours: With distinction (sehr gut)

Assignments:

Since 12/2011 Honorary Senior Lecturer at the London School of Hygiene & Tropical Medicine, Faculty of Epidemiology & Population Health, Department of Infectious Disease Epidemiology.

Since 6/2010 Senior Lecturer at the Institute of Tropical Medicine and International Health, Charité - Unversitätsmedizin Berlin, Director: Prof Gundel Harms-Zwingenberger.

11/02 -05/10 Clinical lecturer at the Infectious Disease Epidemiology Unit, London School of Hygiene & Tropical Medicine

11/98 - 10/02 Research Fellow at the Epidemiology Unit, Institute of Tropical Medicine Antwerp (Belgium)

2/94 - 9/97 Research Fellow at the Dept. of Tropical Hygiene, Univ. of Heidelberg (Germany)

3/92 - 2/93 Expatriate Project Manager of health system research project of Ministry of Health in Burkina Faso and the Department of Tropical Hygiene, University of Heidelberg.

7/91 - 2/92 Responsible for the reform of the “Health Management Information System” on behalf of German Cooperation Agency (GTZ), Burkina Faso

7/88 - 6/91 District Medical Officer in Toma, Burkina Faso, for the German Development Service.

6/84 - 12/87 Resident in anaesthesiology and intensive care / neonatology / gynaecology and obstetrics in Hamburg (Germany)

Teaching:

Epidemiology and statistics in several MSc courses at ITM Antwerp, LSHTM London and ITMIH Berlin, in English and French. Supervising or advising on several MSc and PhD projects related to VHF.

VHF related consultancies and projects:

2015 Co-Investigator of Wellcome Trust-funded research project “Convalescent plasma for early Ebola virus disease in Sierra Leone (Ebola\_CP)”

2015 Co-Investigator of ESRC-funded research project “Anthropology of Ebola: transmission dynamics and outbreak socialities”

2014 Co-Investigator of Wellcome Trust and DfID-funded research project “Participatory action to reinforce infection prevention and control for Ebola virus disease in Sierra Leone”

2014 For International Rescue Committee, Liberia:   
Responding to the Ebola Virus Disease outbreak in Liberia as Senior Health Coordinator, helping to set up an Ebola Treatment Unit in Monrovia

2014 For Ministry of Health, Guinea:   
Responding to the Ebola Virus Disease outbreak in Guinea by exploring the reasons for the resistance against Ebola control measures in Guéckédou district

Since 2013 Principal Investigator of DFG-funded intervention research project “Lassa fever in Guinea and Sierra Leone: rodent control, and seasonality of human exposure to rodents (LAROCS)”

2005 For “Médecins Sans Frontières”, Spain:  
Contributing to the evaluation of MSF intervention against the Marburg HF outbreak in Uige, Angola

2000 For Ministry of Health, Uganda:  
Outbreak investigation of and response to Ebola Haemorrhagic Fever in Masindi District. Technical advisor to the District Director Health Services on: surveillance (investigation of rumours, establishment of contact lists, follow-up of contacts); safe transport to the isolation ward or burial site; organisation of safe burials. Extensive hands-on experience in all these areas.

1999 For “Médecins Sans Frontières”, Belgium:  
Outbreak investigation of and response to Marburg Haemorrhagic Fever epidemic in Durba, Democratic Republic of the Congo. Member on response team, involved in surveillance and cross-sectional epidemiological/serological survey in the general population, gold diggers, health workers.

VHF related publications:

1. Mulangu S, Borchert M, Paweska J, Tshomba A, Afounde A, Kulidri A, Swanepoel R, Muyembe-Tamfum JJ, Van der Stuyft P. High Prevalence of IgG Antibodies to Ebolavirus in Efé Pygmy Population in Watsa Region, DR Congo. J Infect Dis, 2014, **submitted**.
2. Van Kerkhove M, Emmerich P, Lutwama J, Grade M, Mutyaba I, van der Stuyft P, Borchert M. Seroprevalence in health workers, social contacts and survivors of Ebola hemorrhagic fever patients in Masindi, Uganda. *PLoS Negl Trop Dis*, 2014, **submitted**.
3. Kratz T, Roddy P, Tshomba AO, Jeffs B, Ciruelo DP, de la Rosa O, Borchert M, 2014. Bundibugyo Ebola Haemorrhagic Fever: Symptoms, Treatment and Outcomes in the Ebola Treatment Centre in Isiro, Democratic Republic of the Congo, 2012. PLoS ONE, **in press**.
4. Brown H, Kelly AH, Marí-Saez A, Fichet-Calvet E, Ansumana R, Magassouba N, Sahr F, Borchert M. Extending the “social”: anthropological contributions to the study of viral haemorrhagic fevers. *PLoS Negl Trop Dis*, 2015, **9**: e0003651.
5. Marí-Sáez A, Weiss S, Nowak K, Lapeyre V, Zimmermann F, Düx A, Kühl HS, Kaba M, Regnaut S, Merkel K, Sachse A, Thiesen U, Villányi L, Boesch C, Dabrowiski PW, Radonic A, Nitsche A, Leendertz SAJ, Petterson S, Becker S, Krähling V, Couacy-Hymann E, Akoua-Koffi C, Weber N, Schaade L, Fahr J, Borchert M, Gogarten JF, Calvignac-Spencer S, Leendertz FH. Investigating the zoonotic origin of the West African Ebola epidemic. EMBO Mol Med, 2015, **7**:17-23.
6. Bühler S, Roddy P, Nolte E, Borchert M. Clinical documentation and data transfer from Ebola and Marburg disease wards in outbreak settings: Health care workers’ experiences and preferences. *Viruses* 2014, **6**: 927-937.
7. Roddy P, Howard N, van Kerkhove MD, Lutwama J, Wamala J, Yoti Z, Colebunders R, Palma PP, Sterk E, Jeffs B, Van Herp M, Borchert M. Clinical manifestations and case management of Ebola haemorrhagic fever caused by a newly identified virus strain, Bundibugyo, Uganda, 2007-2008. *PLoS ONE* 2012, **7**:e52986.
8. Raabe VN, Borchert M\*. Infection control during filoviral hemorrhagic fever outbreaks. *J Glob Infect Dis,* 2012, **4**:69-74. \*Authors wrongly specified as Vanessa NR, Matthias B.
9. Borchert M, Mutyaba I, Van Kerkhove MD, Lutwama J, Luwaga H, Bisoborwa G, Turyagaruka J, Pirard P, Ndayimirije N, Roddy P, Van der Stuyft P. Ebola haemorrhagic fever outbreak in Masindi District, Uganda: outbreak description and lessons learned. *BMC Infect Dis*, 2011, **11**:357.
10. Roddy P, Colebunders R, Lim M, Jeffs B, Palma PP, van Herp M, Borchert M. Filovirus hemorrhagic fever outbreak case management: a review of current and future treatment options. *J Infect Dis* 2011, **204 (Supp 3)**:S791-S795.
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12. Raabe VN, Mutyaba I, Roddy P, Lutwama JJ, Geissler W, Borchert M. Infection control during filoviral hemorrhagic fever outbreaks: preferences of community members and health workers in Masindi, Uganda. *Trans R Soc Trop Med Hyg* 2010; **104**:48-50.
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#### 12.1.2.3. Bonwitt, Jesse

#### JESSE BONWIT

#### Durham University

#### Jesse.bonwitt@gmail.com

Birth*:* 14.12.1988 (Paris, France)

Nationality: British and German, raised in France

#### Education

* **MSc One Health – Infectious Diseases** *with Merit* (2013 – 2014)

London School of Hygiene and Tropical Medicine & Royal Veterinary College, UK

* **Bachelor of Veterinary Science** (Medicine and Surgery) *with Distinction* (2007 – 2012)

School of Veterinary Sciences, University of Bristol, UK

* **First year Veterinary Medicine** (2006 – 2007)

Faculty of Veterinary Science Budapest, Hungary

* **International Baccalauréat (British section)** and **German language diploma** (DSD of KMK)

Lycée International de Saint-Germain-en-Laye, France

#### Languages

Fluent (written and spoken): German, French and English.

#### Scientific interests

Emerging infectious disease, epizootic and zoonotic diseases, epidemiology, veterinary public health, One Health, conservation and wildlife medicine, internal medicine, exotics medicine.

#### Other interests

Long distance running (competitively), mountain/road cycling climbing, sailing, judo, photography (<https://jessebonwitt.jux.com>), international development and politics, travel.

#### Publications & Presentations

* **Brown, H, Kelly, AH, Mari-Sáez, A, Fichet-Calvet, E, Ansumana, R, Magassouba, N, Sahr, F, Bonwitt, J, Borchert, M.** 2015. Extending the ‘social’: Anthropological contributions to the study of viral haemorrhagic fevers. *PLOS* *Negl Trop Dis* 9 (4)
* **Bonwitt, J, Marì-Saez, A.** 2014. “Ebola transmission & response in the community: insights from Sierra Leone”. London School of Hygiene & Tropical Medicine Seminar: “Ebola today: What are we learning from the West African outbreak?”
* **Ansumana, R, Bonwitt, J, Stenger, DA, Jacobsen, KH**. 2014. Ebola in Sierra Leone: a call for action. *The Lancet* Vol. 384, Issue 9940: 303
* **Schilliger, L, Rossfelder, A, Bonwitt J, Di Girolamo, N, Riva, F, Gandar, F, Selleri, P, Nicolier, A.** 2014. Antemortem diagnosis of multicentric lymphoblastic lymphoma, lymphoid leukemia, and inclusion body disease in a boa constrictor (Boa constrictor imperator). 2014. *Journal of Herpetological Medicine and Surgery* Vol. 24, No. 1-2, pp. 11-19
* **Schilliger, L, Bonwitt, JH, Morel, D.** 2013**.** Cheyletus eruditus (Taurrus): An effective candidate for the biological control of the snake mite (Ophionyssus natricis). *Journal of Zoo and Wildlife Medicine*. Vol. 44(3): 654-659
* **Schilliger, L, Selleri, P, Gandar, F, Rival, F, Bonwitt, J, Frye, FL.** 2013. Adenoid hepatocellular carcinoma accompanied by uncharacterized eosinophilic intracytoplasmic inclusions in a green iguana (Iguana iguana, Linnaeus, 1758). *Journal of Herpetological Medicine and Surgery*. Vol. 22, No. 3-4, pp. 70-75.

#### Employment

* **FAO Consultant Epidemiologist – Ebola emergency response (May-June 2015)**

Food and Agricultural Organisation of the United Nations, Conakry, Guinea

-Assist FAO and Ministry of Livestock to reactivate and strengthen surveillance system for zoonotic diseases, including integrating wildlife and public health networks.

* **Research Assistant (Guinea based) – anthropology of Ebola (Jan. 2015 – current)**

Dr Ann Kelly (University of Exeter – PI) and Dr. Hanna Brown (University of Durham – Co-PI)

-Ad hoc work for EVD National Coordination surveillance unit (Ministry of Health), including responsibility for drafting cross border surveillance strategy and IPC guidelines.

-Anthropological research project based in Guinea looking at the social impact of the Ebola outbreak (from affected communities to high level policy makers) and future epidemic preparedness (human-animal interactions, zoonotic spillover) with a view for multidisciplinary epidemiology studies.

-Translate findings into policy recommendations in forms or reports and publications.

-Responsible for project design and protocol, and setting up in-country networks (Ebola National Coordination Unit), International Governmental Organisations, logistics and ethics application.

* **FAO Consultant epidemiologist – Ebola emergency response (Oct – Dec. 2014)**

Food and Agricultural Organisation of the United Nations, Conakry, Guinea

-Develop communication tools for EVD sensitisation

-Contributed to FAO qualitative risk assessment on EBOV in animal species

-Represent FAO at EVD national coordination meetings

-Led multidisciplinary field mission: “qualitative bushmeat value chain analysis in the EVD context”

* **MSc research – Lassa fever (May – Aug. 2014)**

Dr. Rashid Ansumana, Mercy Hospital Research Laboratory, Bo, Sierra Leone

-Thesis: “Rat-atouille: a mixed method study to characterize human-rodent interactions as risk factors for transmission of Lassa virus in Bo, Sierra Leone.” (submitted for publication)

-EVD preparedness (IPC) and sensitisation at Mercy Hospital, Bo.

* **Locum veterinarian (Jul. – Aug. 2013)**

-Specialist exotics practice: Dr. L. Schilliger Dipl. ECZM, Clinique du Village d'Auteuil 75016 Paris, France

-Mixed practice: SCP Vétérinaire Goblet – Yonger, Rue Marsset 43300 Langeac, France

* **International consultant – rabies expert (Jun. 2013)**

European Union and National Food Agency, Georgia

-Present recent knowledge on rabies diagnostics, control and prevention

-Propose approaches for setting up a rabies vaccination and sensitisation campaign

* **Intern - Food and Agricultural Organization of the United Nations (Jan. - May 2013)**

Dr. Katinka de Balogh FAO HQ Viale delle Terme di Caracalla Rome 00153, Italy

-Policy development (trans-boundary animal diseases and veterinary public health), support on current issues (WHO/OIE/FAO executive meeting, rabies, H7N9)

-Member of international team for a rabies outbreak investigation in Vietnam

-Initiated a round of interviews with all major FAO departments

-Introduce FAO-wide networking tool

* **Veterinarian - Society for the Protection of Animals Abroad (Oct. – Dec. 2012)**

Morocco (Rabat, Khénifra, Midelt, Ouled Frej, Marrakesh)

-Veterinary care of working equines

-Sensitization to welfare and veterinary health issues

#### Work experience:

* **26+ weeks RCVS requirements (2010-2012)** including animal health (DEFRA and Border Inspection Post), referral clinics for exotics, zoos, companion animals, clinical pathology, livestock, equines and abattoirs, control trade in animals, policy implementation
* **HELP Congo, chimpanzee reintroduction center (Aug. 2008)**

HELP CONGO PO box 335, Pointe Noire, République du Congo

-Insight into habit competition/encroachment, poaching, land use and animal behaviour issues associated with reintroduction. Routine veterinary care of semi-captive/wild chimpanzees

* **Budapest Zoo Veterinary Services (Jan. 2007 – Jul. 2007)**

Drs. Endre Sos and Viktor Molnar, 1146 Budapest, Hungary

-Routine veterinary care, preventative medicine

* **Limpopo Wildlife Vet (Aug. 2007 and Aug. 2006)**

Dr. Paul Meyer (deceased) PO Box 6 Gravelotte, 0895 Rep. of South Africa

-Game translocation, wildlife medicine and surgery, socio-economic development opportunities in tourism/hunting and wildlife management

## Information sheets and informed consent forms

### Information sheets and informed consent form for semi-structured or in-depth individual interviews for animal-contact study

**Anthropology of the Ebola Outbreak:**

**Social Transformation, Surveillance and Resilience**

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**INFORMATION SHEET FOR ANIMAL-CONTACT STUDY**

**Purpose of the study**

An outbreak of Ebola is ongoing in Sierra Leona. Some of the symptoms of the disease include fever, nausea, vomiting, headache, diarrhea and bleeding. It is believed that the disease was first spread to humans by a sick animal.

We also want to better understand Ebola disease and it social and economic consequences. We aim at assuring that we are getting prepared, for the social perspective, for further Ebola epidemics.

To do so, we would like to talk to people in the community, either individually or in groups, to better understand their concerns, doubts and questions about the disease and about the current efforts to contain it.

Based on the results of these talks, meetings and interviews, we will try to provide practical recommendations to the Ministry of Health on how to prevent future outbreaks.

**Procedure**

To better understand what people know and think about this topics, we would like to ask you some questions related to the disease and how people understand it, and what impact the disease has had on these communities in the last month. We would like to ask also questions about contact with animals. This will take place either individually or, if you agree to do so, in a group with other members of the community. We will ask your consent for recording. The digital recording and transcript of the interview will be stored on a password-protected computer. Only the members of the project team will have access to this information, and they will not be allowed to share it with anyone else.

We would like to ask also questions about contact with animals and if you agree, observe you and your children if and when they go hunting. If you are happy we will take photos, but only with your agreement.

**Benefits**

By participating in the study you offer relevant information about how the trial can best help prevent and prepare for further epidemics. This allows the government to better respond to the needs of your community.

**Participant confidentiality and protection**

It is entirely up to you whether or not you would like to provide answers to the questions asked and you can stop answering at any moment during the interview without any consequences for you or your family. Your name is not recorded and the information you provide will be kept completely anonymous. As we are in a groups, of course, be aware that the information you give is not anonymous for the other participants but will still be treated completely anonymously for the purpose of the study. This study has been approved by the National Ethics Committee in Sierra Leona, the UK and Germany.

**Contact**

At any time during the study, if you have questions or important remarks for the investigators, you can contact Dr. Almudena Mari Saez, Charité-Universitätsmedizin Berlin. Email: [almudena.mari-saez@charite.de](mailto:almudena.mari-saez@charite.de), Germany number: +4917676373211, Sierra Leone number: 079188270; Dr. Ann Kelly, University of Exeter, email: [A.H.Kelly@exeter.ac.uk](mailto:A.H.Kelly@exeter.ac.uk), UK number: +447889970450; Dr. Hannah Brown, University of Durham, email: Hannah.brown@durham.ac.uk , UK number: +447534006457; Dr. Foday Sahr, email: [fsahr@yahoo.com](mailto:fsahr@yahoo.com), Sierra Leone number: +232 76480288; Dr. Rashid Ansumana, email: [rashidansumana@gmail.com](mailto:rashidansumana@gmail.com), Sierra Leone number: +232 76683832

**Consent Form**

Initials of the subject: \_\_ \_\_ \_\_

Study code of the subject: \_\_ \_\_ \_\_ \_\_ \_\_ \_\_

I confirm that I have been informed about the study and the process to obtain my consent to be interviewed and to record the interview (as it is stipulated by the AAA and the research protocol).

The participant has given consent for:

Focus group discussion/interview  yes  no

Signature of the participant

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_/\_\_\_

*When there is a witness:*

Signature of the witness

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_/\_\_\_

*When a witness is not available:*

I, the undersigned, have fully explained the relevant information of this study to the person (as it is stipulated by the AAA and the research protocol).

The person has given oral consent for:

Focus group discussion  yes  no

Signature of the person obtaining the consent:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_/\_\_\_

### Information sheets and informed consent form for semi-structured or in-depth individual interviews with health workers

**Anthropology of the Ebola Outbreak:**

**Social Transformation, Surveillance and Resilience**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INFORMATION SHEET FOR HEALTH WORKER INFORMANTS**

**Purpose of the study**

An outbreak of Ebola is ongoing in Sierra Leone. Some of the symptoms of the disease include fever, nausea, vomiting, headache, diarrhea and bleeding. To contain the outbreak a large response has been organized which has depended upon the involvement of national health workers.

We want to better understand your experiences with and involvement in the response, including your training and professional experiences and what you feel were the challenges with your work.

Based on the results of these talks, meetings and interviews, we will try to provide practical recommendations to the health ministry and the World Health organization on how to organize outbreak response and containment.

**Procedure**

To better understand what people know and think about this topics, we would like to ask you some questions relating to your experiences during the outbreak. This will take place either individually or in groups. We will ask your consent for recording. The digital recording and transcript of the interview will be stored on a password-protected computer. Only the members of the project team will have access to this information, and they will not be allowed to share it with anyone else.

**Benefits**

By participating in the study you offer relevant information about how best to prevent risks of further transmission, improve care and prepare for possible outbreaks in the future.

**Participant Confidentiality and Protection**

It is entirely up to you whether or not you would like to provide answers to the questions asked and you can stop answering at any moment during the interview without any consequences for you or your family. Your name is not recorded and the information you provide will be kept completely anonymous. This study has been approved by the National Ethics Committee in Sierra Leona and in Germany and the UK.

**Contact**

At any time during the study, if you have questions or important remarks for the investigators, you can contact Dr. Almudena Mari Saez, Charité-Universitätsmedizin Berlin. Email: [almudena.mari-saez@charite.de](mailto:almudena.mari-saez@charite.de), Germany number: +4917676373211, Sierra Leone number: 079188270; Dr. Ann Kelly, University of Exeter, email: [A.H.Kelly@exeter.ac.uk](mailto:A.H.Kelly@exeter.ac.uk), UK number: +447889970450; Dr. Hannah Brown, University of Durham, email: Hannah.brown@durham.ac.uk , UK number: +447534006457; Dr. Foday Sahr, email: [fsahr@yahoo.com](mailto:fsahr@yahoo.com), Sierra Leone number: +232 76480288; Dr. Rashid Ansumana, email: [rashidansumana@gmail.com](mailto:rashidansumana@gmail.com), Sierra Leone number: +232 76683832

**Consent Form**

Initials of the subject: \_\_ \_\_ \_\_

Study code of the subject: \_\_ \_\_ \_\_ \_\_ \_\_ \_\_

I confirm that I have been informed about the study and the process to obtain my consent to be interviewed and to record the interview (as it is stipulated by the AAA and the research protocol).

The participant has given consent for:

Interview  yes  no

Signature of the participant

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_\_/\_\_\_

*When there is a witness:*

Signature of the witness

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_/\_\_\_

*When a witness is not available:*

I, the undersigned, have fully explained the relevant information of this study to the person (as it is stipulated by the AAA and the research protocol).

The person has given oral consent for:

Individual interview  yes  no

Signature of the person obtaining the consent:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Full Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Signature

\_\_\_/\_\_\_/\_\_\_

## Guides for data collection

*NB: The following is a non-comprehensive collection of data collection guides, which serve as examples.*

### Guide for interviews and focus group discussions for animal contact study

Interview Guide

Date:

Place:

Interviewer:

Personnel Details:

* Age :
* Sex :
* Profession :
* Ethnic group :
* Religion :

1. Introductory Questions

* What kinds of animals do you have in the bush and in the villages?
* How are they called?
* What kinds of contact do you have with wildlife? (accidental/purposive)
* Do you have livestock?
* Are humans and animals sharing some common foods
* Where, for you, is the ‘bush’? Is it dangerous?

2. Food security

* Describe he importance of bushmeat in the food, socio-cultural and economic
* Have you recently been more or less difficult to buy or find food?
* What kind of meat do you eat? Place by price, availability, taste, importance granted or other?
* If you could not hunt wildlife what other foods will you eat? How this will affect he (your savings, for example?)

3. Consumer:

* Are the people here eating bushmeat? What do you associate with the term?
* Why?
* What are the alternatives?
* How much you pay for different species?
* How can you prepare meat?
* Are you using wild animals for something else?

4. Hunting

* Can you describe the process of hunting for consumption?
* How do you find the animals?
* Is what you sell them or eat them yourself? If you even, with whom and where you prepare and eat them? Which species?
* What do you do if you find dead animals? When was the last time you found one?
* Do the children hunt or collect dead animals?
* Is hunting is seasonal?
* When was the last time you killed bat, primate or duiker? How last month? Last year?
* How much time you spend hunting?

1. Sale

* What species do you sell?
* At what price?
* Who do you sell? What species?
* How do you transport the animals?
* Have you noticed a recent change in the sale of animals?

1. Knowledge and awareness on EVD

* What do you know about the ebola virus and wildlife / bush / domestic animal meat?
* Do you understand where does the risk?
* What is your opinion on raising awareness about this issue?
* What would you see as the best strategies to reduce the risks?
* What are the costs (or others) associated to you?
* What did you think of this interview?
* Do you have any questions for me?
* Do you know someone who would be interested to talk to me with the subject discussed?

### Guide for interviews and focus group discussions with health worker staff

Guide for interviews with Health and support staff

Date:

Place:

Interviewer:

Personnel Details:

* Age :
* Sex :
* Profession :
* Position:
* Ethnic group :
* Religion :
  + - 1. Professional Background
* Can you tell me a little about your background? Where are you from?
* Where did you go to school? What was your training?
* What was your experience of life and work in Freetown/Bo?
* Can you tell me a little about your work experience?
* Have you ever been engaged with this kind of work before?
* With non-governmental organizations or the government?
* Have you ever worked in a public health context?
* What kind of work do you like?
  + - 1. Overall Experiences with EBV control
* How have you been involved in the response?
* What kind of training have you received?
* How did you adapt your work to the control of the epidemic? Or has your work specifically be created for the control of the epidemic?
* Could you tell me about your work?
* What is the work like? Are there aspects that concern you? How did you cope them?
* How did you protect yourself and your family?
* Did anybody in your center get infected? Do you know how? What do you think might facilitate the infection? What might help to control it? If not: Why do you did you did not have infections in your center?
* Do you think that the preventive measures you are using con be used in the future?
* How the population concerned has received these activities?
* Have your relationship with your colleagues changed? Why?
* What your family and friends think about your work?
  + - 1. Everyday Work Experiences
* Could you ‘walk me through’ an average work day?
* How have these then to think about how this work has changed over time.
* What do you think was the main obstacles to curbing the spread of EVD?
* What worked? What has not?
* Have you noticed a change in messaging?
* What is your opinion on the information provided on Ebola?
* Do you have any ideas on how people should be informed after the outbreak?
  + - 1. Community
* Do you think the understanding of the community to the health structures have changed since the MVE? How?
* Have you encountered and addressed rumors or stigma? How did you cope them?
* According to you, what do you think are the reasons for the reluctance towards public health measure? What aspect can make people trust or accept public helath measures related with the control of epidemics?
  + - 1. Future
* How do you see your work changing when the epidemic is over?
* Do you think the understanding of the community to the health structures have changed?
* What is your opinion on the future of health structures in Sierra Leone and in general?

Do you want to ask something?

### Guide for observations for both themes

OBSERVATION GUIDE

OBSERVATION PLACE:

OBSERVATION Number (when it is at the same place):

DATE:

GPS COORDINATES:

CONSENT GIVEN BY:

OBSERVER:

* Time:
* Description of the site, services or rooms:
* Describe the different activities:
* Number of persons:
* Roles:
* Describe what happens:

## Justification of the use of verbal consent in anthropological studies

***NB: The code of Ethics of the American Anthropological Association (AAA) and the AAA’s Statement on Ethnography and Institutional Review Boards can be made available upon request***

**1. Evidence from literature on the relation between the informed consent process and data quality**

There is a strong relationship between the quality of social science data collected and the way informed consent is obtained and/or documented, and this has been known since the 1970s [1]. Indeed, the use of standard informed consent procedures (namely, those developed for clinical trials) can bias and change the study results [2]. The general underlying principle is participant reactivity, referring to how people adapt their response in relation to (1) whether they are aware of being part of a research; (2) the information revealed during the informed consent process; and, (3) the way (formality) consent is obtained [2-4].

The first and second criteria do not apply to the presented study protocol as (i) no covert research is planned and (ii) all information regarding the study will be conveyed during the informed consent process. The first two criteria, however, establish also a direct relation between the characteristics of the informed consent process and the quality of the data collected [5].

For our research protocol, the third aspect, the formality of the consent process is the most relevant. There has been an extensive debate on whether participants should be required to provide written consent or not - and the effect on data quality. Researchers have argued for different reasons against formal consent procedures in studies on human behaviour. First, the formality of the written consent shapes the interaction between researcher and respondent, potentially making the interview obtrusive and causing distrust (‘why are they asking me to sign a document when I’m just answering questions?’) as there is no congruent relation between answering questions and the requirement to sign a document. Given the fact that signing documents shapes the experience of the interview, this can lead potential respondents with certain characteristics (i.e. illegal activities, poverty, marginalization, illiteracy) to refuse to answer sensitive questions or lead to a direct increase in socially desirable answers [2, 6-11]. Secondly, signing a document can be perceived as negating anonymity and confidentiality by respondents (e.g. in those at risk of social exclusion/ stigmatization such as people living with HIV/AIDS or homosexuals in some settings).

**2. Justification of oral consent in current guidelines on ethics in biomedical research**

Both the Council for International Organizations of Medical Sciences (CIOMS) and the Nuffield Council on bioethics confirm that oral consent can be a good ethical choice, depending on the risk involved in the research and the local social and cultural context. For example, the CIOMS declaration (CIOMS 1991/2002) states: “Documentation of consent. Consent may be indicated in a number of ways. The subject may imply consent by voluntary actions, express consent orally, or sign a consent form. As a general rule, the subject should sign a consent form, or, in the case of incompetence, a legal guardian or other duly authorized representative should do so. The ethical review committee may approve waiver of the requirement of a signed consent form if the research carries no more than minimal risk – that is, risk that is no more likely and not greater than that attached to routine medical or psychological examination – and if the procedures to be used are only those for which signed consent forms are not customarily required outside the research context. Such waivers may also be approved when existence of a signed consent form would be an unjustified threat to the subject's confidentiality. In some cases, particularly when the information is complicated, it is advisable to give subjects information sheets to retain; these may resemble consent forms in all respects except that subjects are not required to sign them. Their wording should be cleared by the ethical review committee. When consent has been obtained orally, investigators are responsible for providing documentation or proof of consent.

Our study complies with the following CIOMS and Nuffield Council on Bioethics criteria:

1. Minimum risk. The risk of participating in the social science study is not greater than that attached to routine medical or psychological examination.

2. Signing forms for social interaction. Written consent is not “customarily required” for social interaction “outside the research context”.

If requesting that participants sign consent forms is inappropriate, other means of recording their genuine consent to participation in research is required to protect them from being enrolled in research that they have not consented to. In many circumstances, the research worker who is informing the participant will sign a form stating that the appropriate information was given and verbal consent received. An alternative is to record consent on audiotape. As an additional safeguard, it is desirable for an independent witness to observe the verbal consent. In some circumstances it may be more appropriate to have an independent witness to observe the process of providing information to the community and individuals, rather than observing the verbal consent to participate in research”

The presented study also fulfils the following criteria to obtain a waiver for written consent in social science research:

1. Illiteracy. Part of the population, potentially those most vulnerable to malaria might be illiterate.

2. Cultural norms. Signing documents is not part of daily practice in local communities and therefore carries special meaning/significance that can bias interview data as it sets the scene for the interview.

**3. Justification of oral consent in current guidelines on ethics in social science research**

The main guidelines for ethical research in the social sciences also confirm the requirement and need of oral consent, depending on the study and context.

As stated in the American Anthropological Association Statement on Ethnography: “It is often not appropriate to obtain consent through a signed form-for example, where people are illiterate or where there is a legacy of human rights abuses creating an atmosphere of fear, or where the act of signing one's name converts a friendly discussion into a hostile circumstance. In these and in other cases, IRBs should consider granting ethnographers waivers to written informed consent, and other appropriate means of obtaining informed consent should be utilized”.

The Common Rule allows IRBs to authorize oral informed consent. Section 46.117(c) of the regulations permits the waiver of written consent, either if the consent document would be the only form linking the subject and the research and if the risk of harm would derive from the breach of confidentiality or if the research is of minimal risk and signing a consent document would be culturally inappropriate in that context. Section 46.116(d) authorizes the IRB to waive informed consent or approve a consent procedure that alters or eliminates some or all of the elements of informed consent if four conditions are met: (1) the research is of no more than minimal risk; (2) the change in consent procedures will not harm the respondents; (3) the research could not "practicably be carried out without the waiver or alteration; " and (4) whenever appropriate, additional information will be provided to subjects after participation. These regulations can be interpreted to provide alternative means of obtaining consent. Consent can be assumed in instances where the respondent is free to converse or not with the researcher and is free to determine the level and nature of the interaction between participant and researcher. This in no way absolves the anthropologist from clearly informing participants about the purpose and procedures of the study, its potential risks and benefits, and plans for the use and protection of ethnographic materials gathered during the study.

According to the American Anthropological Association Code of ethics: “Anthropological researchers should obtain in advance the informed consent of persons being studied, providing information, owning or controlling access to material being studied, or otherwise identified as having interests, which might be impacted by the research. It is understood that the degree and breadth of informed consent required will depend on the nature of the project and may be affected by requirements of other codes, laws, and ethics of the country or community in which the research is pursued. Further, it is understood that the informed consent process is dynamic and continuous; the process should be initiated in the project design and continue through implementation by way of dialogue and negotiation with those studied. Researchers are responsible for identifying and complying with the various informed consent codes, laws and regulations affecting their projects. Informed consent, for the purposes of this code, does not necessarily imply or require a particular written or signed form. It is the quality of the consent, not the format that is relevant”.

According to the European FP7 Guidance Note for Researchers and Evaluators of Social Sciences and Humanities Research, “When seeking to obtain individual, written consent from research participants, researchers should take into account the cultural and ethical norms of the population(s) under study. In case a written consent does not respond to the ethical norms of those studied, the applicant must provide alternative ways of obtaining consent (such as recording the oral consent, the presence of witnesses, all procedures used must be documented)”.

**4. Conclusions**

*4.1. Characteristics of the informed consent process*

Two separate questions are addressed: (1) should consent be oral or written in social sciences research and (2) how should consent be documented. Oral consent is the appropriate ethical choice, given (i) the disciplinary nature of the study (social sciences) and (ii) the low risk of participating in the study (not greater than that attached to routine medical or psychological examination); (iii) the likelihood of increasing response bias due to participant reactivity linked to the formal nature of signing a document; (iv) the ethical guidelines allowing the use of oral consent in illiterate populations and/or when signing is not a part of daily practice in local settings. The IRB of the Tropical Medicine in Antwerp, several EDTCP funded protocols, The Bill and Melinda Gates Foundation, and others, have followed this logic and approved, on several occasions, the use of oral consent.

*4.2. Documentation of the consent process*

1. Formal in-depth interviews. For in-depth interviews that are formal in nature, there are two options: (1) After consent is received from the participant, and in those cases that the respondent agrees that the interview will be tape recorded, the confirmation of this consent will be tape-recorded (the initial consent cannot be tape recorded since –by definition- no consent to do so has been given prior to the informed consent process). (2) If the interviewee consents to participating in the research but does not want the interview to be tape-recorded, the consent will be documented either by (i) the use of a witness who will sign the consent form, in case no witness is available, (ii) by the researcher him/herself, who will complete the consent form. The researcher will follow the principles of ‘The European Code of Conduct for Research Integrity’.

2. Informal conversations. To ensure data quality, interviews that have to be informal in nature (due to the characteristics of the respondents, of the setting, of the topic discussed, etc.) will not be tape-recorded but will either be documented by (i) a witness of the consent procedure, who will sign the consent form, in case no witness is available, (ii) by the researcher him/herself by completing the consent form. The researcher will follow the principles of ‘the European Code of Conduct for Research Integrity’.

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