

# How local knowledge collected about one disease helped stem the spread of another



**Anthropological research into Sierra Leonean institutions and the socio-cultural beliefs and practices surrounding infectious disease found vital but unanticipated application when the Ebola epidemic struck West Africa.**

VIRAL haemorrhagic fevers are a group of illnesses caused by viruses that usually live in animal hosts but can be transmitted to people. These viruses can cause fever, with severe cases causing internal bleeding, often leading to death. In Sierra Leone, the viral haemorrhagic fever Lassa fever is endemic. It adds significantly to the health burdens, poverty and vulnerabilities faced by people in the country.

Estimates of Lassa fever's

prevalence vary widely, from 100,000 to 13 million infections and 5,000 to 67,000 deaths each year across West Africa. Transmission of the disease is usually via *Mastomys natalensis*, a common rodent in the region which hosts the Lassa fever virus, but as with other haemorrhagic fevers once the virus infects humans person-to-person transmission can also occur.

Much remains unknown about Lassa fever. Until recently, there had been little research

into the disease, with the research that did exist either very out of date or chiefly consisting of laboratory-based studies intended for clinical use. This is because the Lassa virus has been classed as a 'Category A pathogen'. In other words, it is considered to be one of the world's most dangerous organisms and a potential bioweapon.

The Sierra Leone team of the Dynamic Drivers of Disease in Africa Consortium wanted to take a more holistic approach to the disease, the impacts of which are a severe barrier to development. The social science team was particularly interested in investigating how the disease's dynamics interact with a range of local social and ecosystem service processes, such as farming, the gathering of food and medicinal plants, and hunting, as well as exploring the local knowledge and cultural understandings surrounding the disease. The research was conducted in Kenema District, in the forest zone of eastern Sierra Leone, which has the highest recorded incidence of Lassa fever in the world.

This work found unexpected



Interviews helped to explore cultural understandings about disease *Image: Gianni Lo Iacono*

relevance when the 2014/2015 Ebola epidemic swept through Sierra Leone, Guinea and Liberia. Though many aspects of the Consortium's work had to stop during the crisis as movement restrictions were imposed, and as lab' and clinic facilities turned over to Ebola work, much of the learning about the social dynamics of Lassa fever were found to be applicable to Ebola, which has similar symptoms to Lassa.

### **Anthropological advice**

The origins of Ebola remain unconfirmed, but the host for the virus is widely thought to be bats. Indeed, the initial transmission to the human population in the 2014 outbreak (the 'spillover event') was traced to a two-year-old boy thought to have contracted the virus while playing by a bat-infested tree. Although this explanation is contested, what is clear is that after the initial spillover the virus spread quickly from person to person. As the public health response in West Africa faltered for a variety of reasons, but especially social and cultural ones, Professor Melissa Leach, Principal Investigator of the Drivers of Disease consortium, and Dr Annie Wilkinson, researcher with its Sierra Leone team, worked



The Kenema Lassa lab'. It moved over to Ebola work during the crisis. Image: Gianni Lo Iacono

with partners at the London School of Hygiene and Tropical Medicine and universities of Sussex, Exeter and Njala, Sierra Leone, to offer advice to the medical and humanitarian response teams. They formed the Ebola Response Anthropology Platform (ERAP) ([www.ebola-anthropology.net](http://www.ebola-anthropology.net)), funded by Wellcome/UK Department for International Development (DFID) R2HC, that became a focal point for anthropological advice in the UK and internationally. It delivered real-time evidence-based advice to organisations such as DFID, the UK Ministry of Defence, the World Health Organization (WHO), the UN Mission for Ebola Emergency Response (UNMEER) and many others.

### **Government strategy**

ERAP members provided valuable insight into the social dimensions of identifying and diagnosing cases, managing death and funerals, caring for the sick, clinical trials and research, communications and community engagement. It also helped response teams to understand and address the resistance and violence against health workers that magnified the epidemic. Members of ERAP carried out research projects in Sierra Leone too, for example into local and international responses, and local perspectives on Ebola Community Care Centres.

ERAP had a major influence on the UK Government's strategy: Melissa Leach was on its Scientific Advisory Group for Emergencies (SAGE) and, with other Platform members, made up the social science sub-committee directly advising the UK Chief Medical Officer and Chief Scientist. She joined the WHO Science Committee, WHO Ethics Working Group and Wellcome

Trust Ebola Trials Committee. She and Annie Wilkinson presented written and invited oral evidence to four UK Parliamentary inquiries on Ebola.

During the epidemic period, the website energised US, European and West African networks, being accessed by more than 16,000 users.

Drivers of Disease and ERAP also provided the launch pad for a second initiative, Ebola: Lessons for Development. This explored the broader implications of the crisis via a high-level event (attended by more than 100 development policymakers, humanitarian agencies and researchers), the production of nine practice papers, and related media and social media work.

These initiatives – which achieved unprecedented recognition of the relevance of anthropological research for responses to infectious diseases – illustrate how learning can have impact in the most surprising and unforeseen of ways. Sometimes this can be many years after the collection of data; and sometimes, as in this case, by the swift and flexible application of that learning hot from its collection.

*This is one of a series of impact case stories produced by the Dynamic Drivers of Disease in Africa Consortium, an ESPA-funded research programme designed to deliver much-needed, cutting-edge science on the relationships between ecosystems, zoonoses, health and wellbeing with the objective of moving people out of poverty and promoting social justice. Find more info at [www.driversofdisease.org](http://www.driversofdisease.org).*

