Emerging infectious diseases in changing environments of East Africa (GLOBEID)

Principal Investigator:
professor Tarja Sironen

International Partners:
University of Nairobi, Kenya
Maasai Mara University, Kenya
University of Arkansas, US
Harvard Medical School, US

We are living in an era of emerging infectious diseases (EIDs), and since COVID-19, we have already witnessed the worldwide outbreak of mpox virus, increased circulation and mammalian adaptation of avian flu, and cases of Marburg in new areas. All of these and a major part of EIDs comes from animals. EIDs are increasing due to global changes such as rising human-wildlife interactions, urbanization, climate and land use changes. These challenge the existing global health infrastructure, economy and safety, and hinder global development. The impact of these global challenges is not equal, and the burden is particularly high in developing areas, including Africa, where infectious disease outbreaks frequently occur.
An efficient response relies on early detection and skillful rapid response at the site where outbreaks begin. Unfortunately, most countries in the frontline of pandemic prevention are lacking resources. The overarching aim of GLOBEID is to understand, mitigate and prevent potential EID threats in Kenya. The project arises from previously established and now even stronger collaboration between University of Helsinki (UH) and University of Nairobi (UoN), Kenya. In GLOBEID, we will detect, identify and survey viral zoonoses circulating in Kenya, as well as model the anthropogenic and environmental factors that impact the prevalence and spread of these diseases. We work at a biodiversity hotspot Taita-Taveta county and focus on vector-borne pathogens as they are heavily impacted by changing environmental conditions, and to bat- and rodent-borne pathogens, as these are hosted by the most important reservoirs of zoonotic viruses. Locally collected vector, reservoir, and human data is essential and together with disease risk modelling enable effective decision-making in the study regions, and wider in Kenya and Africa. We will build local capacity to perform pathogen diagnostics and respond to outbreaks through training organized with the KAVI institute of UoN. In GLOBEID, we actively engage stakeholders

from general public to public health authorities in communication and dissemination of the research findings raising awareness to EIDs and mitigation measures. As we are living in an era of infectious disease outbreaks, the time to act is now.

Main publications:

Masika, M.M., Korhonen, E.M., Smura, T., Uusitalo, R., Vapalahti, K., Mwaengo, D., Jääskeläinen, A.J., Anzala, O., Vapalahti, O. & E. Huhtamo (2020). Detection of dengue virus type 2 of Indian origin in acute febrile patients in rural Kenya. *PLOS Neglected Tropical Diseases, 14(3): e0008099.*

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Contact Information for PI:

Professor Tarja Sironen
tarja.sironen@helsinki.fi
Phone +358 50 447 1588

General Project Information

Project Website: https://www.helsinki.fi/en/researchgroups/emerging-infections-research-group

www.aka.fi/develop2

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