



Call for Fellowships Afrique One-ASPIRE

TTP5: Human and Animal Disease Surveillance-Response Systems

TTP5 aims to address the need to increase the reporting of zoonotic diseases through integration of human and animal surveillance systems, the use of innovative surveillance tools and involvement of communities in disease reporting. This TTP will focus on three themes:

- Surveillance tools and community involvement
- Surveillance-response systems
- Cost–benefit analysis of integrated human–animal disease surveillance systems

Theme 2: Surveillance-response systems

Ref: [TTP5-Surveillance-Response-PhD2](#)

Project Title: Zoonotic disease surveillance-response in nomadic pastoralists in Sub-Saharan African countries: the role of human–animal disease surveillance integration systems in zoonosis control

Enrolment: The selected candidate will be enrolled at NM-AIST or SUA, Tanzania or EISMV, Senegal.

Project Description: Pastoralists and other 'hard to reach' communities are not well served by conventional health services. Pastoralist communities are in permanent close contact with livestock and are therefore at high risk of exposure to zoonotic pathogens. Tuberculosis (TB) and brucellosis are widespread in both animal and human nomadic populations. It has been shown that pastoral communities often engage with human health services more effectively when interaction is catalysed through animal health service delivery. This project will liaise with on-going national and NGO programmes that are engaging with mobile populations (e.g. for malaria and TB control) and will explore the potential to build on these platforms for developing

integrated active surveillance systems. A pilot study will be carried out in order to design such a system and integrate data collection, in human and animal populations, through existing animal health service delivery pathways.

The project will explore the feasibility, reliability, acceptability and the costs of collecting data via tuberculin skin tests involving the farmers who will be recording the 3-day cattle responses. The project will also examine possible mitigating responses to bovine TB surveillance data, including recommendations for boiling milk and slaughter of reactors.

Equally we aim to explore the feasibility, reliability, acceptability and cost of collecting data on conventional diagnostic rapid tests for brucellosis in order to identified diseased cows that have to be removed from the farms to protect women and children from brucellosis infection. Women and children will be trained to identify animal brucellosis symptoms and to report new cases to veterinary staff using mobile phones.

In order to identify TB and brucellosis cases in nomadic populations, the exposed herd will be reported to the medical staff by mobile phones used for disease investigation. This way all new cases in the herd will be reported and treated by the program. One MSc student will focus on the development of new strategies that will help to detect new TB cases in both human and animal hosts. A second MSc candidate will assess the impact of an integrated human–animal health service in the detection of brucellosis cases in human populations and establish strategies that will help limiting abortions in both human and animal populations. The two different topics developed within this frame are:

- Human–animal TB control in nomadic people: the role of communities and new technologies in the detection of new cases (1 MSc)
- Human–animal brucellosis control in nomadic people: the impact of an integration intervention in the reporting and treatment of new human cases and removal of infected animals from the herds (1 MSc)

The project will be based in Chari Baguirmi and Hadjer Lamis (Chad) and Kilimanjaro (Tanzania). Laboratory work will be done at IRED (Chad), NMIMR (Ghana) and SUA (Tanzania).

Mentorship Team: Rudowick Kazwala (SUA); Joram Buza (NM-AIST); Kennedy Kwasi Addo (NMIMR); Richard Ngandolo Bongo (IRED); Bassirou Bonfoh (CSRS); Jakob Zinsstag (SwissTPH); Prosper Chaki and Nicodemas Govella (IHI)

Qualifications: The candidate must be a citizen of an African country. MSc in health and allied sciences. Experience in working on TB or brucellosis will be an added advantage.

For more information, contact the Co-leads:

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