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## Press Release

### Cutting-edge DNA sequencing to identify causes of acute fever in Africa and support better outbreak preparedness and response

***The Bill & Melinda Gates Foundation grants 2.5 million USD to Swiss scientists to strengthen the surveillance of acute febrile illnesses in Africa by using high-throughput DNA sequencing techniques allowing for the precise identification of the pathogens involved. This research project, called the “SAfia project”, is jointly conducted by the Policlinique Médicale Universitaire of Lausanne (PMU), the Geneva Centre for Emerging Viral Diseases (University of Geneva Faculty of Medicine and Geneva University Hospitals), the University Hospital of Lausanne (CHUV) and the Swiss Tropical and Public Health Institute (Swiss TPH). By understanding the causes behind acute fever, this project aims to strengthen outbreak preparedness and response.***

In Swahili, the word “Afia” means “health”, making it well suited to the acronym “Acute Febrile Illness in Africa”. Indeed, if fever is a frequent symptom among patients attending outpatient clinics in Africa, it nevertheless constitutes a diagnostic challenge for clinicians as well as a major concern for health authorities, especially in the context of recent emerging infectious diseases.

The SAfia project aims to investigate the infectious causes of fever - and particularly the viruses at stake - amongst adults and children treated in primary care facilities in Tanzania, by using the latest, high-throughput genetic sequencing techniques developed all around the world. Indeed, patients attended at primary care level are key sentinels for the surveillance of infectious diseases, as they are often affected by common and neglected pathogens that can be found in their community. Conversely, patients treated in reference hospitals are usually affected by more severe illnesses. The SAfia project will thus provide critical epidemiological information of endemic and emerging viruses, bacteria and parasites at community level that will better inform patient management, health planning and epidemic preparedness and response.

The devastating Ebola, Chikungunya and Zika epidemics have recently highlighted the need for highly sensitive screening tools to strengthen the surveillance of infectious diseases, with the capacity to identify unrecognized viral species, unexpected genetic variants or emerging pathogens of epidemic potential. The SAfia project will explore the validity of these new genetic technologies to determine their potential role in future epidemic surveillance.

Moreover, this project differs from the numerous studies using similar technology by remaining firmly anchored in clinical medicine. Many of the acute fever episodes in Africa have indeed unknown etiologies. By linking the pathogens found with in-depth analyses to the clinical information available for each patient, the SAfia project will shed light on the manifestations and outcomes of the main causes of fever in Africa.

This project is funded by the Bill & Melinda Gates Foundation with a grant of 2.5 million USD over 2.5 years. It will support complementary clinical and genetic research activities at the PMU, the CHUV and the Geneva Centre of emerging viral diseases. It is led by Dr. Valérie D’Acremont (PMU in Lausanne and Swiss TPH in Basel), and by Prof. Laurent Kaiser (University of Geneva and Geneva University Hospitals).

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