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Population Immunity Against mosquito-borne diseases and other infectious diseases in Vanuatu: the PIANO project

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Abstract text

Background: The project aims to determine the seroprevalence of the Vanuatu population for infectious and mosquitoes-transmitted diseases that have affected the country in the past to estimate to which pathogens the Vanuatu population has been exposed to and thus assess the level of epidemic risk in case of introduction of these pathogens in the country.

Methods: 1,200 volunteers from age 6 and above representative of the Vanuatu population will be enrolled to collect a blood sample. Blood samples will be tested for the presence of antibodies against arboviruses as dengue, Ross River, chikungunya, Zika but also malaria, COVID-19, hepatitis B and leptospirosis by using the Luminex technic.

Results: After agreement from Vanuatu National Ethics Committee, inclusions took place between Octobre 2022 to May 2023 in the islands of Efate, Santo, Malekula, and Tanna. In total, 20 sites including 6 schools participated to the project. 1,122 participants were included in the study, corresponding to 93.5% of the target. The 19-34 years old age group is underrepresented. Serological analysis is under investigation.

Discussion: The results of the project will inform Health Authorities about the populations at risk of developing infectious or mosquito-borne diseases and will help adapt prevention and public health intervention strategies to protect the Ni-Vanuatu population.