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Seroprevalence of arbovirus antibodies, French Guiana, 2017

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Arboviral infections have become a significant public health problem with the emergence and re-emergence of arboviral diseases worldwide in recent decades. Given the increasing number of cases, geographic spread, but also health, social and economic impact of arboviral outbreaks, estimating their true burden represents a crucial issue but remains a difficult task. In French Guiana, the epidemiology of arboviral diseases has been marked by the occurrence several major dengue fever (DENV) outbreaks over the past few decades, recent emergences of Chikungunya (CHKV) and Zika virus (ZIKV) and the circulation of Mayaro virus (MAYV). To assess antibody seroprevalence against DENV, CHIKV, ZIKV, MAYV a random 2-stage household cross-sectional survey was conducted among the general population. We enrolled 2,718 individuals aged 1-87 years from June 1 to 12 October 2017. We performed detection of DENV, CHIKV, ZIKV, MAYV IgG antibodies on collected blood samples using a Microsphere Immunoassay (MIA). Socio-economic data, environmental variables and exposure to mosquitoes, perceptions of the illness and risk of contracting arboviral infections were collected using a standardized questionnaire administrated to all individuals included in the survey. Overall seroprevalence rates for antibodies against ≥1 DENV were 68.8% [66.4%-71.2%] and differed significantly according to age and geographical area. Seroprevalence rates of CHIKV, ZIKV and MAYV antibodies were respectively 23.2% [20.5%-26.1%], 23.1% [20.7%-25.6%] and 11.2% [9.7%-13.0%] and did not differed significantly according to gender or age. The distribution of seroprevalence rates for ZIKV antibodies corroborate previous findings for pregnant women sampled during the 2016 ZIKV outbreak. Future steps will help to identify associated factors and to predict the risk of transmission in the different areas of the country.

Biography

Claude Flamand has completed his PhD from Paris-Saclay University, France. He is currently the Head of Epidemiology Unit of Pasteur Institute in French Guiana and his main research interest is to study epidemics and infectious diseases outbreaks to better understand how pathogens spread in human populations. He has over 48 publications in the field of vector-borne and/or infectious tropical diseases that have been cited over 200 times and his publication H-index is 10.

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