**Analysis of the spatial distribution of Covid-19 cases in Benin**
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Context: Since March 2020, Benin, like the rest of sub-Saharan Africa and other regions of the world, has been facing a health crisis situation due to the COVID-19 pandemic. In response, Benin has opted for adaptive response measures according to the evolution of the pandemic. The STREESCO project is part of this dynamic by strengthening epidemiological surveillance at three sentinel sites in Benin. We present here the preliminary results of the analysis of the spatio-temporal distribution of cases on COVID-19

Methods: The analysis of the spatial dynamics of COVID cases was carried out in two phases. The first phase consisted of setting up an epidemiological surveillance system in three sentinel sites, namely Cotonou (the economic capital), Allada (a secondary town in the south) and Natitingou (a town located in the north of the country with a strong connection to the countries of the Hinterland). In addition to socio-demographic data, the aim was to collect data on the neighbourhood of residence, health status, in particular the virological status of suspected cases, contact cases and health workers involved in the fight against COVID-19. A first analysis of the spatial distribution of COVID-19 cases was mapped.

In a second step, spatio-temporal analyses were performed using the spatial scanning statistic implemented in SatScan by Kulldorff. This method allows the detection of regions where the incidence of the disease is higher than expected in time and space by assigning them a relative risk, thus producing a list of spatio-temporal clusters that can be used to identify epidemic phases in the study area.

Results: The epidemiological surveillance implemented allowed the analysis of data from 4178 participants distributed over the three sites as follows: Cotonou (2 188), Allada (1036), Natitingou (954). The spatial analysis shows a different spatial distribution of COVID-19 cases per site. Clusters of positive cases were noted in Cotonou.

Conclusion: These analyses highlight a variable incidence of COVID-19 cases depending on the geographical area. These analyses deserve to be deepened by completing this geographical area with data from other screening sites. An analysis of the risk factors for COVID-19 in relation to geographical location will allow a better appreciation of the spatial distribution of COVID cases in Benin.