

The initial 100-day COVID-19 landscape in Kenya: trends, mitigations and impacts

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Abstract

Since the first case of the novel COVID-19 was recorded in Kenya on 13 May, 2020, the increase in positive cases, transformation into community transmission, and emergence of more epicenters, depicts a disconcerting trend despite the multi-phased government-driven mitigations. Hence the urgent need for more robust mechanisms to track and map COVID-19, and design targeted mitigations. Such interventions include GIS-mapping systems coupled with multivariate analysis, to evaluate the internal dynamics based on prevalence, control measures, responses and successes to combat COVID-19.

We applied GIS and statistical analyses to map the 100-day disease pattern, outlined country's preparedness and COVID-19 projections post-100 days. Results indicate an average daily testing capacity of 11% and a corresponding daily detection rate of 7%. Between March-June 2020, the cumulative 122,418 tests reported 4,783 positive cases. The highest figure (2,816) was reported in June against 57,744 tests conducted. These figures represent 0.26% tested and 0.01% positive cases respectively of the country's population. Nairobi, Mombasa and Busia counties were identified as 'hot-spots'.

Despite the growing pressure to re-open businesses and public facilities due to socioeconomic challenges, the government should carefully review and rely on expert opinion and initiate sector-specific strategies in combating COVID-19 under the 'new normal'.

Keywords: COVID-19; Community transmission; GIS mapping; Hot-spots; Social distancing; Mitigations; Public-health awareness

1. Introduction

The first case of a pneumonia-like disease of unknown etiology, later identified as the Novel Coronavirus (2019-nCoV) disease, was traced back to Wuhan City in Hubei Province of China on 31st December, 2019. In under 5 days from detection, China had reported 44 case-patients and by 20th January, 2020, the confirmed cases had risen to 278 (WHO, 2020d). The first case of the COVID-19 disease in Africa was reported in Egypt by the country's Minister of Health and Population from a 33-year old foreign national on 14th February 2020 (Africa CDC, 2020). Since then, all the 54 countries in Africa have recorded surges in active cases, significant recoveries and deaths (UNDP Africa, 2020). As at 20th June, 2020, the cumulative cases and deaths in Africa had reached 216,999 and 4,874 respectively, representing 2.49 and 1.06% of global incidents respectively (WHO, 2020c). In the same period, the proportion of COVID-19 cases and deaths in Europe represented 31 and 43% respectively against the global figures (WHO EURO, 2020). The African Union Commission responded to the

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