

Epidemiological Comparison of the First and Second Waves of the COVID-19 Pandemic in Nigeria, February 2020-April 2021

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Background

The emergence of the Coronavirus Disease 2019 (COVID-19) has arguably been one of the biggest threats to global health security in the 21st century. With reports of surges in COVID-19 case numbers across over 50 countries, country-level epidemiological analysis is required to inform context-appropriate response strategies for containment of the outbreak and mitigation of its effects.

Objectives

To compare the epidemiological features of the first and second waves of COVID-19 in Nigeria between 27th February 2020 and 3rd April 2020.

Methods

We conducted a retrospective analysis of the Surveillance Outbreak Response Management and Analysis System (SORMAS) data of the first and second epidemiological waves which were between 27th February and 24th October 2020, and 25th October 2020 to 3rd April 2021, respectively. Descriptive statistical measures including frequencies and percentages, test positivity rate (TPR), cumulative incidence (CI), and case fatality rates (CFR) were compared. A *P*-value of <0.05 was considered statistically significant. All statistical analyses were carried out in STATA version 13 (Stata Corp. LP, College Station, TX, United States of America).

Results

There were 802,143 tests recorded during the study period (362,550 and 439,593 in the first and second waves respectively). Of these, 66,121 (18.2%) and 91,644 (20.8%) tested positive in the first and second waves respectively. There was a 21.3% increase in the number of tests conducted in the second wave with TPR increasing by 14.3%. CI during the first and second waves were 30.3/100,000 and 42.0/100,000 respectively. During the second wave, confirmed COVID-19 cases increased among females and people 30 years old or younger, and decreased among urban residents and individuals with travel history within 14 days of sample collection (*p*-value<0.001). Most confirmed cases were asymptomatic at diagnosis during both waves: 74.9% in the first wave; 79.7% in the second wave. CFR decreased during the second wave (0.7%) compared with the first wave (1.8%). Mean age at death was significantly (*p*-value<0.001) higher in the second wave (60.7years +/- 17.4) compared with the first wave (56.9years +/- 16.3).

Conclusion

Nigeria experienced a larger but less severe second wave of COVID-19. We recommend a sustenance of COVID-19 preventive measures, and risk communication activities especially targeting the elderly who are at higher risk of mortality. We also recommend the rapid scale-up of vaccination to prevent the resurgence of another wave.

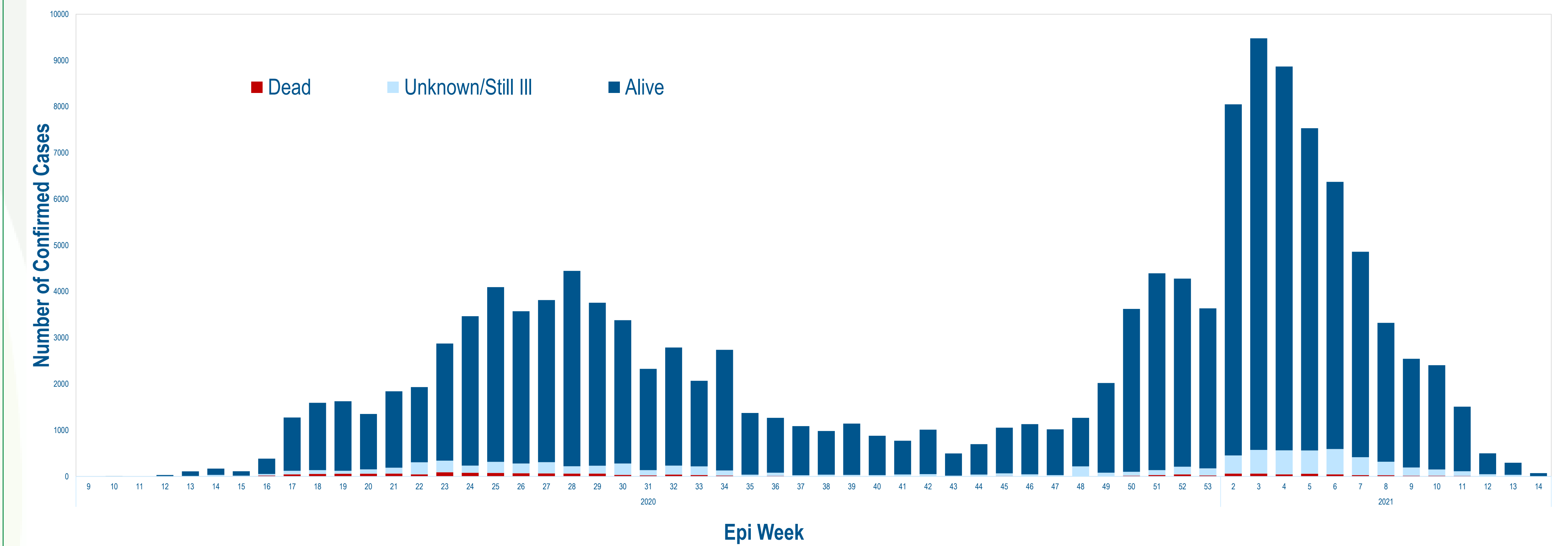


Figure 1: Distribution of Confirmed Cases showing Outcomes by Epi Week

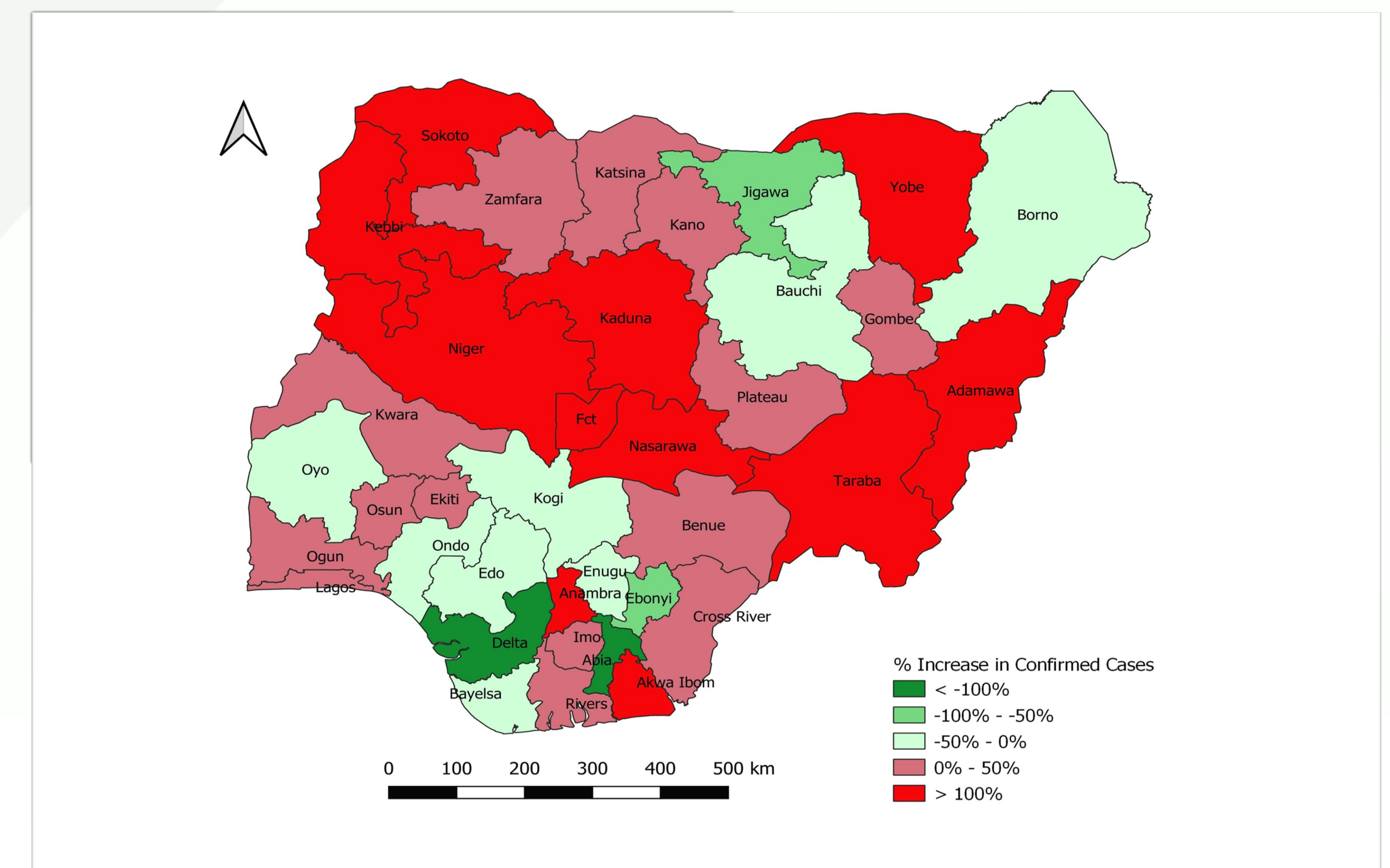


Figure 2: Percentage Increase in Cases between the First and Second Waves