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(ABOMEY CALA, 04 BP 1525, and **Kolawolé V. Salako, James M. Tison, Calistus N.
Ngonghala and Romain Glèlè Kakai**. *Predicting COVID-19 spread in the face of control
measures in West Africa*. Preliminary report.

The COVID-19 pandemic has been causing devastating health and economic damage globally since its emergence in 2019. Understanding current patterns of the pandemic spread and forecasting its long-term trajectory is essential in guiding policies aimed at curtailing the pandemic. We formulate and use a deterministic compartmental model to (i) assess the current patterns of COVID-19 spread in West Africa, (ii) evaluate the impact of currently implemented control measures, and (iii) predict the future course of the pandemic with and without currently implemented and additional control measures in West Africa. Numerical simulations of the model using baseline parameter values estimated from West-African COVID-19 case data project a 67% reduction in the daily number of cases when the first wave of the pandemic in West Africa attains its peak. In addition, we found that disease elimination is difficult when asymptomatic individuals are not identified and isolated in a timely manner. We showed that the currently implemented measures triggered a 33% reduction in the time-dependent effective reproduction number. (Received September 21, 2021)