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Real-Time Monitoring Systems in Urban Lagos: Impact on Mosquito Biting Rates and Malaria Incidence Control Efforts

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Abstract

Urban areas in Lagos, Nigeria, are experiencing rapid population growth and dense human settlements which contribute to increased mosquito populations and malaria incidence. This comparative study employed data from two surveillance zones in different parts of Lagos, utilising advanced sensor networks and predictive modelling to monitor environmental factors affecting mosquito populations. Real-time monitoring revealed a significant reduction (30%) in mosquito biting rates during the peak malaria season when compared to baseline conditions. The real-time monitoring systems demonstrated effectiveness in predicting and mitigating mosquito-borne diseases, thereby supporting more targeted and efficient control strategies. Further implementation of these systems should be prioritised to enhance disease prevention efforts and reduce health disparities in urban Lagos. Mosquito Monitoring, Real-Time Systems, Urban Health, Disease Control

Keywords: *Urbanization, Geographic Information Systems, Remote Sensing, Mosquito Ecology, Disease Vector Control, Spatial Analysis, Public Health Surveillance*

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