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DC, DC 20059. *Optimal Use Of Mosquito treated nets and Insecticide In Controlling Malaria
Disease.*

In this work, we use mathematical models to study the impact of mosquito bed nets and insecticide on the incidence of malaria disease. As a case study, we use our mathematical model to fit clinical data obtained from Missira, a malaria endemic region of Mali. Using the clinical data, we determine the optimal number of people that need to be protected and the optimal number of mosquitoes that need to be killed in order to control the malaria disease in the region. (Received September 14, 2010)