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CHIKUNGUNYA EPIDEMIC MODELLING AND APPLICATION OF MCMC METHODS

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ABSTRACT

We have formulated model for the transmission dynamics of the Chikungunya. We have formulated *a SEIRD model* for Chikungunya. Monte Carlo analysis was performed to determine the sensitivity of infection dynamics to the parameters. We have estimated the posterior mean of the rate of infection from susceptible to infected is 0.1411 (0.1308, 0.1513) per day and the posterior mean rate of the rate of recovery in a community is 0.0245 (0.0249, 0.0257) per day. It shows that, greater rate of infection than rate of recovery for possible intensity of increment in infections. The estimated reproduction number R_0^T is 2.7938 with credible interval (2.0305, 3.5925).

KEYWORDS: Chikungunya, Gibbs Sampling, Markov Chain Monte Carlo, Outbreak and Vector