

1125-VM-2020 **Kodwo Annan*** (kannan@ggc.edu), School of Science & Technology, Georgia Gwinnett College, Lawrenceville, GA 30043. *Stability and Time-scale Analysis of Malaria Transmission in Human-Mosquito Population.*

More realistic human-mosquito mathematical model in which re-infected asymptomatic humans are considered is presented. The Next Generation Matrix technique is used to construct epidemiological threshold known as the reproduction number. Locally and globally asymptotically stable disease-free equilibrium conditions for the model are established. Possible time-scale of events for model transition from non-endemic to endemic are analyzed. Results show that the buildup of the latent asymptomatic humans at steady state is the main dynamics of malaria in the endemic region. (Received September 19, 2016)