

1027-92-211

Xiaohong Wang* (xwang@mathpost.asu.edu), **Carlos Castillo-Chavez**, **Ananias Escalante** and **Priscilla Greenwood**. *Mathematical modeling of malaria infection: the impact of treating asymptotic infection.*

Asymptotic malaria infection is common in malaria-risk area. Considering two different immune responses (innate immunity and adaptive immunity), mathematical models are formulated to study the impact of treating individuals with asymptotic malaria infection. Basic reproductive numbers are derived and stability analysis is conducted at the disease-free equilibrium (DFE). Stability of endemic equilibrium is studied by numeric simulations. We show that treating as low as 3% individuals with asymptotic malaria infection will reduce the prevalence of infection dramatically. (Received February 27, 2007)