1107-92-135 **Miranda Teboh-Ewungkem**, **Olivia Prosper**, **Katharine Gurski*** (kgurski@howard.edu), **Carrie Manore**, **Angela Peace** and **Zhilan Feng**. *Intermittent Preventive Treatment (IPT) and the spread of drug resistant malaria.*

IPT is a malaria control strategy in which vulnerable asymptomatic individuals are given a full curative dose of an antimalarial medication at specified intervals, regardless of malaria infection status. A mathematical model is developed to explore the effect of IPT use on the malaria prevalence and control under different scenarios. The model includes both drug-sensitive and drug-resistant strains of the parasite as well as interactions between human hosts and mosquitoes. The basic and invasion reproduction numbers for both strains are computed and used to examine the role of IPT on the development of resistant infections. Numerical simulations are performed to examine the effect of treatment of symptomatic infections and IPT on the prevalence levels of both strains. Results suggest that the schedule of IPT may have an important influence on the prevalence of resistant infections and total infections of both strains. The extent to which IPT may influence the development of resistant strains depends also on the half-life of the drug used. A sensitivity and uncertainty analysis indicates the outcomes are most sensitive to the model parameters: reduction factor of transmission for the resistant strain, rate of immunity loss, and the clearance rate of sensitive infections. (Received January 10, 2015)