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Jeremy J. Thibodeaux* (thibodea@loyno.edu), Loyola University New Orleans, Department of Mathematical Sciences, Campus Box 35, New Orleans, LA 70118, and **Timothy Schlittenhardt**. *An Optimal Treatment Strategy for Malaria Infection*. Preliminary report.

A size-structured model of erythropoiesis subject to malaria infection will be presented. The model consists of a system of two nonlinear hyperbolic partial differential equations and three ordinary differential equations. Through sensitivity analysis, it has been previously found that the model is particularly sensitive to the number of parasites released per bursting infected erythrocyte (red blood cell). By using techniques of optimization, we will show that the model predicts periodic treatments that focus on the aforementioned parameter as an optimal strategy. (Received September 17, 2010)