

Management Strategies in a Malaria Model Combining Human and Transmission-Blocking Vaccines

Eric Numfor et al.

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Abstract: A new mathematical model studying control strategies of malaria transmission is formulated and analyzed. The existence of a backward bifurcation is established analytically in the absence of vaccination, and numerically in the presence of vaccination. Optimal control strategies, using vaccination and vector control are investigated to gain qualitative understanding on how the combination of vaccination and vector control should be used to reduce disease prevalence in a malaria endemic setting.