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Rachidi B Salako* (salako.7@osu.edu), **Dawit Denu** (ddenu@georgiasouthern.edu) and **Sedar Ngoma** (ngoma@geneseo.edu). *Existence of traveling wave solutions of a deterministic vector-host epidemic model with direct transmission.*

We consider an epidemic model with direct transmission given by a system of nonlinear partial differential equations and study the existence of traveling wave solutions. When the basic reproductive number of the considered model is less than one, we show that there is no nontrivial traveling wave solution. On the other hand, when the basic reproductive number is greater than one, we prove that there is a minimum wave speed c^* such that the system has a traveling wave solution with speed c connecting both equilibrium points for any $c \geq c^*$. Moreover, under suitable assumption on the diffusion rates, we show that there is no traveling wave solution with speed less than c^* . We conclude with numerical simulations to illustrate our findings. The numerical experiments supports the validity of our theoretical results. (Received September 14, 2019)