

IMPACTS OF SATURATED TREATMENT AND
INCIDENCE FUNCTIONS ON THE DYNAMICS OF
CONSISTENT DELAYED CHOLERA MODEL

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A new realistic delay differential equation-cholera models using saturated incidence function and controls with two sources of infections (human and aquatic environment) is formulated and fully analyzed. The effects of saturated incidence, control functions and delay as they affect the dynamics of such models are determined and compared to the existing literature. Sensitivity analyses are conducted to find the most effective strategy and key parameters to control cholera epidemics. Moreover, dynamically consistent discrete counterparts model is constructed to validate most of the continuous model's dynamics, as other standard methods failed.

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