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# Optimal Control Applied to a Visceral Leishmaniasis Model

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# **Optimal control applied to a Visceral Leishmaniasis Model**

by

**Buddhi Pantha**

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In this talk, I will present a deterministic model for transmission dynamics of Visceral Leishmaniasis in humans and canine reservoirs. Leishmaniasis is a vector borne disease caused by a protozoan parasite and transmitted by a bite of an infected sandflies. The value of reproduction number will be presented. The results from sensitivity analysis to determine the most impacted parameter will be used to identify the better intervention strategies. Three time dependent controls: personal protection, insecticide spraying and culling of the infected reservoirs are implemented and we present optimal control analysis. Some simulation results for the model will be presented.