

158 - A MODEL TO PREDICT THE OCCURRENCE OF SEVERE LEPTOSPIROSIS IN THE URBAN SETTING.

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Objective: Urban epidemics of leptospirosis occur annually in Brazil during periods of seasonal rainfall. The study aim was to develop a model of leptospirosis incidence to investigate the timing of exposure and the incubation period.

Methods: The analysis included 263 weeks of surveillance for severe leptospirosis in Salvador/BA between 1997 and 2001, during which 1,120 cases were identified. Poisson regression was used to investigate the time interval between weekly rainfall, temperature, humidity and counts of leptospirosis cases.

Results: The number of leptospirosis cases with onset of symptoms was most strongly correlated with rainfall 8-9 days earlier for male cases and 9-12 days earlier for female cases. Variables for season, rainfall, humidity and maximum temperatures in the previous three weeks were added to the model to predict the number of cases with onset per week. The best model had an R^2 of 0.72, with 83% sensitivity and 81% specificity for predicting weeks with 7 or more cases.

Conclusion: The model suggests that the incubation period is 8-12 days, indicating a potential for post-exposure interventions at the ambulatory or community level. Findings are consistent with maximum exposure during peak rainfall events; identification of high-risk activities during these can inform prevention strategies.