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Comparative Analysis of Machine Learning Models for the Precision of Dengue Severity Prediction

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The mosquito-borne disease dengue virus has been recognized as a major public health disease across many Asian countries including Sri Lanka. With the increasing occurrence of dengue, it becomes essential to have precise prediction models to guide preventative treatments and efficiently allocate resources. Leveraging age-related aspects and epidemiological data as the primary focus, this study explores the potential benefits of machine learning algorithms for determining dengue prevalence. The analysis approach involves the assessment of three models: Logistic Regression, Decision Tree, and Random Forest. The study analysed a comprehensive data set including patient information and categorization of dengue severity. This model offers essential insights into important factors that might predict the severity of dengue, enabling the implementation of effective methods of management. The study seeks to enhance dengue prevention initiatives and patient outcomes, especially in vulnerable groups in Sri Lanka, by emphasizing the significance of machine learning in developing effective public health interventions.

Keywords: *Dengue Severity prediction, machine learning, logistic regression, random forest, decision tree , Dengue fever, Sri Lanka*