

ABSTRACT

The BPJS Health claim process in hospitals still faces various challenges, ranging from administrative errors to delays in submission, which impact service efficiency. This problem is further exacerbated by the manual and unintegrated recording of patients' medical data. To address this issue, this study proposes a web-based medical record automation system integrated with machine learning technology. The system is designed to assist in the classification of medical diagnoses and procedures using ICD-9 and ICD-10 codes, as well as to automatically predict INA-CBG codes and their corresponding tariffs. The dataset used consists of preprocessed hospital medical records and claim data. The system also integrates an autocomplete feature for searching diagnosis codes (ICD-10) and procedure codes (ICD-9) to improve user convenience. The classification model employs the Support Vector Machine (SVM) algorithm trained on standardized diagnosis and procedure data, while tariff prediction is performed using the Random Forest regression model. The system achieved a classification accuracy of 88,68% and a coefficient of determination (R^2) of 0,8547 for tariff prediction. User satisfaction evaluation, conducted through questionnaires with 26 respondents, also indicated improvements in the speed and accuracy of the claim process. This system has the potential to serve as a secure and flexible digital solution for BPJS claim verification and estimation, while supporting the efficient digital transformation of healthcare services.

Keyword: BPJS Claim, Electronic Medical Records, ICD-9, ICD-10, INA-CBG, Machine Learning, Support Vector Machine, Random Forest.