

ABSTRACT

Non-communicable diseases, one of which is stroke, result in disability and even death for the sufferer. The Indonesian government has established the Social Security Agency for Health (BPJS Kesehatan) to ensure equitable healthcare services for its citizens, including stroke treatment. In BPJS Kesehatan there are services, namely FKTP and FKRTL. However, BPJS Kesehatan has several obstacles, such as uneven distribution of health services, long treatment processes, less transparent health service processes, and uncertain treatment sequences because the health service process changes over time. So, it is important to know the variability of clinical pathways, activity sequences, and delays to improve the quality of health services. Therefore, this study aims to analyze the flow of stroke treatment and provide recommendations for improving stroke treatment procedures in the BPJS Kesehatan dataset through a process mining approach. This research use Process Mining Project Methodology (PM²) as a theoretical framework. The methodology consists of six stages: planning, extraction, data processing, mining & analysis, evaluation, and process improvement & support. This study utilizes the Inductive Miner–Infrequent algorithm and compares it with the standard Inductive Miner. The implementation was carried out using the ProM tools software, which provides plugins and functionalities to visualize and analyze business processes through Petri net models. Petri nets are used to model the process flow, offering a clear representation of the nodes involved in stroke patient care pathways. Balanced trace fitness and precision results were obtained using a threshold of 0.4, where the trace fitness value was 0.8566, precision 0.8728, generalization 0.9647, and simplicity 0.6296. On the other hand, the values generated by Inductive Miner without thresholding showed overfitting to the event log, with very low precision. This indicates that the model captures all behaviors but also allows for excessive behaviors that are not observed, making it less suitable for precise process representation.

Keywords: stroke, Process Mining, Petri net