Sistem Deteksi Dini Tuberkulosis Paru berdasarkan Rekam Medis Pasien dengan Metode Algoritma C4.5. Early Detection System of Pulmonary Tuberculosis based on Patient Medical Records with C4.5 Algorithm Method. Mudafiq Riyan Pratama, S.Kom., M.Kom. (Pembimbing)

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ABSTRACT

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis. Tuberculosis can attack various organs in the body, one of which is the lungs, so it is called pulmonary tuberculosis. Jember Regency is the second largest contributor to tuberculosis cases in East Java Province, with the number of cases reached by the prevention programme from health service facilities only 54.4% in 2021. This study aims to build a system for early detection of pulmonary tuberculosis to help increase the number of tuberculosis cases found in the community. This system is built on a website using the Waterfall system development method and the C4.5 Algorithm classification method. The stages in this research include making classification rules using RapidMiner, then continued with the stages of the Waterfall method which includes the stages of communication, planning, modelling, and construction. The dataset used to compile classification rules is taken from patient medical records from Citra Husada Hospital as much as 140 data. The ratio of training data and testing data used to create classification rules is 70:30 or 98 training data and 42 testing data. Selection of testing data using stratified sampling technique. The resulting classification rules were 26 rules which were then used for system development. The designed system was tested for performance by testing 42 rows of testing data resulting in an accuracy value of 78.57%, precision 80%, and recall 88.89%.

Keywords: Pulmonary Tuberculosis, Early Detection, Classification, C4.5 Algorithm, Medical Records