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SURVEY ARTICLE

Survey on Clinical Decision Support System for Diagnosing Heart Disease

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Abstract— Ischemic Heart Disease is a disease which is difficult to diagnose and is very commonly identified only during the mortality of an individual. The World Health Organization (WHO)[12] statistical report state that more than 70 per cent of coronary deaths occur with subjects older than 70 years in North America and Western Europe. As per WHO reports in India and other developing countries 70 per cent deaths occur in subjects less than 70 years of age. Coronary Heart Disease (CHD) is an epidemic in India. A retrospective data set that included 1000 clinical cases is taken for the work. 88 sets were discarded during preprocessing. Tests were run on 912 cases using weka classifiers[5] available in weka 3.7.0. Out of 113 classifiers, 16 classifiers are identified to be the best based on different parameters sensitivity, specificity, accuracy, F-measure, kappa statistic, correctly classified cases, time taken to run the model and ROC curve. The diagnoses made by Clinical decision Support System(CDSS)[1][6][9] were compared with those made by physicians during patient consultations. The major goal of this paper is to build an expert system for diagnosing the presence of Ischemic Heart Disease with an integrated automated classifier using Artificial Intelligence techniques.

Keywords— Artificial Intelligence Techniques; Clinical Decision Support System (CDSS); Ischemic Heart Disease; Kappa Statistics; Sensitivity; Specificity

Full Text: <http://www.ijcsmc.com/docs/papers/February2014/V3I2201407.pdf>