APPLYING NEURAL NETWORKS TO HEALTH CARE QUALITY PARAMETERS

Sonja Novak[1], Miloš Milovančević[2]

For the purposes of monitoring and assessing the quality of care and treatment offered to patients and providing support for the activities related to health care, a quantitative indicator known as "indicator of quality in health care" is used. This study looked at the accuracy of forecasting case fatality rates using six distinct factors. Researching the relationship between the aforementioned factors (Death rate (percent) within 48 hours of admission, Surgery case fatality rate, The average length of hospital stay, The average number of pre-operative days, The average number of surgical procedures (anesthesia), The average number of nurses per occupied medical ward bed) and the prediction of the case fatality rate was the primary objective. Predictions of the case fatality rate will be made with the help of the Extreme Learning Machine (ELM) that will be built and utilized in the course of the research. Results from an ELM, a genetic programming (GP), and an artificial neural network (ANN) are contrasted and discussed. The accuracy of the computer models was assessed by comparing their predictions to empirical data and using a number of statistical measures. The results of simulations show that ELM may be used effectively in situations where the prediction of case fatality rates is required.