

**ARTIFICIAL NEURAL NETWORK IN PREDICTION OF INFECTIOUS DISEASE**Atefeh sedighnia¹, Sharareh R. Niakan Kalhori²

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ABSTRACT

Introduction: In recent years, artificial neural networks have won numerous contests in pattern recognition and machine learning. Infectious disease are important public health problems around the world. This paper presents implemented artificial neural networks (ANN) that are used for predicting infectious disease.

Methods: We searched the combination of predict, prediction, predicting, forecast, forecasting with artificial neural network (ANN) and tuberculosis, respiratory, infection, infectious as a title in Scopus and Pubmed. After excluding similar articles, we choose the paper that predicts infectious diseases in humans.

Results: The articles are from 1999 to 2016. The range of sensitivity is 56%–100% and specificity is 72%–100%. Researchers achieved maximum sensitivity in predicting tuberculosis-multiple strain and maximum specificity in active pulmonary tuberculosis. In two articles that did not report these statistical indexes, their R2 are 0.8590–0.9125.

Conclusion: Development of artificial neural network (ANN) models, as predictors for infectious diseases, have created a great change in infectious disease predictions.

KEYWORDS: Artificial neural network, Prediction, Infectious disease