

ABSTRACT

The problem faced by the Mentawai Islands Regional Hospital is overstock of 83% of the total demand for Medical Consumables. There is a large gap between supplies and needs, so that it can cause high total inventory costs, accumulation of Consumable Medical Materials, excessive amounts of purchases that can cause damage to Consumable Medical Material supplies because they have an expiration time of one year from purchase. The total cost of inventory of Medical Consumables in the initial condition is Rp. 454,033,488.11, and the amount, of Medical Consumables with an expired percentage exceeds one percent of the standard provisions, which is 15% of the total inventory, with expired Medical Consumables can cause material losses of Rp. 45,000,000. Based on these problems, planning for the development of forecasting and inventory models using the artificial neural network (JST) and continuous review (r, Q) methods is needed in order to determine demand forecasting estimates, order quantity and reorder points so as to reduce the number of expired Medical Materials and total inventory costs. The 23-unit Consumable Medical Materials will be carried out demand forecasting using an artificial neural network model, with input variables namely actual demand for Consumable Medical Materials for 12 months in 2022, initial inventory of Consumable Medical Materials in 2022, remaining inventory of Consumable Medical Materials at the end of the month, total Consumable Medical Materials in 2022 using MATLAB. Furthermore, the results of forecasting future demand are used as input to calculate the order quantity and reorder point, the results of (r, Q) will be used to calculate the total cost of consumable medical supplies. The results of the development of inventory using the input of forecasting results compared to those without forecasting, with forecasting the total inventory cost of Rp. 312,466,414 a savings of 31%, without forecasting the total demand for inventory costs of Rp321,484,476.54 a savings of 29%.

Keyword: overstock, order quantity, reorder point, Continuous review, artificial neural network.