Fitting the Length of Stay Data: Case Study in Intensive Care Unit at Sultan Qaboos University Hospital in Oman

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Abstract:

The length of stay (LOS) of patients is an important tool to help and assist the managers of hospitals. The distribution of LOS data are, however, right skewed. Hence, appropriate models are needed in order to fit such data properly. The aim of this study was to investigate LOS data, collected from the Intensive care unit (ICU) at Sultan Qaboos University Hospital. To that end, the data were fitted by four competing models; Weibull, Gamma,, Lognormal and Loglogistic. Unknown parameters were estimated using the maximum likelihood method. The empirical study revealed that Gamma model outperformed the other competitors and therefore, it has been used as a predictive model.

Keywords:

Length of stay, Intensive care unit, skewed distributions, goodness of fit statistics, predictive model.