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The log-logistic distribution provides a useful alternative to the Weibull distribution for the parametric modeling of survival data where the hazard rate is non-monotonic. In this work, we present an innovative alternative nonlinear hybrid model of survival data. The presented approach is motivated by state and parameter estimation of time-to-event processes in biological, chemical, engineering, epidemiological, medical, military, multiple-markets and social dynamic processes under the influence of discrete-time intervention processes. The approach tested in the context of survival data set. (Received September 14, 2016)