

1116-VP-1706 **Netra Khanal*** (nkhanal@ut.edu), 401 W. Kennedy Blvd, Tampa, FL 33606. *Bayesian age-stratified joinpoint regression model: an application to lung and brain cancer mortality.*

Joinpoint regression model identifies significant changes in the trends of the incidence, mortality, and survival of a specific disease in a given population. The purpose of the present study is to develop an age-stratified Bayesian joinpoint regression model to describe mortality trend assuming that the observed counts are probabilistically characterized by the Poisson distribution. The proposed model is based on Bayesian model selection criteria with the smallest number of joinpoints that are sufficient to explain the Annual Percentage Change. The prior probability distributions are chosen in such a way that they are automatically derived from the model index contained in the model space. The proposed model and methodology estimates the age-adjusted mortality rates in different epidemiological studies to compare the trends by accounting the confounding effects of age. In developing the subject methods, we use the cancer mortality counts of adult lung and bronchus cancer, and brain and other Central Nervous System cancer patients obtained from the Surveillance Epidemiology and End Results data base of the National Cancer Institute. (Received September 21, 2015)