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**Lin Han** (linhan@ic.sunysb.edu) and **James R. Stinecipher\***  
(jstinecipher@mail.fresnostate.edu). *Survival Analysis on Patients with Chronic Hepatitis B*.

Chronic hepatitis B is a major health problem that affects over 350 million people worldwide. In this research, we model the onset of liver cancer in Taiwanese patients with hepatitis B using the REVEAL-HBV dataset. We construct proportional hazards models considering both time-independent and time-dependent covariates and use stepwise selection to exclude insignificant risk factors. We assess the models using residual analyses and likelihood score comparisons, namely the Akaike Information Criterion (AIC). We demonstrate that a proportional hazards model which considers liver cirrhosis as a time-dependent covariate is more efficient than other time-independent models. We also show that the development of liver cirrhosis has the highest hazard ratio among other covariates in the model. We conclude that early diagnosis and treatment of liver cirrhosis in hepatitis B patients can have a major effect in preventing the onset of liver cancer. (Received August 06, 2012)