Exercises 7

1. Write a statistical analysis plan for "Third Party Motor Insurance in Sweden" data http://www.statsci.org/data/general/motorins.html. Try to use the style of scientific articles.

2. Carry out the analysis according to your plan. Revise the plan if needed.

3. Analyze the SUPPORT data http://biostat.mc.vanderbilt.edu/twiki/pub/Main/DataSets/support.sav (See the labels of the variables in the dataset and the description http://biostat.mc.vanderbilt.edu/twiki/bin/view/Main/SupportDesc). Use the covariates age and sex. Fit three models: a model where the response is the vital status at the end of the follow-up, a Cox model where the response is the time of death and a Weibull regression model where the response is the time of death. Interpret the results and compare the regression coefficients from the models. (Useful R commands: cph from the package Design or coxph from the package survival, and weibreg from the package eha.)

4. Analyze the SUPPORT data using the time of death as the response and age, serum creatinine and white blood cell count as covariates. It is known that serum creatinine and white blood cell count have non-monotonic nonlinear effect on the risk. Visualize the fitted model. (Useful R commands: rcs and lsp from the package Design or pspline from the package survival.)