Homework # 2

Biostatistics 210

DUE October 15, 2019 to Zara Izada by 10:30am

This assignment will give you practice using smoothing splines

Perform a secondary analysis of UNOS data on pediatric kidney transplants. You have data on 1 year survival on all transplants carried out between 1990 and 2002. Suppose the network put in place for guidelines for post-transplant treatment in the year 1996 and would like to assess whether there is evidence that the implementation of the guidelines has improved care and steadily increased the likelihood of 1 year survival.

1. DOWNLOAD

Download the dataset hw2.dta from the course website. The variables are

•died (1=died in first year, 0 = survived first year)

•txdate (date of transplant)

•year_cts (calendar year with fractions 2001.5 -= June 1, 2001)

•year (calendar year)

•age (age of child at transplant)

•txtype (1=cadaveric donor, 0 = living donor)

•prior1996 (1=for years 1990-1995, 0=for years 1996-2002)

2. ANALYSIS

Your colleague performed a logistic regression model with “dead” as the outcome using “prior1996” as a predictor. (Q1) Can you verify the association? (Q2) Given your colleague’s hypothesis, how would you expect the risk of death to change over the years? (Q3) Use smoothing splines to examine the shape of this relationship (Q4) Does the shape of the relationship change when you adjust for potential confounders like recipient age and living v. cadaveric tx (Q5) How does the spline analysis agree or disagree with the analysis which made year into the binary variable “prior1996”