

BIOST/EPI 537
Winter Quarter 2009
Dr. Heagerty

LEARNING OBJECTIVES
BIOST/EPI 537
SURVIVAL DATA ANALYSIS IN EPIDEMIOLOGY
WINTER 2009

Upon entering this course you are expected to have completed courses in introductory statistics or biostatistics, multiple regression, elementary categorical and censored survival data analysis, and multiple logistic regression analysis of data from epidemiologic case-control studies. You should know how to fit multiple linear and logistic regression models, and how to perform hypothesis tests about regression coefficients. You should be familiar with case-control, cross-sectional, and cohort study designs. You should have been exposed to simple statistical methods for analyzing censored survival data, including the Kaplan-Meier estimator and the log-rank test.

After completing this course the student can ordinarily expect to:

1. Estimate survival curves using the Kaplan-Meier estimator.
2. Estimate the (grouped or smoothed) instantaneous mortality or hazard rate.
3. Compare two or more survival curves using a log-rank or related test.
4. Fit appropriate Cox regression models to continuous time data from epidemiologic cohort studies using STATA, and evaluate the fit of these models.
5. Interpret regression coefficients from Cox regression models fit to continuous-time data, and test hypotheses about them.
6. Use time-dependent covariates in the Cox model and interpret the coefficients.
7. Fit appropriate Poisson regression models to grouped data from epidemiologic cohort studies using STATA, and evaluate the fit of these models.
8. Interpret regression coefficients from Poisson regression models fit to grouped data, and test hypotheses about them.