CTSC 5640
Logistic Regression

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Credits: 1
Quarter: Winter
Prerequisites: CTSC 5600 and 5610

Overview
Logistic regression is often used as an analytic tool for medical studies with binary endpoints. In this course, we will identify appropriate occasions to use logistic regression and describe how logistic regression may be used to estimate the magnitude of association for a predictor versus a binary outcome variable using an odds ratio. We will also interpret odds ratios for binary, categorical, and continuous predictor variables, describe how the odds ratio may be influenced by confounding variables and/or interactions among variables, and how logistic regression may be used to adjust for the presence of confounders and to test for the presence of interaction. We will also explore the assessment of statistical significance, model building, and model assessment strategies in the presence of several risk variables, and apply the use of logistic regression in score development and validation with the associated receiver-operator characteristic (ROC) curve. Students will have the opportunity to apply JMP software in a computer lab to conduct analysis.

Objectives
- To utilize the JMP statistical software to perform logistic regression
- To select appropriate models depending on the research questions

Evaluation
Students will be evaluated on two homework assignments, two computer lab worksheets, and a final open-book exam.

Students are expected to spend two to four hours of time on this 1-credit course each week.

Additional online modules related to this topic are available on the Continuous Professional Development website.

For specific dates and times this course is provided, please see the quarterly detailed course schedule.