Division of Biostatistics, DSI
Medical College of Wisconsin presents

Regression Analysis for Restricted Mean Duration of Response

By: Michael Martens, PhD

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Tuesday, March 4th | 3:30pm-4:30pm
Location: M2050/2070

Treatment studies aim to assess the efficacy of therapies in alleviating an active disease. Several facets of disease response are often examined, including the proportion of patients who respond to treatment, the time until a treatment response occurs, and the duration of response among patients who achieve a response. A novel endpoint that integrates all information treatment's effectiveness in reducing disease burden is the restricted mean duration of response (RMDOR), defined as the mean duration of time a patient spends in response within a specified time frame. Existing literature has focused only on univariable analyses of RMDOR in the clinical trial setting. But, other influential covariates may be at play that require covariate adjustment to properly control for their impact. Also, covariate-dependent censoring may arise in observational studies, requiring appropriate techniques to attain unbiased estimates. To address these needs, we propose a semiparametric regression model for analyzing RMDOR in both independent and covariate-dependent censoring settings. Large sample theory and simulation studies support the accuracy of the proposed models for evaluating predictors of RMDOR. The methods are demonstrated through the reanalysis of an observational study of immune suppression discontinuation following blood and marrow transplantation for blood cancers.

Michael Martens, PhD

Biography: Michael is an Assistant Professor in the Division of Biostatistics at MCW. His research interests include sequential and adaptive designs for clinical trials, complex time to event data analysis, sample size and power determination for nonlinear regression models, and nonparametric Bayesian methods. He works as a Statistical Director for the Blood and Marrow Transplant Clinical Trials Network and the Center for International Blood and Marrow Transplant Research. He also serves as Assistant Director of the Biostatistics Shared Resource for MCW's Cancer Center. He completed his Biostatistics PhD at MCW in 2017.

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