Inference for accelerated failure time models for clustered time to event data

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Abstract

This talk deals with analysis of clustered data where the sample units are not independent. In the first part of the talk, we introduce the general phenomenon of informative or non-ignorable cluster size and demonstrate that applying standard methods such as generalized estimating equations which are not specifically designed for this issue may lead to biased inference. We show by numerous examples, both parametric and nonparametric, how to construct inferential procedures that are immured to informative cluster size. In the second half of the talk we examine the accelerated failure time regression model for survival data in detail. In keeping with the theme of this conference, we show that this issue may arise even with linear models (with transformed response) with clustered data. We also discuss how to handle right censoring in this context.