

On the Equivalence of Some Medical Cost Estimators with Censored Data

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In clinical trials comparing different treatments and in health economics and outcomes research, medical costs are frequently analyzed to evaluate the economical impacts of new treatment options and economic values of health care utilization. Since Lin et al.'s first finding in the problem of applying the survival analysis techniques to the cost data, many new methods have been proposed. In this talk, we establish analytic relationships among several widely adopted medical cost estimators that are seemingly different. Specifically, we report the equivalence among various estimators that were introduced by Lin et al., Bang and Tsiatis, and Zhao and Tian. Lin's estimators are formerly known to be asymptotically unbiased in some discrete censoring situations and biased otherwise, whereas all other estimators discussed here are consistent for the expected medical cost. Thus, we identify conditions under which these estimators become identical and, consequently, the biased estimators achieve consistency.

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