
Testing for Sufficient Followup in Censored Survival Data

Ross Maller^{*1}, Sidney Resnick², and Soudabeh Shemehsavar³

¹Australian National University – Australia

²Cornell University – United States

³University of Tehran – Iran

Abstract

The existence of immune or cured individuals in a population and whether there is sufficient follow-up in a sample of censored observations on their lifetimes to be confident of their presence are questions of major importance in medical survival analysis. So far only a few candidates have been put forward as possible test statistics for the existence of sufficient follow-up in a sample. Here we discuss properties of one such statistic, Q_n . Assuming an iid censoring model, we obtain a formula for the finite sample distribution of Q_n which we use to find its asymptotic distribution under scenarios of sufficient or insufficient followup. A new and very useful finding is that the asymptotic distribution is parameter free in the null case when follow-up is insufficient. We illustrate with application to a glioma cancer data set.

^{*}Speaker