

# New statistical technique shows more informative picture of survival

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Researchers have developed a new method for presenting clinical trial survival data that includes data from all trial participants unlike the standard method, according to a commentary published online January 8 in the *Journal of the National Cancer Institute*.

In clinical studies, “time-to-event” data represents the time from the start of a study to an event, such as disease recurrence or death. But often many participants in a study do not experience an event before the study is over, so their survival time is not known. To overcome this data gap, the standard statistical method for presenting time-to-event results, known as the Kaplan-Meier survival curve, involves plotting the proportion of individuals surviving without an event over the period of the study. Using this method, researchers get an estimate of the median survival times. However, these plots also tend to make differences in survival between groups visually appear larger than they actually are.

To address this problem, Patrick Royston, D.Sc., of the Medical Research Council Clinical Trials Unit in London and colleagues developed a new method for plotting survival as a bar graph and tested it on data from a kidney cancer trial. In cases where a participant had not experienced an event, the researchers estimated that person's survival by using their prognosis and length of time in the trial.

Their plots show considerable overlap in survival times between treatment and control groups in the kidney cancer trial, whereas the Kaplan–Meier plots of the same data showed a distinct separation

between the two groups. The authors argue that the new method gives a more realistic representation of what are usually small differences between groups.

“The method is surprisingly informative and, we hope, will help physicians and patients to understand more fully the results of clinical trials and the implications of prognostic assessments,” the authors write.

In an accompanying editorial, Janet Wittes, Ph.D., of Statistics Collaborative in Washington, D.C., discusses the challenges in interpreting time-to-events graphs, how this new method addresses these problems, and under what circumstances this method should be used.

“Those of us who work with time-to-event data should now attempt to extend their method to...settings other than survival,” Wittes writes.

Source: Journal of the National Cancer Institute

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