

# Joint modeling of quality of life and survival data in palliative care studies

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**Abstract:** Palliative medicine is an interdisciplinary specialty focusing on improving quality of life (QOL) for patients with serious illness and their families. Palliative care programs are widely available or under development at US hospitals. In palliative care studies, often longitudinal QOL and survival data are highly correlated which, in the face of censoring, makes it challenging to properly analyze and interpret terminal QOL trend. Informative dropout in the study add another level of complication of the problem. To address these issues, we propose a novel statistical approach to jointly model the terminal trend of QOL and survival data accounting for informative dropout. We assess the model through simulation and application to establish a novel modeling approach that could be applied in future palliative care treatment research trials.