

Title: Challenges and opportunities of competing risks for causal inference

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Abstract: This study is motivated by the research on drug repurposing for Alzheimer's Disease (AD). Any research on AD has to account for competing death that might preclude the onset of AD. We consider a problem of estimation of causal effects of a point intervention from observational data with confounding. While the guidelines for selection of confounders in a non-competing risks framework are well established, the literature on selection of confounders in a competing risks setting is extremely sparse - there is only one paper that addresses this problem. We employ specifics of competing risks and explore ways to adjust for confounding, which, as our simulations show, can be more efficient than the method obviously extended from a non-competing risks setting. Our results provide the insight and guidelines for practical causal inference applications where competing events cannot be ignored.