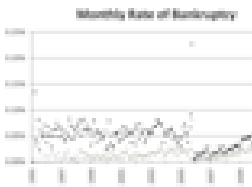


Surviving cancer in times of financial distress

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Monthly rate of bankruptcies for cancer patients and an age- and gender-matched group without cancer.

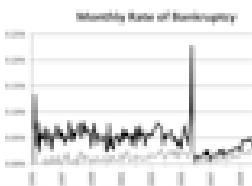


Image provided by Dr. Scott Ramsey.

Among the millions of individuals diagnosed with cancer each year, out-of-pocket expenditures during cancer treatment are putting many families into severe financial distress. This can lead to refusal of treatment or non-adherence to recommended treatments. While previous studies have shown a relationship between cancer diagnosis and financial distress, few have assessed whether financial hardship leads to poorer outcomes among cancer patients. To address this question, Dr. Scott Ramsey, Dr. Aastha Bansal, Catherine Fedorenko, Dr. Polly Newcomb, and colleagues in the Public Health Sciences Division at Fred Hutch, investigated the association between bankruptcy and mortality for patients with cancer. The results from their study were recently published in the *Journal of Clinical Oncology*.

The study included individuals with cancers recorded in the Western Washington Cancer Surveillance System. Using a novel linkage of the cancer registry and federal bankruptcy records, the investigators included verified medical, financial, and mortality information in their analysis.

Between 1995 and 2009, 231,596 persons were diagnosed with cancer. Of these, 4,728 filed for bankruptcy. Bankrupt patients were more likely to be younger, female, and non-white, to have local- or regional- stage disease at diagnosis, and have received treatment. To account for differences in these demographic and clinical factors between patients who did vs. did not file for bankruptcy, the investigators used propensity score matching and then fit a Cox proportional hazards model, a statistical method to examine survival, to assess the relationship between bankruptcy filing and cancer survival.

After matching, 3,841 cancer patients remained in each group (bankruptcy vs. no bankruptcy). In the matched sample, the mean age and household income were 53 years and \$49,000, respectively and the majority of individuals were white (86%), married (60%), men (54%), from urban areas (91%), and had local- or regional-stage disease at diagnosis (84%). For all cancers, financial distress requiring bankruptcy after cancer diagnosis appeared to be a risk factor for mortality: the adjusted hazard ratio for mortality among cancer patients who filed for bankruptcy vs. those who did not was 1.79 (95% CI: 1.64-1.96). In addition, hazard ratios varied by cancer type, with colorectal, prostate, and thyroid cancers presenting the highest hazard ratios. For colorectal cancer patients (the group with the highest hazard ratio), the risk of mortality was 2.5 times as high among patients who filed compared with those who did not.

These results may have important policy implications. Lead author Dr. Ramsey notes, "Researchers have understood that serious illness such as cancer is a common cause of financial distress and bankruptcy, but it has not been known whether financial distress influences outcomes. We show that there is a strong, consistent relationship, suggesting that bankruptcy can be a mortal event for cancer patients. Our results highlight the need for future studies that identify causal factors linking bankruptcy and excess mortality for patients with cancer. Understanding these factors will help us design interventions to reduce the risk of bankruptcy and the connection between financial distress and reduced survival."

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Citation:

[Ramsey SD, Bansal A, Fedorenko CR, Blough DK, Overstreet KA, Shankaran V, Newcomb P.](#) 2016. Financial Insolvency as a Risk Factor for Early Mortality Among Patients With Cancer. *J Clin Oncol.* 34(9):980-6. Doi: 10.1200/JCO.2015.64.6620