

Data Science in Cancer Research: Understanding Cancer

Patients' Survival and Survivorship

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Abstract

In this talk will demonstrate data science examples of health care big data utilization to understand cancer patients' survival and health. Early detection through the national cancer screening program and improvements in treatment resulted in better chances of survival. Thus, understanding both cancer and non-cancer mortality patterns experienced by patients is critical. First, I will address the estimation of competing risks survival probabilities based on the population-based cancer registry data and show how the results can inform cancer survivorship policy. Further, I will elaborate on statistical aspects of estimating non-cancer mortality patterns and comorbidity analysis from the national mortality database and the Korean National Health Insurance Claims big data. The final example will be the utilization of electronic health records from a clinical research data warehouse (CRDW) to estimate and predict the prognosis of cancer patients. I will close this talk with a discussion of opportunities and challenges in this area.