

## **Survival of Colorectal Cancer Patients in Urban and Rural Areas in the State of Kentucky**

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**Background:** Nearly a quarter of Americans live in rural areas, which consistently report higher cancer mortality rates than residents of urban and suburban areas. The worse outcome for cancer patients in these areas has been attributed to several factors, including compliance with treatment. In Kentucky a large proportion of the population lives in rural areas with barriers to treatment such as low income, distance to health care, and lack of public transportation; all factors associated with compliance with cancer treatment. We compared the overall survival of patients diagnosed with colorectal cancer in urban and rural areas in the state of Kentucky.

**Methods:** Using the Kentucky Cancer registry, we obtained the number of patients diagnosed with colorectal cancer by stage and place of residence (rural or urban) between 2008 and 2012. The urban and rural classifications were based on Beale codes. The 5 year overall survival was compared by rural/urban place of residence and gender by stage using a test for difference of proportions (Z).

**Results:** For the years 2008-2012, a total of 1458 rural patients were diagnosed with stage I colorectal cancer, 1315 with stage II, 1283 patients with stage III, and 1072 diagnosed with stage IV. In the urban areas of the state, a total of 1509 patients were diagnosed with stage I colorectal cancer, 1612 patients with stage II, 1586 were diagnosed with stage III, and 1248 were diagnosed with stage IV. The 5 year overall survival for patients in rural versus urban areas were as follows: stage I (91% versus 92%  $p=.35$ ); stage II (84.4% versus 86.5%  $p<.05$ ); stage III (73% versus 75%  $p=.33$ ); and stage IV (18.6% versus 21%  $p=.94$ ). There were no significance differences in survival by gender.

**Conclusion:** Among patients diagnosed with colorectal cancer of all stages in the state of Kentucky there was no difference in survival between urban and rural areas except for patients with stage II. Additional research is needed to improve understanding of factors associated with the differential in survival for patients with stage II colorectal cancer.