Category: Data Analysis – Work in Progress – Faculty

End of Life Cancer Care Quality: A Key Metric for Analyzing and Assessing Cancer Burden

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1. Background
Catchment area data analyses often focus primarily on describing cancer incidence and mortality. However, to fully capture the cancer burden, data need to be collected that characterize the entire cancer care continuum. In particular, there is a known gap in analyzing and understanding the quality of end-of-life (EOL) care among catchment areas.

2. Goals
Our goal was to 1) examine patterns in EOL care overall and over time and 2) describe the extent to which there were disparities across ages at death, geography, race and ethnicity, insurance, and sex in the receipt of inappropriate EOL care within our catchment area.

3. Solutions and Methods
Data were obtained from the University of North Carolina's Cancer Information and Population Health Resource, which includes statewide registry data linked to public and private health insurance claims.

We evaluated EOL care for adult decedents who were diagnosed with cancer and had insurance coverage at the time of death between February 1, 2003, and December 31, 2020 (n=161,038).

Inappropriate EOL care included hospice use in the last 30 days of life as well as six measures of inappropriate EOL care—intravenous chemotherapy, hospital admission, ICU admission, and >1 emergency department (ED) visit in the last 30 days of life, hospice initiation in the last 3 days of life, and in-hospital death.

4. Outcomes
The most frequently observed inappropriate EOL care was hospital admission in the last 30 days of life (52%). From 2003 to 2019 we observed increases in 4 four of the 6 inappropriate EOL care measures over time, with hospice initiation in the last 3 days increasing from 7 percent to 14 percent and >1 ED visit increasing from 10 percent to 21 percent. At the same time, hospice use in the last 30 days increased from 40 percent to 62 percent. Across cancer types, decedents with myeloma had the worst outcomes across 6 inappropriate EOL care measures, including more than 60 percent hospitalized in their last 30 days. Age-based disparities were prevalent, with only 33 percent of young decedents (18-39 years old at death) receiving hospice care within 30 days, compared to 60 percent of 65+ decedents. However, we also found that decedents age 65+ were more likely to have an ICU admission in the last 30 days of life compared to younger decedents (13% vs. 19%). Interestingly, Medicaid-insured decedents were less likely to receive inappropriate EOL care compared to privately and Medicare-insured decedents. However, Medicaid decedents also received hospice care within 30 days of death less frequently than Medicare decedents (31% vs. 62%). While there were few disparities by rurality, county-level analyses demonstrated that inappropriate EOL care was most frequently observed in Eastern North Carolina, particularly coastal counties.

5. Lessons Learned and Future Directions

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Our analysis highlights that, overall, inappropriate EOL care is increasing within our catchment area. Future efforts need to focus on identifying opportunities to optimize high-quality, context- and age-appropriate EOL care for older and younger patients with cancer and those living in Eastern North Carolina. Finally, standardized processes and methods should be established for collecting EOL care quality metrics as they are important for assessing cancer burden within a catchment area.