In end-of-life cancer care, geography may be destiny

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When it comes to how much end-of-life care a patient with cancer receives, geography may, indeed, be destiny, according to new research led by Harvard Medical School that found striking differences in terminal care across different parts of the country.

The findings, published in the July issue of *Health Affairs*, reveal that in some areas, people with end-stage lung and colorectal cancers received more intensive care and racked up twice as much in spending in the last month of life.

Notably, the study found, the variations did not stem from patient beliefs and preferences. Instead, they were fueled by differences in physicians' beliefs about end-of-life care and practice style, as well as by differences in the availability of health care services by region.

The findings, the investigators said, are particularly concerning in light of the growing body of research that shows additional care at the end of life does not contribute to better outcomes in cancer.

"Numerous studies have shown that greater spending and more care at the end of life do not contribute to better outcomes," said study author Nancy Keating, professor of health care policy and medicine at Harvard Medical School and a physician at Brigham and Women's Hospital. "Given that more care and greater spending also do not stem from patient preferences, much of these additional services can be considered wasteful or even harmful."

Physicians in areas with higher spending reported feeling less prepared and less knowledgeable in their care of patients with terminal cancer. They also reported being less likely to seek hospice care for themselves if they were to become terminally ill with cancer, the research showed. Patient beliefs did not contribute to spending differences, the researchers found.

These findings, the researchers said, underscore the need for better physician education and training that boost doctors' comfort level in both addressing end-of-life issues and delivering appropriate levels of care.

"What we really need are interventions that help physicians feel more comfortable taking care of patients at the end of life, along with better training about the lack of efficacy and potential harms of some intensive treatments for patients with advanced cancer," Keating said.

Allocating resources strategically to ensure that enough services are available to meet patient needs without driving wasteful spending is also important, the researchers said.

To conduct their analysis, the researchers used data from the Cancer Care Outcomes Research and Surveillance Consortium (CanCORS), combining information about social and demographic factors, patient clinical characteristics, and survey responses about patient and physician beliefs. The study sample included more than 1,100 patients, 65 years of age and older diagnosed with end-stage lung and colon cancer between 2003 and 2005 who died before 2013.

The average amount spent on end-of-life care during a patient's last month was slight more than $13,600. However, in some regions, it was more than $19,300, while it was just over $10,000 in other areas.

Compared with physicians in areas with lower spending, physicians in

higher spending regions reported being:

- Less prepared to treat symptoms at the end of life.
- Less knowledgeable discussing end-of-life treatment options.
- Less comfortable discussing do-not-resuscitate status.
- Less comfortable discussing hospice care.
- Less likely to enroll in hospice themselves should they be terminally ill with cancer.
- More likely to suggest chemotherapy for patients who were unlikely to benefit from the treatment due to poor health status.

The analysis also revealed that geographic areas with higher spending tended to have a greater concentration of physicians per capita, fewer primary care doctors and fewer hospices.

While the study did not specifically explore the origins of various physician practices and beliefs, the researchers say that region-specific treatment patterns in end-of-life care likely emerged from shared informal observations during training or over the course of careers, with colleagues mirroring the practices of doctors around them.

"Doctors learn from each other," Keating said. "If I train in a place where I see all of my colleagues doing lots of things when someone is sick, I may be more likely to try to do lots of things when I have patients who are sick, whereas if my colleagues tell their patients, 'The end is getting near, let's call in hospice,' I may be more likely to suggest hospice for my patients."

Keating noted that there are already efforts underway to help physicians avoid wasteful and potentially harmful treatments, such as the American Board of Internal Medicine Foundation's Choosing Wisely campaign to encourage physicians not to use chemotherapy to treat metastatic patients with poor performance status. The new study's findings suggest

that it is important to reinforce these efforts, Keating said.

Provided by Harvard Medical School