

The Rising “Time Toxicity” of Cancer Care

The increasing time burden reflects more intensive treatments as well as fragmented and uncoordinated health care delivery.

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The amount of time older cancer patients spend on treatment and care has increased in recent years, according to study results published in [JAMA Network Open](#). Between 2008 and 2019, Medicare beneficiaries with four common types of metastatic cancer had an average of 40 to 63 health care contact days during the year after their diagnosis.

Lead study author Arjun Gupta, MD, of City of Hope Cancer Center in Phoenix, [coined the term “time toxicity”](#) to describe the time commitments associated with cancer treatment—including tests, travel to appointments and dealing with insurance—arguing that it should be considered along with physical side effects and financial burdens.

While many people are willing to spend considerable time on treatment that extends their life or improves its quality, elderly patients with limited life expectancy and those with advanced cancer that can’t be cured should consider how much of their remaining days they wish to spend interacting with the health care system.

“This study’s results suggest that oncology teams should discuss expected contact days and related burdens when developing care goals and treatment plans with older adult patients,” according to the authors.

Gupta and colleagues assessed health care time burden and trends in the number of health care contact days among older people with metastatic cancer. Contact days were calculated as the sum of days receiving ambulatory care (for example, clinician visits, testing or imaging, treatment administration or outpatient procedures) and institutional care (including hospital stays, emergency department visits and time spent in a skilled nursing facility or inpatient hospice).

Using the Surveillance, Epidemiology and End Results-Medicare database, they identified nearly 59,000 traditional Medicare beneficiaries ages 66 and older who were diagnosed with late-stage cancer between January 2008 and February 2019 and survived a year or more after their diagnosis. Men and women were about equally represented, around 80% were white and more than half lived in large metropolitan areas. Metastatic lung cancer was most common (27,340

patients), followed by prostate cancer (11,739), colorectal cancer (10,232) and breast cancer (6,495). A majority received chemotherapy or radiation within the three months after their diagnosis.

During the first year after diagnosis, people with colorectal cancer had the highest mean number of health care contact days (62.9), followed by those with lung cancer (60.2), breast cancer (48.7) and prostate cancer (40.1). Looking at specific components of care, the largest number of contact days involved treatment (ranging from 15.5 days for prostate cancer to 26.1 for lung cancer), clinician visits (16.3 to 23.2 days) and tests (13.8 to 22.2 days).

Overall, the average number of health care contact days rose over the course of the study period, with the largest increase observed for breast cancer (from 44.9 to 57.6 days). Contact days increased by 28% for breast cancer, 23% for prostate cancer, 13% for lung cancer and 5% for colorectal cancer. While the number of days of institutional care remained relatively stable, the number of days with ambulatory care increased substantially from 2016 onward.

Furthermore, the researchers found that older patients who survived for at least a year spent 11% to 17% of their first year after diagnosis receiving health care outside the home. But all patients—regardless of survival time—spent 17% to 30% of their remaining days interacting with the health care system.

“The higher frequency of contact days among beneficiaries with shorter survival is critically relevant when making decisions regarding multiple lines of cancer-directed treatment because each line of treatment typically offers diminishing returns in terms of survival benefit but higher rates of contact days,” they wrote.

The increase in health care contact days could reflect treatment advances that may impose additional time burdens, the authors suggested, noting that the study captured “a time of intense clinical trial investigations, drug approvals and treatment uptake.” New treatments may require more administration time, monitoring and management of side effects, and the trend toward combination therapy can add to time commitments. Some new therapies are only modestly effective, however, so small gains in survival time may be largely eaten up by the treatment itself.

But fewer health care contact days is not necessarily good news. The researchers found that Latino patients and those residing in the South had fewer contact days, which could reflect structural, geographic or financial barriers, such as lack of reliable transportation or longer travel distances. Low-income beneficiaries also had more contact days, which could be due to worse health status and the need for more care, the authors noted.

Another potential explanation for the increasing time burden is that “ambulatory care is often fragmented and uncoordinated, maybe more so in recent years as cancer care becomes more complex and subspecialized,” they wrote. Prior research has identified missed opportunities to coordinate care, for example, by scheduling clinician visits and tests or imaging on the same day.

“These findings align with qualitative work we have done in which patients with advanced-stage cancer and their care partners say their entire life is consumed by health care,” [Gupta told Healio](#). “They are sometimes going in for labs on Monday and a scan on Tuesday. They see their oncologist on Wednesday and get an infusion on Thursday. This isn’t just a physical and logistical struggle. It is an emotional reminder of their illness every day.”

What’s more, contact with the health system is not the only source of time commitments for cancer patients.

In [a related study](#) published in the same journal, Gupta, lead investigator Rachel Vogel, PhD, of the University of Minnesota, and colleagues used a smartphone app to capture time demands of 60 people with metastatic breast cancer or advanced ovarian cancer.

The participants reported a mean of 4.2 cancer-related care contacts outside the home in a month, most often involving treatment, clinic visits or lab tests. Given that 14% of these episodes involved a wait time of more than an hour and the median travel time was 35 minutes, “the time spent traveling and waiting for care often exceeded time spent receiving care,” the researchers reported.

In addition, participants did at least one cancer-related task at home on 80% of study days. They spent a median of 209 minutes per week taking medications, scheduling appointments, handling medical bills, managing symptoms, monitoring their health status, seeking information about cancer and arranging help or transportation.

Together with traveling to, waiting for and receiving care outside the home, they spent a median of 400 minutes—or nearly seven hours—per week managing their cancer. Over a third of the participants said cancer-related tasks “disrupted daily activities, including self-care, chores, work or socializing, on more than half of their days,” the authors wrote.