End-of-life care patterns shift for patients with heart failure in both US and Canada

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Health care in the last six months of life has become progressively more expensive for patients with heart failure both among Medicare beneficiaries in the United States and older adults in Canada, with a high rate of hospitalizations in the final six months of life in both countries, according to two reports posted online today that will be published in the February 14 print issue of *Archives of Internal Medicine*. A third report finds that more men dying of prostate cancer are receiving hospice care, but that the timing of hospice referral remains poor.

Heart failure is a common cause of death in both the United States and Canada, according to background information in the articles. The condition is listed on one in eight death certificates in the United States, and the five-year death rate among those hospitalized with heart failure is about 70 percent. "Provision of high-quality health care at the end of life poses challenges for both health care providers and policy makers," the authors write. "End-of-life care has many dimensions, including patient preferences and values, health care provider practices and concerns about the appropriate use of resources. Although most patients prefer to die at home, many die in hospitals or nursing homes. The cost of health care at the end of life is also substantial. More than one-quarter of Medicare spending occurs in the last year of life, a figure that has remained stable for several decades."

In one article, Kathleen T. Unroe, M.D., M.H.A., of Duke Clinical Research Institute, Durham, N.C., and colleagues studied 229,543 Medicare beneficiaries with heart failure who died between 2000 and

2007. They examined resource use in the last six months of life and calculated costs to Medicare.

Over the entire study period, about 80 percent of patients were hospitalized in the last six months of life. Between 2000 and 2007, days in the intensive care unit increased from 3.5 to 4.6, hospice use increased from 19 percent to nearly 40 percent of patients and unadjusted average costs to Medicare per patient increased 26 percent from $28,766 to $36,216. After adjusting for age, sex, race, co-occurring medical conditions and region, costs increased by 11 percent. Older patients tended to have lower costs, while those with kidney disease, lung disease or who were black were more likely to have higher costs.

The trend of increasing hospice use marks a substantial change in end-of-life care, the authors note. "Some studies have found hospice care to be more cost-effective than nonhospice care, but we did not observe lower use of other services as the use of hospice increased," they write. "Rates of inpatient hospitalization remained high, suggesting that the potential for hospice to prevent costly hospitalizations has yet to be fully realized."

In another article, Padma Kaul, Ph.D., of the University of Alberta, Edmonton, Alberta, Canada, and colleagues evaluated data from 33,144 patients in Canada who died of heart failure between 2000 and 2006. They also assessed resource use in the last six months of life along with costs to the national health care system, as Canada has a single-payer system with universal access.

The percentage of patients who were hospitalized during the last six months of life decreased over the study period, from 84 percent to 76 percent, as did the percentage of patients dying in the hospital (from 60 percent to 54 percent). However, patients who died in later years were substantially more likely to receive outpatient care in the last six months

of life (52.8 percent in 2000 vs. 69.8 percent in 2006), and the average number of visits among those receiving such care increased from 6.4 to 7.7.

In 2006, the average end-of-life cost was $27,983 in Canadian dollars. "Costs in the last six months of life among patients who died in hospital were more than double those for patients who did not," $38,279 vs. $15,905, the authors write. "The substantial impact of location of death on costs can be illustrated as follows: reducing the number of hospital deaths by 10 percent in 2006 would have saved the health care system approximately $11 million (486 patients multiplied by mean cost savings of $22,374 per patient)."

"Increasing the availability of alternative venues of care, such as long-term care and home care, may be effective in further reducing hospitalizations and containing costs," they conclude.

In a third article, Jonathan Bergman, M.D., of the University of California, Los Angeles, and colleagues linked data from Surveillance, Epidemiology and End Results cancer registries to Medicare data to identify 14,521 men dying of prostate cancer in the United States between 1992 and 2005.

Overall, 7,646 of the men (53 percent) had used hospice, for a median (midpoint) of 24 days. African Americans and those with more co-occurring illnesses were less likely to use hospice, whereas having a partner and dying more recently were associated with greater use. Men who enrolled in hospice were less likely to receive high-intensity care, including admission to the intensive care unit, inpatient stays and multiple emergency department visits.

Although hospice use increased over time, almost one-third of patients enrolled in hospice within seven days of death or more than 180 days

before dying. "Hospice stays shorter than seven days are too brief to maximize the benefit of enrollment, and individuals making shorter stays receive fewer services and benefit less from the input of the full interdisciplinary team," the authors write. "At the other end of the spectrum, the Medicare hospice benefit requires that a primary care physician and a hospice medical director certify that an individual's expected prognosis does not exceed 180 days when he or she is enrolled in hospice."

"Increasing appropriate hospice use may improve the quality of death for men at the end of life while rationalizing health care expenditures during this high-cost period," they conclude.

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