Financial incentives affect prostate cancer treatment patterns

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According to a new study by researchers at the Perelman School of Medicine at the University of Pennsylvania, prostate cancer patients of urologists who own expensive radiation equipment are more likely to receive radiation treatment in lieu of surgery than patients treated by urologists without an ownership stake in the equipment. The study, now available online in the *Journal of Urology*, found that integrated prostate cancer centers (IPCCs), where urology and radiation oncology practices are combined, use expensive radiation-based treatments at higher rates than other forms of prostate cancer treatment, and reduce their use of prostatectomy (the surgical removal of all or part of the prostate gland).

Intensity-modulated radiation therapy (IMRT) used radiation beams of varying intensities and shapes that attack tumors. The changes in shape allow for reduced exposure of healthy tissue to radiation and limit the side effects of treatment. In the case of most IPCCs, urologists buy radiation equipment called linear accelerators, complex machines which can cost more than $1.5 million. The ownership stake in the equipment provides these physicians with reimbursement each time the equipment is used to treat a patient.

"Our study found that ownership of radiation therapy equipment that offers high reimbursement rates has an impact on treatment patterns for patients with prostate cancer," said Justin Bekelman, MD, assistant professor of Radiation Oncology at Penn Medicine. "IMRT increases for these patients while surgeries decrease when financial incentives are present. We also found increases in IMRT use in markets where

urologists do not own the equipment, but no corresponding decreases in surgery, which reflects the overall increase of advanced radiotherapy, an expensive treatment for prostate cancer."

In the new study, investigators examined prostate cancer treatment patterns among Medicare beneficiaries before and after conversion of a urology practice to an IPCC in July 2006. Patients were classified into three groups: (1) those seen by IPCC physicians; (2) those living in the geographic region ("nearby") and not seen by IPCC physicians; and (3) those living elsewhere in the state. Changes in treatment among the three groups were then compared, adjusting for patient, clinical, and socio-economic factors.

The researchers discovered that IMRT usage increased in all three patient groups, but the increase was substantially larger in the IPCC group (from 24 percent to 46 percent of all treatment cases) and the nearby group (16 percent to 38 percent) compared to the rest of the state (14 percent to 23 percent). Prostatectomy declined significantly: a reduction of almost 13 percentage points among the IPCC group compared to the nearby group and a 12 percentage point decline compared to the rest of the state.

Prostate cancer costs exceed $12 billion annually and account for nearly 10 percent of the total cost of cancer care to Medicare. Introduced in the late 1990s and now the most common radiotherapy treatment for prostate cancer, costs for IMRT can range from $25,000-$40,000 per treatment course, compared to $8,000-$13,000 for a prostatectomy and $12,000 for other alternative treatments.

"These findings highlight the importance of full disclosure by physicians to patients when the physicians stand to benefit financially from referrals or treatments," said Bekelman. "In all cases, patients should seek balanced opinions on their treatment options from both surgeons and

radiation oncologists."

Federal and state statutes bar doctors from referring patients to businesses in which they have a financial interest, or from receiving money for referrals. But over the years, exemptions have evolved. The in-office ancillary services exemption permits referrals when physicians maintain care oversight of the service within their office setting.

"Enhancing coordination of care is an important aspect of health care reform that is expected to lead to better outcomes and lower costs," said Andrew J. Epstein, PhD, research associate professor of Medicine and a co-author on the new study. "At the same time, this study also underscores that increased coordination in the absence of payment reform can lead to unintended consequences."

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