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EDITORIAL COMMENT

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Health technology diffusion refers to the process whereby innovations are communicated through various channels and then picked up by physicians. A good example of this diffusion is the uptake of robots in urologic surgery suites and intensity-modulated radiotherapy in radiation clinics. The assumed causal relationship between adoption of these new technologies and improved quality of care has been upended by the results of the present study. Schroeck et al¹ found no consistent relationship between technological capacity and adherence to nationally endorsed prostate cancer quality of care measures. As suggested by the authors, even if new technologies are first acquired by centers of excellence, the link between new technology and quality of care might disappear after their wider dissemination. Also, although new technologies may affect details of what happens in the operating room or radiotherapy facility, their adoption may not lead to quality improvement. And furthermore, technologies may increase focus on prostate cancer care without improving adherence to quality guidelines.

Other explanations are also possible. Specialists might be motivated to adopt new technologies because of perceived advantages relative to competitors. Once purchased, these technologies are likely to be used, possibly resulting in overuse. This is especially important when dealing with prostate cancer. Refined treatment technique means little if the patient would have been better off by simple watchful waiting.

We should restrain from adopting treatments that increase health care costs without improving quality.² Is purchase of the new and expensive technologies really justified? Does their adoption override other investments hospitals have been planning? Even the best robots or radiation techniques are to no avail if the other parts of the process of care are overlooked. Too much emphasis on one aspect of care can divert attention and resources from the others, and lead to worsening outcomes.²

New technologies should be carefully evaluated before allowing their widespread introduction. In reality, in Europe and the United States, robots started appearing in operating theaters well before the quality of care studies—and certainly health economic studies—had been conducted. In the United States, intensity-modulated radiotherapy adoption resulted in negative consequences—decreased prostate cancer surveillance rates and increased prostate cancer treatment costs during the ownership period by “self-referring urologists in private practice.”² The number of robotic prostatectomies has greatly increased in the United States, and this may have contributed to the increased rates of treating prostate cancer patients surgically vs other methods.³ The United States has focused on technology creation, whereas Europe is more heavily committed to applied and evaluative research, including health technology assessment.⁴ This being said, the use of high technology has increased in Europe.^{5,6}

The lesson learned from both sides of the pond, as outlined in this interesting study by Schroeck et al¹, is that adoption of new and expensive prostate cancer therapies will increase prostate cancer costs, but may not lead to quality improvements.

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