The Imperative of Teaching Cost Consciousness in Graduate Medical Education

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Residents are taught, or should be taught, the fallacy of believing that "if all you have is a hammer, everything looks like a nail."[1] Using the wrong technique, the wrong drug, or the wrong therapy can do more harm than good. An important lesson is that sometimes doing little or nothing is appropriate care. The rapid rise in health care costs in the United States—from an inflation-adjusted $2,855 per person in 1990 to $9,255 in 2013—reflects, in part, that physicians are working with more than a hammer in caring for patients.[2] But it may also indicate an indiscriminate use of the resources available. Other advanced industrial countries, with access to the same tools but often constrained by costs, spend far less than the United States, a country that also underperforms its peers on most measures of quality and access.[3]

Past efforts to curb unnecessary, costly care decisions by physicians, particularly under the guise of managed care, were often interpreted by physicians and patients alike as a tradeoff between quality and cost. Absent incentives to the contrary, physicians tend to choose aggressive treatments and quickly adopt new diagnostic and therapeutic procedures, without full consideration of the value to patients. Indeed, this tendency is often bound up with the physicians' self-perception as patient advocates.[4] Evidence points to considerable waste in health care spending: from unnecessary testing to the prescription of expensive drugs with generic alternatives to heroic but often futile and costly end-of-life care.[5] A generation of research from the Dartmouth Atlas has shown geographic variation in Medicare spending across the United States, which is not associated with quality of care.[6] More pointedly, aggressive treatment may actually lower quality of care while raising costs, as is the case with some end-of-life care.[7,8]

Recent studies have suggested that future spending behaviors may be shaped by one's training environment and the style and culture of practice to which a learner is exposed. Asch et al[9] found significantly higher rates of major maternal complications for women treated by obstetricians trained in residency programs with the worst ranking in complication rates. Another study[10] showed that American Board of Internal Medicine candidates trained in low-intensity practice hospital referral regions (HRRs) were more likely to correctly respond to examination questions regarding appropriately conservative treatment than their counterparts in high-intensity practice HRRs. Even after controlling for patient characteristics and spending levels in the physicians' practice HRR, a third study found that primary care physicians trained in HRRs with lower Medicare spending per beneficiary had patients with lower total (parts A and B) spending than physicians trained in HRRs with higher Medicare spending.[11]

In this issue of the *Journal of Graduate Medical Education*, Dine et al[12] further the case for "imprinting" effects of graduate medical education (GME) on the downstream cost and behavior of trainees. They examined the relative importance of residency programs in explaining variation in practice intensity, as measured by physician propensity to order tests and treatments. They surveyed 690 interns and residents from 7 internal medicine programs in the Philadelphia metropolitan area, and 325 (47%) responded. Practice intensity was measured using 23 vignettes capturing a preference for more aggressive care in diagnostic testing, consultation requests, and treatment. The survey also included assessment of attitudinal and psychological traits such as risk aversion that may influence practice intensity. Linear regression models predicting practice intensity scores were estimated and the explained variation was divided into 4 groups of variables: residency programs, demographic characteristics, personality traits, and subjective norms. The main finding was that residency programs accounted for almost half (47%) of the explained variation in practice intensity. This study supports the conclusion that "practice intensity is principally created by the socialization that occurs within training."[12]

Of the many factors accounting for high health care spending, the authors correctly note that GME training is 1 of the few that is modifiable. Individual residency programs have the capacity to model and

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teach cost consciousness and appropriately conservative care. Programs can promote good stewardship of scarce health care dollars as well as the importance of serving as patient advocates. National oversight organizations, such as certifying medical boards and the Accreditation Council for Graduate Medical Education, can reinforce these efforts by giving them greater importance in curriculum requirements and examination content. Federal and state governments can hold residency programs more accountable in exchange for the $14 billion currently spent for GME.[13]

Most importantly, a greater emphasis on appropriately conservative and cost-conscious treatment in residency training will better prepare physicians for the practice of the future. Recent reforms in the delivery of health care have emphasized the triple aim of "improving the experience of care, improving the health of populations, and reducing per capita costs of health care."[14] To achieve these aims, Medicare and other payers are moving away from fee-for-service models—where aggressive treatment is handsomely rewarded—to alternative payment models in which physicians are rewarded for the quality of their care and can share in savings attributable to cost-conscious practice styles.

The valuable contribution of Dine et al[12] has limitations, as noted by its authors. The residencies are geographically concentrated in 1 metropolitan area. Responses to vignettes by residents and interns do not necessarily reflect how they would make decisions in their eventual practice, where other factors can influence practice intensity. Future studies should research more directly the residency training itself and variation across residencies to better understand how physicians are socialized.

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