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The Value in the Evidence

Teaching Residents to “Choose Wisely”

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The Accreditation Council for Graduate Medical Education mandates that training physicians “incorporate considerations of cost awareness” into practice. However, medical education has traditionally avoided addressing costs, and most residency programs currently lack curricula to fulfill this requirement. With the recent widespread emphasis on unsustainable costs, inefficiencies, and waste in healthcare, the need to appropriately train physicians in this domain is increasingly apparent. In this article, we describe the implementation of a resident-led, case-based cost awareness curriculum for medicine residents at the University of California, San Francisco, sharing our keys to success and defining guiding principles.

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A new Institute of Medicine report estimates there is $750 billion annually in wasteful health care spending in the United States.1 Recently, the widely publicized American Board of Internal Medicine (ABIM) Foundation’s “Choosing Wisely” campaign, this journal’s Less Is More series, and the American College of Physician’s (ACP) “High-Value, Cost-Conscious Care” initiatives, have all begun to provide direction for physicians to address pervasive overuse in health care. These initiatives are sorely needed, as both practicing physicians and trainees have poor knowledge regarding medical costs and need more information about this increasingly relevant topic.2-4 Providing cost-effective care is mandated for training physicians by the Accreditation Council for Graduate Medical Education, which requires that residents “incorporate considerations of cost awareness” into practice.5 However, medical education has traditionally been silent regarding the role of cost, and most residency programs currently lack curricula to address this requirement.2,6

In response to this need, we developed a case-based curriculum for internal medicine residents at the University of California, San Francisco, with the goals of promoting cost awareness, improving physician attitudes toward cost control, and cultivating more cost-effective physician behavior. This curriculum was designed and led by a postgraduate year (PGY)-3 resident (C.M.) starting in June 2011.

To relate the concept of health care value to residents’ daily practice and address learners’ lack of foundational knowledge, we used a multifaceted approach involving didactic sessions, an experiential case review project for all PGY-1 residents, and a monthly case-based noon conference for all on-service medical students, residents, and attending physicians. Our strategy is to link principles of cost awareness to evidence-based diagnosis and treatment for common medical conditions, thereby maximizing value (defined as quality divided by cost) for our patients. Each month, a different cost awareness core topic—a common clinical scenario with high resource-utilization variability—is reviewed. These core topics, which include pulmonary embolism, headache, chest pain, syncope, and
low back pain, among others, were proposed and chosen by a committee including a resident, chief residents, and faculty within the Internal Medicine residency program.

The curriculum includes a 1-hour introductory cost awareness session presented to the 5 to 6 PGY-1 residents each month on a required patient safety rotation. This session introduces the background and rationale for addressing costs in medical care, as well as a framework to evaluate value in health care. Next, these PGY-1 residents are given a detailed, anonymous clinical course summary for a recent patient from our university-based hospital, along with their actual, itemized hospital statement obtained for educational purposes from the financial office.

The learners are then divided into 2 groups: 1 reviews evidence-based guidelines for the workup and management of the specified condition, and the other evaluates common practices and relevant hospital billed charges. Most learners spent 3 to 4 hours during a 1-week time period reviewing these materials. We then reconvene the 2 groups for a facilitated session to present and integrate their findings.

By using a real case from our own institution, learners have the opportunity for a more meaningful reflection on their own ordering behaviors, as well as review how the concepts of evidence-based medicine and health care value translate directly to the care that they and their colleagues provide.

Using the collective lessons from the PGY-1 group, we prepare a monthly case-based noon conference to share with all on-service medical students, residents, and attending physicians. During this conference, we review the specific case and underscore appropriate evidence-based, cost-effective care. The key medical background, relevant epidemiology, and guidelines for the given diagnosis are covered, alongside a review of associated costs and recommendations for cost-effective workup and management. Each conference concludes with concrete recommendations for practices to “start” and “stop” based on the presented lessons.

As an example, PGY-1 residents reviewed the case of a 45-year-old otherwise healthy man with 2 weeks of nonspecific low back pain. The patient had been seen in our primary care clinic and underwent a workup consisting of lumbar spinal radiographs, basic laboratory tests, a trial of medications, and eventually a magnetic resonance imaging scan. The PGY-1 residents reviewed the relevant guidelines, including the ACP recommendations for the management of low back pain, and researched the indications and associated costs of imaging for low back pain (based on charges from provided bills). They calculated that the total workup and treatment for this cost $10,821. In contrast, if the ACP guidelines had been followed, the workup and treatment would have cost only $908 in charges.

Following each conference, surveys were distributed to all attendees in order to collect preliminary data on the relevance and effectiveness of the conferences. We received 176 anonymous evaluations from 10 separate conferences involving third-year (n=28) and fourth-year medical students (n=27), residents (PGY-1, n=55; PGY-2, n=22; PGY-3, n=25), and attending physicians (n=19). Participants overwhelmingly agreed that the conference was “relevant to [their] medical practice” (mean [SD] score, 4.6 [0.6] on a 5-point Likert scale ranging from 1 [not at all] to 5 [extremely]; median score, 5), and that they were “likely to change [their] practice based on this conference” (mean score, 4.3 [0.7]; median score, 4). They were also asked to “Please write down one thing that you would consider doing differently based on today’s conference.” This provided them with their own “action item” to take away from the conference.

While we have not yet measured whether the curriculum has led to a change in knowledge, attitudes, or behaviors of the learners, these self-reported results are overwhelmingly and unanimously positive. Anecdotally, the concepts of value and cost-effective workups are now much more commonly discussed at other conferences throughout the medicine residency program at our institution, and attending physicians have increasingly observed students and residents incorporating these concepts on clinical rounds. Also, many of the resources and some of our format were adopted for the recently released national ACP High-Value, Cost-Conscious Care curriculum.

We believe that one of the key lessons for the success of this curriculum is that guidelines and basic medical knowledge are emphasized within the context of appropriate resource utilization. Though our curriculum was designed prior to the launch of the ABIM Foundation’s “Choosing Wisely” campaign, thematically it is similar to that effort in its identification of specific areas of wasteful testing or treatment in different clinical scenarios. Prior research has shown that simply providing cost information to physicians has little effect on resource utilization, and we did not want to confuse or discourage residents from ordering costly tests when warranted. Therefore, our curriculum emphasizes the evidence-based workup and management of specific conditions, seeking to clarify when tests and treatments should be used appropriately rather than advocating for blanket reductions in resource utilization. Our curriculum is also primarily resident designed and led, which likely helped obtain initial buy-in and enthusiasm for the principles the curriculum espouses.

Residency programs are now charged with integrating principles of cost awareness and health care value into medical training. Our well-received, resident-designed cost awareness curriculum for internal medicine residents explicitly links evidence-based medicine to cost consciousness in a case-based fashion. These attributes should be considered as some of the guiding principles for designing successful resident cost curricula.

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