“Choosing Wisely” in an Academic Department of Medicine

Jonas Z. Hines, MD1, Justin L. Sewell, MD, MPH1, Niraj L. Sehgal, MD, MPH1, Christopher Moriates, MD1, Claire K. Horton, MD, MPH1, and Alice Hm Chen, MD, MPH1

Abstract
The “Choosing Wisely” campaign seeks to reduce unnecessary care in the United States through self-published recommendations by professional societies. The research team sought to identify factors related to low-value care in the Department of Medicine at the University of California San Francisco, using a subset of clinical scenarios published by the American College of Physicians. The team further explored respondents’ values on cost consciousness. A notable minority disagreed with the identified low-value tests. In 6 of 8 scenarios, faculty were more likely to rate the scenarios as representing low-value testing \( (P < .05) \). Level of training was the only predictor of attitudes toward unnecessary care after linear regression analysis (coefficient 3.14, \( P < .001 \)). Increased postgraduate education about cost of care is recommended.

Keywords
cost consciousness, academic medicine, low-value care, cost control, medical expenditures

Health care expenditures in the United States are the largest in the world, a large portion of which is of questionable value.1,2 Although many different factors contribute to a “perfect storm”3 of overutilization and higher costs in the United States—including the high price and patient expectations for cutting-edge medicine—physicians are among the largest drivers of health spending.4 Thus, the profession can play a significant role in bending the cost curve and maintaining the solvency of the health care system.

During the past several years, the medical profession has begun to answer the call to action to reduce the use of health care interventions thought to be of low value,5-7 the most prominent example being the “Choosing Wisely” campaign.8 This effort engages professional societies to identify frequently ordered but rarely useful tests within their respective specialties and create a list of “top 5” tests or procedures that should not be routinely performed.

In prior studies, physicians tended to report that cost was an important variable in decision making and that physicians play an important role in controlling costs.9-11 A more recent survey corroborated these trends, although physicians rated themselves as having less responsibility for lowering costs than entities such as trial lawyers and health insurance companies.12 In this study, group practice setting, compensation by salary plus bonus, reduced concerns for malpractice, and tolerance of uncertainty predicted more cost consciousness. Although the foregoing studies described cost consciousness within a variety of health care settings, understanding of these issues in academic settings is limited. Because academic programs have dual goals of patient care and education of trainees, and because much of the health care provided in academic settings may be driven by trainees rather than by more experienced clinicians, practices related to cost consciousness may vary. Accordingly, the research team sought to characterize cost consciousness within the academic Department of Medicine at the University of California San Francisco, using a subset of the list of 37 low-value diagnostic tests compiled by the American College of Physicians.13 Because the practices of trainees are not well understood, the team specifically sought to compare trainees (residents and fellows) with attending physicians.

Methods
Drawing on published literature,9-11 the research team developed a survey to ascertain practice, attitudes, behaviors, and perceived drivers of unnecessary care (see online Appendix at http://ajmq.sagepub.com/supplemental) in

1University of California San Francisco, CA

Corresponding Author:
Jonas Z. Hines, MD, Department of Medicine, University of California San Francisco, 505 Parnassus Ave, M-989, San Francisco, CA 94143.
Email: jonas.hines@ucsf.edu
the Fall of 2012. An invitation to complete the survey was e-mailed to all internal medicine faculty, fellows, and residents based at University of California San Francisco Medical Center, San Francisco General Hospital (the City’s public hospital), and the San Francisco Veterans Administration Medical Center. Two additional reminder e-mails were sent to all participants. Demographic data on level of training, primary practice site, inpatient versus outpatient setting, and generalist versus specialist were collected.

The first section included 8 low-value diagnostic scenarios from a survey by the American College of Physicians, and respondents were asked to rate their agreement using a 5-point Likert-type scale. Data from the 8 low-value diagnostic scenarios were averaged together to create a “composite low-value score.” The second section asked 6 questions about physicians’ roles and responsibilities in addressing health care costs, based on a literature review. In the last section, respondents were asked to assess the percentage of unnecessary care in the United States and in personal practice, as well as to rate the importance of 8 potential drivers of unnecessary care.

The research team used 2-tailed t tests and analysis of variance for bivariate characteristics, with a significance level of P ≤ .05. The team performed a linear regression for factors associated with the composite unnecessary care score. All analyses were prespecified. The university’s institutional review board granted exempt status to the study.

Results

Among the 920 potential respondents (575 faculty, 180 fellows, and 165 house staff), 315 (34%) completed at least part of the survey. Partial responses (N = 36) were excluded from the final analysis, yielding a sample size of 279. Characteristics are shown in Table 1. The ratio of trainees to faculty was 40:60. More than 60% were generalists, and more than 55% practiced primarily in an inpatient setting.

Many respondents (49% to 71%) agreed that the scenarios represented unnecessary testing (Figure 1). Conversely, one quarter to almost 40% of respondents did not agree that the selected tests were low value. Perception of low-value care did not differ among generalists versus specialists, inpatient versus outpatient providers, or by primary hospital of practice (data not shown). In 6 scenarios, faculty were more likely to rate the scenarios as representing low-value testing (Table 2). In linear regression analysis, level of training was the only factor associated with cumulative low-value care score (coefficient 3.14, P < .001). Self-reported cost consciousness did not vary between faculty and trainee (3.5 and 3.3, respectively, on a 5-point Likert-type scale, with 5 = always and 1 = never).

A large majority agreed that physicians have the ability and responsibility to contain costs (Figure 2). Despite this, 30% felt that it is the physician’s duty to offer an intervention regardless of cost. Attitudes were similar across all characteristics evaluated (primary vs specialty care, inpatient vs outpatient, primary hospital of practice). However, trainees were slightly less likely to report considering cost as a factor in patient care decisions compared to faculty (Table 2). There were no other differences among respondent characteristics.

All factors evaluated were considered important drivers of health care costs (Table 3), with unwillingness to acknowledge limits of resources and unrealistic patient expectations being primary reasons.

Discussion

Although experts often agree when certain tests are not indicated, this consensus does not necessarily extend to practicing physicians. In this large academic Department of Medicine, a notable minority of internal medicine faculty and trainee respondents did not agree that a sample of low-value diagnostic tests were low value. This finding may simply reflect the common pattern of low-value practices seen in medicine. For example, a recent study found that among a sample set of tests and treatments, inappropriate care was frequent and constant over a decade-long
Table 2. Data From Survey of Unnecessary Care and Cost Consciousness, Low-Value Tests.

<table>
<thead>
<tr>
<th>Low-value diagnostic scenarios</th>
<th>Trainee</th>
<th>Faculty</th>
<th>All Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1: ECG in low-risk patients, mean (SD)</td>
<td>3.3 (1.4)</td>
<td>3.9 (1.4)</td>
<td>3.6 (1.4)</td>
</tr>
<tr>
<td>Scenario 2: BNP in typical heart failure, mean (SD)</td>
<td>3.1 (1.4)</td>
<td>3.3 (1.3)</td>
<td>3.2 (1.3)</td>
</tr>
<tr>
<td>Scenario 3: Echo for syncope, mean (SD)</td>
<td>3.7 (1.3)</td>
<td>3.6 (1.4)</td>
<td>3.7 (1.3)</td>
</tr>
<tr>
<td>Scenario 4: Annual lipids in low-risk patients, mean (SD)</td>
<td>3.4 (1.4)</td>
<td>4.0 (1.3)</td>
<td>3.7 (1.4)</td>
</tr>
<tr>
<td>Scenario 5: Imaging for nonspecific back pain, mean (SD)</td>
<td>3.4 (1.4)</td>
<td>4.0 (1.3)</td>
<td>3.8 (1.4)</td>
</tr>
<tr>
<td>Scenario 6: ANA for nonspecific symptoms, mean (SD)</td>
<td>3.3 (1.4)</td>
<td>3.8 (1.3)</td>
<td>3.6 (1.4)</td>
</tr>
<tr>
<td>Scenario 7: Perioperative coagulation studies for low-risk patients, mean (SD)</td>
<td>3.2 (1.2)</td>
<td>3.5 (1.4)</td>
<td>3.4 (1.3)</td>
</tr>
<tr>
<td>Scenario 8: Screening spirometry, mean (SD)</td>
<td>3.5 (1.6)</td>
<td>4.1 (1.5)</td>
<td>3.8 (1.6)</td>
</tr>
<tr>
<td>Composite unnecessary care score (based on scenarios 1-8)</td>
<td>3.3 (0.8)</td>
<td>3.8 (0.9)</td>
<td>3.6 (0.9)</td>
</tr>
</tbody>
</table>

Physician role and responsibility in health care costs

| Based on a 5-point Likert-type scale (1 = Never, 5 = Always). |

Abbreviations: ANA, antinuclear antibody; BNP, brain natriuretic peptide; ECG, electrocardiogram.

Figure 1. Respondents’ views of low-value care scenarios.
Abbreviations: ANA, antinuclear antibody; BNP, brain natriuretic peptide; COPD, chronic obstructive pulmonary disease; ECG, electrocardiogram.
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Physicians' decisions have little impact on cost
Reducing costs is beyond physicians' control
It is unfair to balance cost with patient welfare
Physicians have a duty to offer an intervention regardless of cost
Trying to contain costs is physicians' responsibility
Physicians should teach trainees about costs

Figure 2. Respondents' attitudes toward cost consciousness.

Table 3. Perceptions of Particular Drivers of Unnecessary Medical Care.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Very Important or Somewhat Important</th>
<th>Neutral</th>
<th>Somewhat Not Important or Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society's unwillingness to acknowledge limits to health care resources</td>
<td>269 (96.4)</td>
<td>10 (3.6)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Patients with unrealistic expectations of what medical interventions can do</td>
<td>256 (91.8)</td>
<td>16 (5.7)</td>
<td>7 (2.5)</td>
</tr>
<tr>
<td>Inadequate information on the cost-effectiveness of medical interventions</td>
<td>252 (91.0)</td>
<td>13 (4.7)</td>
<td>12 (4.3)</td>
</tr>
<tr>
<td>Inadequate information on the cost of medical interventions</td>
<td>243 (87.1)</td>
<td>16 (5.7)</td>
<td>20 (7.2)</td>
</tr>
<tr>
<td>The need to practice defensive medicine</td>
<td>228 (82.6)</td>
<td>33 (12.0)</td>
<td>15 (5.4)</td>
</tr>
<tr>
<td>Physicians' unwillingness to refuse patients' demands for unnecessary interventions</td>
<td>228 (81.7)</td>
<td>35 (12.5)</td>
<td>16 (5.7)</td>
</tr>
<tr>
<td>Direct-to-consumer advertising about drugs and treatment</td>
<td>216 (78.0)</td>
<td>35 (12.6)</td>
<td>26 (9.4)</td>
</tr>
<tr>
<td>Patients not sufficiently sharing in the cost of their health care</td>
<td>148 (53.0)</td>
<td>56 (20.0)</td>
<td>75 (26.9)</td>
</tr>
</tbody>
</table>

*Values provided are n (%).

period. Reasons for this finding include slow dissemination of a large and ever-changing knowledge base required to practice medicine, as well as patients’ demands for unnecessary services, a culture in medicine that emphasizes thoroughness over prudence, and a dearth of incentives to practice cost-conscious medicine.

Level of training was the only predictor of perceptions of low-value diagnostic testing among several studied characteristics. Differences in trainee compared with faculty member attitudes toward cost consciousness did not explain this difference. That less experienced physicians may be more likely to order certain low-value tests is consistent with one recent study in which years of practice experience was related to cost profile. A possible explanation for this observation is tolerance of uncertainty, which may increase with experience and would be expected to influence cost consciousness. Lack of familiarity with the evidence also may contribute to these findings. To the research team’s knowledge, no studies have examined how attitude toward cost containment relates to low-value practice. The present study found no linkage between the two. Further studies should be conducted to better elucidate this relationship.

Although respondents’ views on the value of the selected tests varied, they broadly supported both the profession’s role in controlling cost as well as responsibility for teaching trainees about cost. Respondents also eschewed the idea that cost must be pitted against patient welfare.
There were several limitations to this study. This survey reports results from a single program and the results reflect the study institution’s culture. The response rate was low, which may confer respondent bias. Moreover, the relatively small sample size could have limited the ability to detect other differences. The research team does not know how the present findings of a small group of select physicians compare with the larger sample in the original survey from which the set of low-value diagnostic tests was drawn, as those findings were never published. The diagnostic scenarios were hypothetical and actual practice was not examined. Moreover, the scenarios represent primarily ambulatory practices, which may affect responses to a survey in which the majority of respondents were primarily inpatient providers. Additionally, generalist practitioners were overrepresented in the survey responses. Last, cost consciousness is a complex set of beliefs and behaviors that is difficult to assess fully using a survey methodology.

As pressure to reduce costs in health care escalates, stakeholders are increasingly looking at physicians as stewards of health care resources. In a large university setting, the research team found that level of training may relate to low-value practice. Despite this difference, faculty and trainees did not differ significantly in their attitudes toward cost consciousness. These findings underscore the importance of integrating cost consciousness into postgraduate medical training.

Declaration of Conflicting Interests
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