cian teaching time was positively correlated with discussion of any test-ordering principle \( (P < .001) \).

**Discussion**  To our knowledge, this is the first publication documenting the frequency of discussion of American College of Physicians test-ordering principles by attending physicians on rounds. In our view, discussion of these principles offers potential benefits, including improved test-ordering appropriateness and more patient-centered care. Because ward rounds continue to serve as a key educational forum for trainees, our observation that only 1 in 5 encounters involves attending physician-led discussion of these principles is discouraging.

Limitations of our study include the low occurrence rate and small sample size, thereby limiting detection of between-group differences. Our observer standardization process could have been more robust. Because annotation occurred in real time and episodes were not recorded, our study may be underreporting actual event frequencies. We did not track whether individual principles were discussed more than once per encounter or whether residents led discussion about test appropriateness. The single-institution nature and singular discipline limit generalizability.

Our secondary analysis conflicts with findings of a previous study showing that outpatient physicians who spend more face time with patients order fewer radiographic studies. However, we tracked discussion rather than test ordering.

The suggestion that more frequent discussion occurs for new compared with known patients could arise from more frequent ordering of diagnostic tests during the initial 24 hours of hospitalization. Medical educators could consider standardizing discussion for all testing of newly admitted patients to optimize care and educational value. Larger studies are needed to explore further potential links between on-rounds teaching, trainee acquisition of high-value care principles, and patient outcomes.

Cason Pierce, MD, MA
Angela Keniston, MSPH
Chad Stickrath, MD

Author Contributions: Dr Pierce had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Pierce, Stickrath.

Acquisition, analysis, or interpretation of data: Pierce, Stickrath.

Drafting of the manuscript: Pierce, Keniston.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Keniston.

Obtained funding: Stickrath.

Administrative, technical, or material support: Pierce, Stickrath.

Study supervision: Pierce, Stickrath.

Conflict of Interest Disclosures: None reported.

Funding/Support: Funding for conducting observations was provided by a grant through the Academy of Medical Educators at the University of Colorado Anschutz.

Role of the Funder/Sponsor: The University of Colorado Anschutz had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Previous Presentation: This article was presented in part as a poster at the Society for General Internal Medicine Meeting; April 22, 2015; Toronto, Ontario, Canada.

Additional Contributions: Daniel Ozzello, MD (University of Colorado Anschutz), served as a research assistant. He observed rounding encounters and collected primary data. He received monetary compensation for the time he spent observing rounding sessions.


**Editor’s Note**

**Teaching High-Value Care on Rounds: Modeling Moderation**

There is consensus among medical education leaders that trainees must learn the principles of cost consciousness and resource stewardship. However, during teaching rounds, resi-

**Table. Frequency of Discussion on Appropriateness of Diagnostic Testing**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Patient Encounters, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All (N = 168)</td>
</tr>
<tr>
<td>Previously performed</td>
<td>11 (6.6)</td>
</tr>
<tr>
<td>Affects care</td>
<td>23 (13.7)</td>
</tr>
<tr>
<td>False-positive result</td>
<td>6 (3.6)</td>
</tr>
<tr>
<td>Short-term harm</td>
<td>4 (2.4)</td>
</tr>
<tr>
<td>Patient preference</td>
<td>5 (3.0)</td>
</tr>
<tr>
<td>Any discussion</td>
<td>35 (20.8)</td>
</tr>
</tbody>
</table>

* There was 1 missing data point for this category.
students and students can derive an ambivalent approach to value. Particularly in academic centers where resources seem limitless, attending physicians often suggest additional tests that expand exhaustive differential diagnoses. This builds on trainees’ gnawing fear of missing something to establish thoroughness as an unrestrained virtue. The pressures of individualized quality metrics along with compressed inpatient evaluations to minimize length of stay may further reinforce this mindset and encourage defensive testing. These practices contradict and displace discussions of value.

The research letter by Pierce et al in this issue of *JAMA Internal Medicine* underscores the unrealized potential of rounds to teach high value. Pierce et al observed 168 patient encounters on internal medicine rounds and recorded how often an attending physician invoked the American College of Physicians’ test-ordering appropriateness criteria. Attending physicians only discussed appropriate test ordering during 35 (20.8%) of 168 patient encounters. They most often brought up whether a test affected care (23 encounters [13.7%]) and rarely discussed whether a test would cause harm (4 encounters [2.4%]). There is no standard on how often attending physicians should discuss value with trainees, and conversations that residents initiated about value were not captured in the study. However, the findings are in line with surveys of program directors, medical students, and residents who all noted missed opportunities for faculty to model these skills.

How might educators change the culture of rounds from rewarding meticulousness to celebrating moderation? Just as we challenge trainees to explain their diagnostic reasoning, so too should we probe them to justify their use of tests and resources. Attending physicians should model the confidence needed to enact a stepwise diagnostic workup. In addition to using evidence-based guidelines, we should reemphasize history and physical examination findings to refine and guide diagnostic workup. Finally, we should study such interventions to determine whether they affect practices as well as attitudes.

Rachel J. Stern, MD
Anna L. Parks, MD

**Conflict of Interest Disclosures:** None reported.


**Timeliness of End-of-Life Discussions for Blood Cancers: A National Survey of Hematologic Oncologists**

Existing studies suggest a quality gap with respect to end-of-life (EOL) care for patients with blood cancers, and less timely EOL discussions may be partly to blame. Indeed, patients with blood cancers are more likely to receive chemotherapy and be hospitalized when near death, to die in acute care settings, and are less likely to use hospice services than those with advanced solid tumors. A rigorous understanding of when EOL discussions occur for patients with hematologic cancers is a necessary step toward developing targeted interventions to improve the quality of their EOL care.

**Methods** | From September 16, 2014, through January 21, 2015, we conducted a postal survey of US hematologists who provide direct care for adult patients with hematologic cancers, whom we identified from the clinical directory of the American Society of Hematology. We developed the survey instrument through a synthesis of preliminary data from a series of focus groups with hematologic oncologists, a review of the relevant literature, previously published survey instruments, and formal cognitive debriefing.

To assess the timing of EOL discussions, we asked, “In your experience, end-of-life care discussions with patients who have hematologic cancers typically occur...” with the response options of “too early,” “at the right time,” or “too late.” In addition, we examined the timing of initial conversations about specific aspects of EOL care by asking, “For patients with life-threatening hematologic cancers, when do you typically conduct the initial discussion specifically addressing resuscitation status?” with the response options of “upon presentation or diagnosis,” “during a period of stability,” “upon disease progression,” “during an acute hospitalization,” and “when death is clearly imminent.” The same stem and responses were used to ask about initial discussions regarding hospice care and preferred site of death.

This study was approved by the Dana-Farber/Harvard Cancer Center Institutional Review Board.

**Results** | Of the 609 eligible hematologic oncologists, 349 (57.3%) completed the survey. Their median age was 52 years, and 75.4% were men. Overall, 42.9% of the hematologists who completed the survey practiced primarily in tertiary centers and 55.4% practiced in community centers. Of the 345 individuals who answered the question about typical timing of EOL discussions, 55.9% reported that, in their experience, these discussions occur “too late.” Respondents in tertiary centers were more likely to report late EOL discussions than were those in community centers (64.9% vs 48.7%, *P* = .003) (Table 1), an association that remained significant in multivariable analysis. As for specific topics of EOL care, 42.5% of the respondents reported conducting their first conversation about resuscitation status at less optimal times; 23.2% and 39.9%, respectively, reported that they typically wait until death is clearly imminent before conducting an initial conversation about hospice care or preferred site of death (Table 2). Moreover, hematologic oncologists at tertiary centers were less likely to initiate hospice and resuscitation status discussions at more optimal times than were those at community centers.