



Practical Tactics  
For Increasing  
Relevancy In CME

## Introduction

**M**eta-analyses have consistently found continuing medical education (CME) to be effective; however, the reasons behind this effectiveness remain elusive. Evidence suggests that relevant, interactive, and multifaceted activities are more likely to achieve successful outcomes, but what do these adjectives mean?<sup>1</sup> What threshold must a CME activity meet to satisfy these strategies? And which tactics are most successful? Without clarity, CME providers are left to their own interpretations, and the inability to pool results across the resulting disparate educational interventions is a commonly cited limitation in CME effectiveness research.<sup>2</sup>

The first of these three strategies, relevancy, is generally understood as ensuring that educational content is based upon a perceived need of the target learner. Perceived need indicates that the learner both recognizes a gap between what is presently occurring in practice and current evidence, as well as presents with the motivation for behavior change to reduce this gap. Both Moore and colleagues and Ruggiero et al have described frameworks for identifying and fostering relevancy in CME.<sup>3</sup> However, the delineation between what is and what is not relevant remains unclear. Often, the relevancy of a CME activity is assumed to increase in proportion to the objectivity of the data upon which it is constructed. For example, educational need based on an audit of physician charts is typically perceived to be more relevant than that built upon the more subjectively perceived physician survey. Although this expectation is entirely logical, survey-based measures have been validated as proxies for actual physician performance.<sup>4-9</sup> Accordingly, much remains to be clarified in regards to how relevancy in a CME activity is determined, as well as which tactics are most effective.

This paper is the first in a multi-part series investigating educational tactics for achieving relevancy, interactivity, and multifacetedness in CME, as well as benchmarks for attaining these strategies. This series will begin by describing one tactic to increase the relevancy of a given CME activity that Med-IQ has successfully employed across multiple educational initiatives. The description will be relative to a recent enduring activity addressing new guidelines for autologous hematopoietic stem cell (AHSC) transplant.

## The Activity

AHSC transplant plays a pivotal role in the management of hematologic malignancies such as multiple myeloma (MM) and non-Hodgkin's lymphoma (NHL) by reconstituting bone marrow and hematopoietic function after high-dose chemotherapy. Practices for the mobilization and collection of AHSCs vary widely across transplant centers and among different practices within centers. New guidelines offer recommendations intended to improve patient outcomes, reduce mobilization failures, decrease costs, and enhance resource utilization.<sup>10</sup> It is unclear, however, whether the recommendations provided in these guidelines are being applied in clinical practice. In addition, the extent to which transplant centers encounter barriers to successful stem cell mobilization and collection for autologous transplant is unknown.

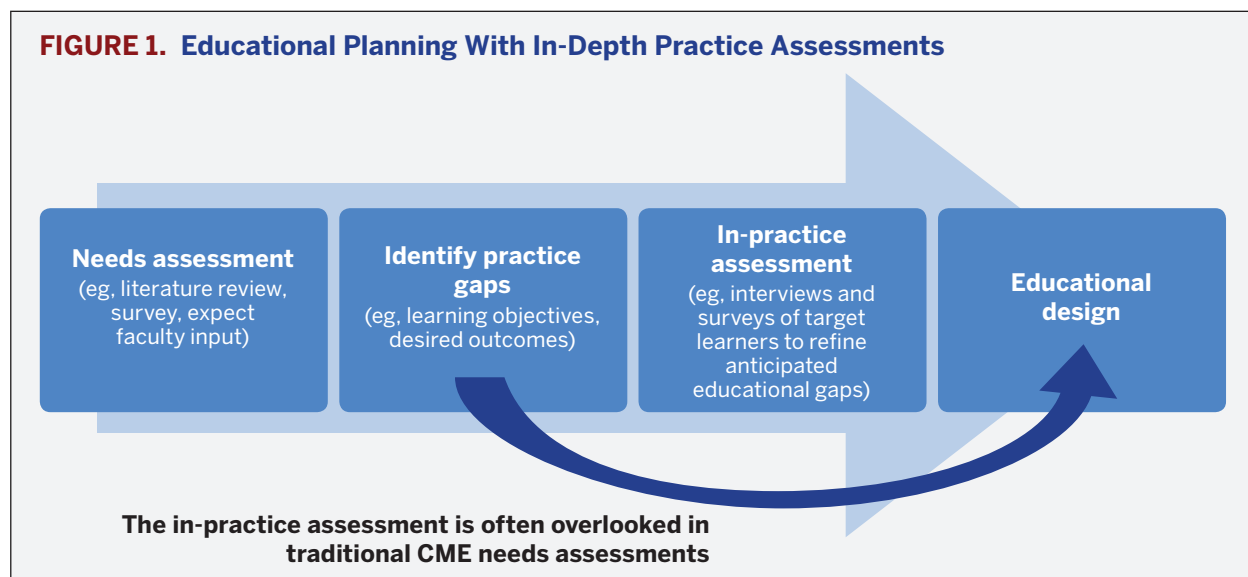
In order to assess whether clinical practice has changed to align with the new guideline recommendations, Med-IQ developed a novel, research-based initiative to identify clinical barriers and determine whether evidence-based recommendations for AHSC mobilization and collection were being applied to practice. This initiative consisted of an in-depth practice assessment and a corresponding certified annotated slide library. The goals of this initiative were to: (1) increase knowledge of conditions, prior treatments, and other disease- and patient-related factors that place patients at risk of poor AHSC mobilization and (2) increase the application of guideline-based strategies for the mobilization and collection of AHSCs.

## Addressing Relevancy: In-Depth Practice Assessment

The intention of an in-depth practice assessment is to reveal educational needs, based on the feedback of “in-the-trenches” physicians, that may have otherwise been overlooked. Gathering such front-line information on current practices and barriers to develop relevant education is an important and unique supplement to the issues identified via more traditional needs assessments, such as published literature, e-mail surveys, and expert faculty input. This tactic permits a first-hand look at patient care, identifies potential barriers to optimal care, and helps to define the causes of educational gaps.

Unlike traditional needs assessments that determine educational gaps before an activity is developed, the in-depth practice assessment extends the evaluation of practice gaps into the content-development phase to refine the anticipated practice gaps in relation to the actual practice experience of the target learners (**Figure 1**).

For this initiative, Med-IQ evaluated 6 hematopoietic stem cell transplant (HSCT) physicians from geographically diverse locations across the United States by way of live telephone interviews and online surveys to assess the implementation of recently published guidelines on AHSC mobilization and to evaluate how physicians manage transplant patients under different circumstances. Each telephone survey was approximately 60 minutes long, recorded, and subsequently transcribed. All inter-



views were completed in December 2014. In recognition of their contribution, participating physicians received a complimentary report summarizing overall research findings (ie, barriers, challenges, educational needs, and best practices in HSCT), a small honorarium for completing the 60-minute telephone interview, and additional compensation for completing an online follow-up survey approximately 60 days after receiving the summary report. Interviewees were asked open-ended questions about practices and procedures, barriers and disparities in care, mobilization strategies, and patient education. The proportion of patients treated in each physician-interviewee practice varied widely, with 20% to 70% of patients being treated for MM, and 15% to 50% of patients being treated for NHL.

The goals of the in-depth practice assessment were to:

- Identify factors that place patients at risk of poor AHSC mobilization, thereby requiring guideline-recommended mobilization protocols
- Discuss guideline-based strategies that optimize first-attempt stem cell mobilization and collection in patients undergoing AHSC transplantation
- Reveal effective and practical strategies currently used to optimally mobilize AHSCs for transplantation
- Observe best practices that can be disseminated to the greater HSCT communities to encourage increased competency and capacity to provide care to patients who require HSCT

## Certified, Annotated Slide Library

In collaboration with expert faculty, Med-IQ developed an online annotated slide library focused on recent guidelines on optimizing strategies in AHSC mobilization and collection.

The activity was directly informed by the in-depth practice assessment described above. To enhance the educational experience and reinforce clinical content, the slide library was annotated with thoughtful expert insight, evidence-based practice pearls, and unattributed quotes from clinicians who had participated in the practice-assessment interviews (see **Figure 2**).

This educational activity served two functions: (1) to enhance physician knowledge and the implementation of new guidelines on AHSC mobilization, and (2) to provide a resource that transplant physicians could use to inform colleagues with decision-making authority about mobilization protocols. The annotated slide library was launched April 3, 2015, and was certified (for 0.25-credit) for 1 year.

## Educational Outcomes

The in-depth practice assessment was administered to 6 transplant physicians. A total of 612 individuals viewed the certified slide deck (122% of target), of which approximately 477 were hematologist/oncologists.

Educational outcomes were assessed by pre- and post-activity questions embedded within the digital

### FIGURE 2. CME Insights From In-Depth Practice Assessment

#### Frontline Perspectives

“So if someone had prior—especially pelvic—radiation, then I would consider that a risk factor. Multiple lines of prior chemotherapy, especially purine analogs like fludarabine. If they’ve had a lot of the alkylators over time. Our group found that diabetes seems to cause poor mobilization, too... [in] some of those we might just do [plerixafor] just from the get-go, plan on it and not do the just-in-time where you add it in when you need to.”

“[We] will add plerixafor if they have been heavily pretreated with chemo.”

Med-IQ In-Practice Research, 2014.

enduring activity, an online 30-day follow-up survey, and a post-activity evaluation tool for CME credit seekers (76 of whom redeemed credit). Matched comparisons were analyzed via McNemar's test for categorical data (eg, case vignette questions) and Wilcoxon signed-rank test for ordinal data (eg, confidence ratings). There were 77 matched respondents pre- versus post-activity and 23 matched respondents pre- versus 30-day follow-up.

Overall, pre- and post-activity data indicated that the magnitude of educational effect (Cohen's *d*) for the online publication exceeded benchmark for educational significance and was within the expected range for a Med-IQ eLearning activity, as compared with other enduring activities that have expired in the previous 12 months (Figure 3).<sup>11</sup> An educational effect was still detectable 30 days post-activity (*d* = .22); however, the magnitude was proportionally one-half that measured immediately post-activity. Specific, significant educational gains (*P* < .05) were measured for:

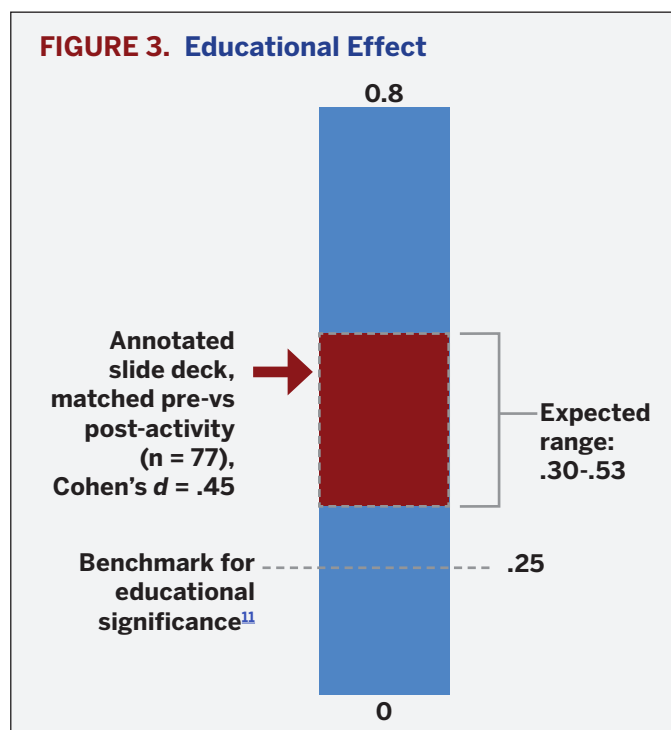
- Knowledge of which prior treatments would be most likely to confer a risk of poor AHSC mobilization (measured immediately post-activity)
- Knowledge of the approximate percentage of time that mobilization fails in patients with MM who are treated with standard doses of

growth factor alone (measured immediately post-activity)

- Confidence in the ability to identify patients who may be at risk of poor AHSC mobilization using standard initial regimens (measured at 30-day follow-up only)
- Application of guideline-based strategies that optimize first-attempt stem cell mobilization and collection in patients who are undergoing AHSC transplantation (measured immediately post-activity and at 30-day follow-up) (see Figure 4 on the next page)

Respondents also reported several intended practice changes immediately post-activity, most commonly related to treatment (eg, *I will follow a guideline- and evidence-based protocol for first attempts at AHSC mobilization*), patient screening/monitoring (eg, *I will identify patients who carry the diagnosis of diabetes as a risk of poor mobilization*) and education (eg, *I will educate other staff/nurses in my clinic*).

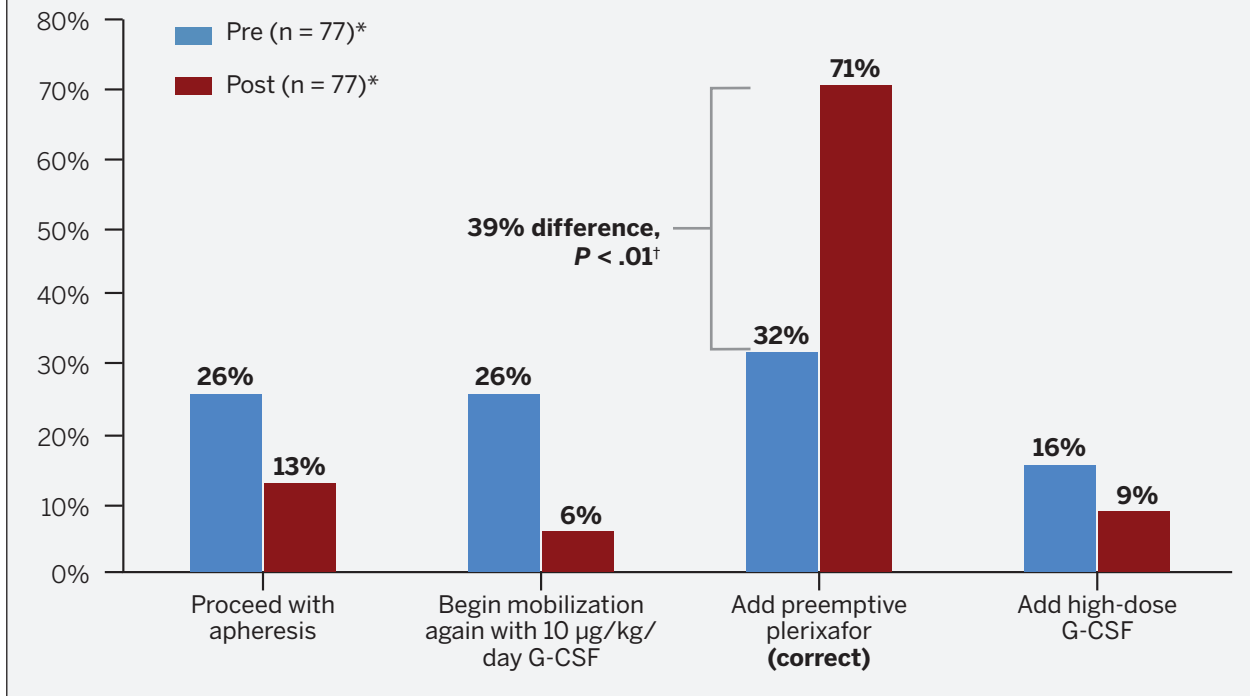
At 30-day follow-up, a statistically significant increase (*P* = .03) was observed in the proportion of respondents who indicated that their transplant center used an algorithm to optimize first-attempt stem cell mobilization and collection in patients who were undergoing AHSC transplantation.



## Conclusion: Did the In-Depth Practice Assessment Matter?

Relevance, interaction, and multi-facetedness are 3 characteristics associated with CME effectiveness, but the definition of these strategies and the effectiveness of associated tactics remain unclear.<sup>1</sup> The purpose of this paper was to introduce a practical tactic for increasing the relevancy of CME activities. The in-depth practice assessment consisted of interviews and follow-up surveys of target learners to clarify current practices, identify potential barriers to optimal care, and define the reasons for educational gaps. This appears to be a unique way to supplement issues that are identified via more traditional sources that inform needs assessments, such as published literature, e-mail surveys, and expert faculty input. In-depth practice assessments extend the evaluation of practice gaps into the content-development phase to refine the anticipated practice gaps in

**FIGURE 4.** SL is a 63-year-old woman with non-Hodgkin's lymphoma who is preparing for an AHSC transplantation. You have decided to start chemomobilization with an ICE regimen. After 4 days of mobilization, SL's PB CD34+ cell count is 17 cells/ $\mu$ L. According to recent guidelines, what is the next step you should take?



relation to actual practice experience of the target learners.

Overall, we found that a passive educational format (ie, annotated slide library) augmented with an in-depth practice assessment was able to meet participation goals for target learners and produce immediate and sustained learning gains in accordance with more interactive enduring formats. Although the generalizability of these results is limited in that identically formatted CME activities with and without an in-depth practice assessment were not directly compared, these results support further investigation into the usefulness of this tactic for increasing the relevance of a CME activity.

## References

- Moore DE Jr, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. *J Contin Educ Health Prof.* 2009;29(1):1-15.
- Marinopoulos SS, Dorman T, Ratanawongsa N, et al. Effectiveness of Continuing Medical Education. AHRQ Publication No. 07-E006. Rockville, MD: January 2007.
- Ruggiero JE, Robinson CO, Lutz Paynter N. Coordinated learning to improve evidence-based care: a model for continuing education for the new healthcare environment. [www.gene.com/assets/frontend/pdf/content/good/grants/](http://www.gene.com/assets/frontend/pdf/content/good/grants/)
- Genentech WhitePaper TELMS Coordinated Learning to Improve Evidence-based Care September-2015.pdf. Accessed September 1, 2016.
- Peabody JW, Luck J, Glassman P, Dresselhaus TR, Lee M. Comparison of vignettes, standardized patients, and chart abstraction: a prospective validation study of 3 methods for measuring quality. *JAMA.* 2000;283(13):1715-1722.
- Peabody JW, Luck J, Glassman P, et al. Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. *Ann Intern Med.* 2004;141(10):771-780.
- Dresselhaus TR, Peabody JW, Luck J, Bertenthal D. An evaluation of vignettes for predicting variation in the quality of preventive care. *J Gen Intern Med.* 2004;19(10):1013-1018.
- Overton GK, MacVicar R. Requesting a commitment to change: conditions that produce behavioral or attitudinal commitment. *J Contin Educ Health Prof.* 2008;28(2):60-66.
- Lowe M, Rappolt S, Jaglal S, MacDonald G. The role of reflection in implementing learning for continuing education into practice. *J Contin Educ Health Prof.* 2007;27(3):143-148.
- White MI, Grzybowski S, Broudo M. Commitment to change instrument enhances program planning, implementation, and evaluation. *J Contin Educ Health Prof.* 2004;24(3):153-162.
- Giralat S, Costa L, Schriber J, et al. Optimizing autologous stem cell mobilization strategies to improve patient outcomes: consensus guidelines and recommendations. *Biol Blood Marrow Transplant.* 2014;20(3):295-308.
- Wolf F M *Meta-Analysis: Quantitative Methods for Research Synthesis.* Beverly Hills, CA: Sage; 1986.