

# Building Educational Curricula to Maximize Outcomes in Dyslipidemia

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## Background and Objectives

Updated accreditation criteria from the Accreditation Council for Continuing Medical Education (ACCME) require continuing medical education (CME) providers to design educational interventions that will contribute to patient safety and practice improvement imperatives of the US health care system. A large portion of CME programs currently offered to physicians are episodic. However, research has shown that CME programs that are part of a system of continuous professional development are particularly effective at ensuring ongoing physician competence.<sup>1</sup> In addition, a comprehensive report issued by the Agency for Healthcare Research and Quality in 2007 reports that multiple interventions are more effective than single activities.<sup>2</sup>

Physicians' unmet learning needs provide the roadmap for CME curriculum design as well as a barometer for measuring impact. In 2006, Pri-Med conducted a broad national gap analysis using literature and third-party data, faculty input and proprietary research data in the area of cardiovascular (CV) disease. This effort demonstrated a need for education to enhance the ability of primary care physicians to assess cardiovascular risk conditions, such as dyslipidemia, and treat patients with this condition.

Approximately one-third of the US population has elevated lipids, which is a major risk factor for cardiovascular disease.<sup>3</sup> The updated National Cholesterol Education Program Adult Treatment Panel III (ATP III) guidelines are the standard of care in directing the management of patients with dyslipidemia. ATP III acknowledge the benefits of lipid-lowering therapy in high-risk patients, specifying a low-density lipoprotein cholesterol (LDL-C) goal of < 70 mg/dL in patients classified as "very high risk" (Grundny 2004). Despite this explicit guidance, however, physician adherence to coronary heart disease-related guidelines is both incomplete and highly variable,<sup>4</sup> illustrating a gap in physician practices relative to lipids management and primary and secondary prevention of cardiovascular disease.

To address the need demonstrated by these data and others, Pri-Med designed a multichannel curriculum, including live and online educational activities, to increase primary care physicians' competence and improve performance in the recognition and management of patients with dyslipidemia. To evaluate the impact of this multichannel curriculum, Pri-Med conducted a comprehensive outcomes study surrounding the live and online activities.

This poster will present the outcomes methodology, results, data interpretation, and lessons learned from this education initiative.

*Research demonstrates a need for education to enhance the ability of primary care physicians to assess cardiovascular risks and treat patients with dyslipidemia.*

## Methods

### Multichannel Curriculum Development

The live portion of the multichannel curriculum was a 75-minute case-based lecture conducted in numerous US cities in 2007.<sup>5</sup> The first learning objective for the live activity was related to assessment/diagnosis. The activity outlined that, at the end of the activity, participants should understand how to correctly risk-stratify patients into the 5 levels of cardiovascular risk highlighted in the National Cholesterol Education Program (NCEP) Guidelines and be able to set corresponding LDL-C goals. The second learning objective was related to treatment management. Participants should know how to correctly determine the degree to which each of the available medications lowers LDL-C and name 3 specific components of therapeutic lifestyle change (TLC).

Clinicians attending the live session were invited to participate in the online portion of the curriculum, which was an interactive case study on dyslipidemia. The learning objective for the case study was to describe at least 2 risk factors for recurrent stroke following a stroke or transient ischemic attack (TIA), and assess the role of lipid-lowering interventions in reducing the risk for recurrent events. The case study featured multiple-choice questions to allow the learner to make decisions on the diagnosis and management of dyslipidemia.

### Outcomes Methodology

The effectiveness of the education on clinical practice was assessed by measuring its impact on physicians' confidence, competence, performance and/or patient outcomes. To do so, a Web-based survey (referred to as an Outcomes survey) was distributed via e-mail to preregistrants 2 weeks prior to the educational activity. This survey was used to establish baseline measurements. A similar survey instrument – with a few additional areas of measurement – was distributed via e-mail to participants 6 weeks following the completion of the educational activity, yielding the post-education responses. All of these data were then coded and tabulated, and the posteducation responses were compared to the baseline measurement scores using appropriate statistical significance tests (eg, two-tailed t-tests).

As part of the survey development, Pri-Med utilized a question review process that included 3 professional levels of expertise: clinical editors, market research experts and an independent academic medical advisory board.

Each Pri-Med outcomes survey identified Pri-Med as the sponsor of the research. The respondents were provided a nominal honorarium for their participation. To ensure that the practitioners responding to the survey represented a relevant sample of the target population being evaluated, respondents were screened to be practicing clinicians who currently treat patients with dyslipidemia, and data were weighted to be representative of the demographic profile of the activity participants. Responses were de-identified to ensure clinician confidentiality.

To compare results of physicians who participated in episodic educational activities with outcomes of those who participated in the multichannel curriculum, physicians were classified within the data set as either "live + online," indicating that they both attended the live session and completed the online activity, or "live only," indicating that they only participated in the live sessions. These posteducation scores were then analyzed and compared to each other as well as to the baseline measurement.

## Results

### Respondents

In 2007, 1827 clinicians completed the initial, baseline Pri-Med survey. The number who completed the posteducation surveys was 1328.

Overall, the participants reported seeing an average number of 85 patients per week. Of these, 35% percent of the patients were reported to have dyslipidemia (or, approximately 30 patients with dyslipidemia per week).

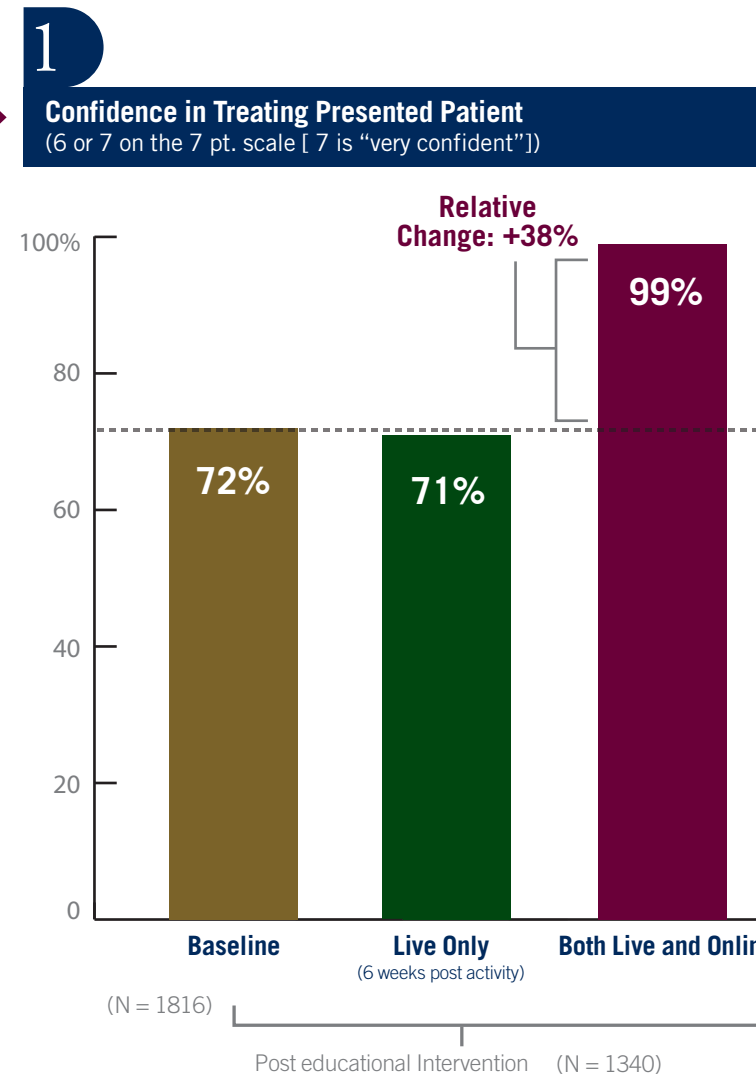
Note that for results based on a sample of this size, there is a 95% confidence that the results have a statistical precision of  $\pm 1.7\%$  of what they would be if the entire audience across cities had been surveyed. Alternately, there is a 95% probability that the "true" value in the population of interest is within the margin of error (< or = +/- 1.7%) observed in the survey results.

### Change in Clinician Confidence

A patient case scenario was used to assess clinician confidence before and after participating in the dyslipidemia education activities. Patient case vignettes are shown as a valid method to evaluate clinician behaviors.<sup>6</sup> The patient case vignette used to measure confidence in treatment in this example was as follows:

Patient: 78 y/o male nonsmoker.No known history of CVD or diabetes  
Presenting Complaint: HTN follow-up  
Past Medical History: HTN x 20 y  
Physical Exam: HT: 6'0"; WT 210; BP = 135/80 mm Hg; BMI 28.5; Waist Circumference 39"  
Labs Obtained at this current visit: TC = 212 mg/dL; TG = 172 mg/dL; HDL-C = 37 mg/dL; LDL-C = 141 mg/dL; FBG = 107mg/dL; TSH = normal  
Medications: HCTZ 25 mg/day

As figure 1 indicates, clinician confidence among physicians who participated in just the live sessions remained statistically even to baseline confidence levels. But the increase in confidence was substantial – 38 percent – among physicians who participated in both the live session and the online activity.

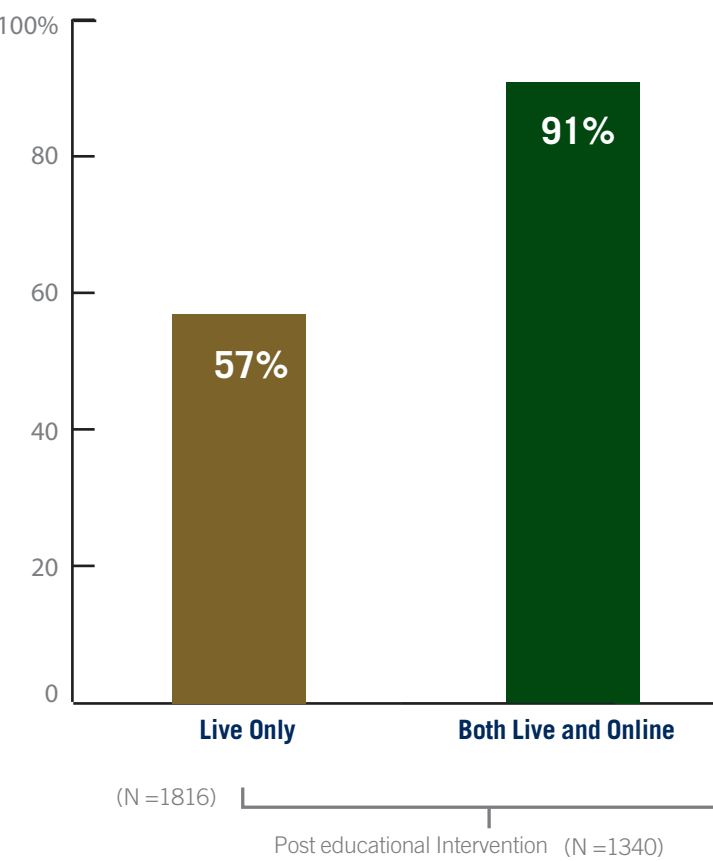


### Used Nearly All Information To Updated/Refine Patient Care Approach (6 or 7 on the 7 pt. scale [ 7 is "used ALL information"])

### Change in Patient Outcomes

To measure impact on patient health, clinicians were posed two questions after they participated in the dyslipidemia education. The metrics helped determine how much physicians integrated the knowledge gained into their practice to update or refine their patient care approach, and to what extent they implemented management strategies as a result of the education that improved the health outcomes of their patients with dyslipidemia.

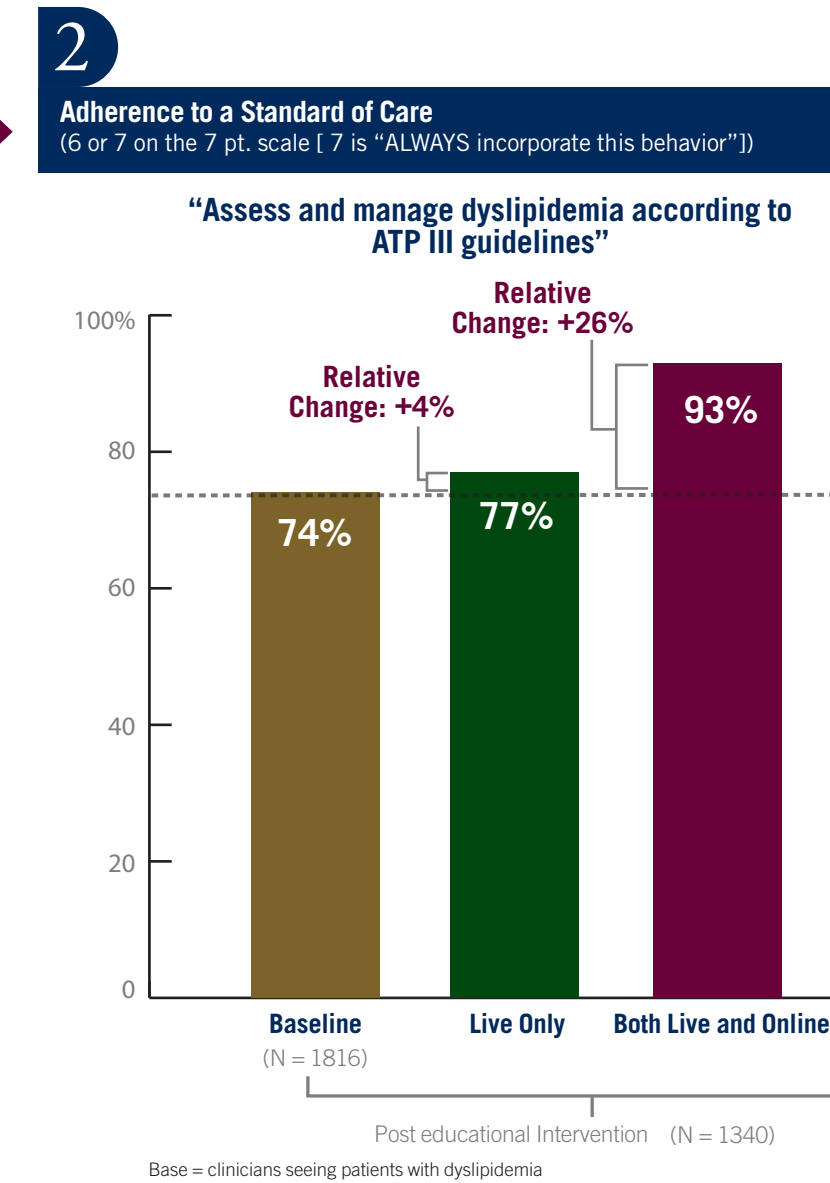
As figure 3 indicates, clinicians who participated in both live and online activities were far more likely to integrate the knowledge gained into their practice to update or refine their patient care approach than were clinicians who participated in a live session only (91 percent versus 57 percent respectively).



### Change in Clinician Performance

To measure change in performance after the dyslipidemia education, clinicians were asked how often they assess and manage dyslipidemia according to ATP III guidelines. ATP III guidelines were a key component of the curriculum content.

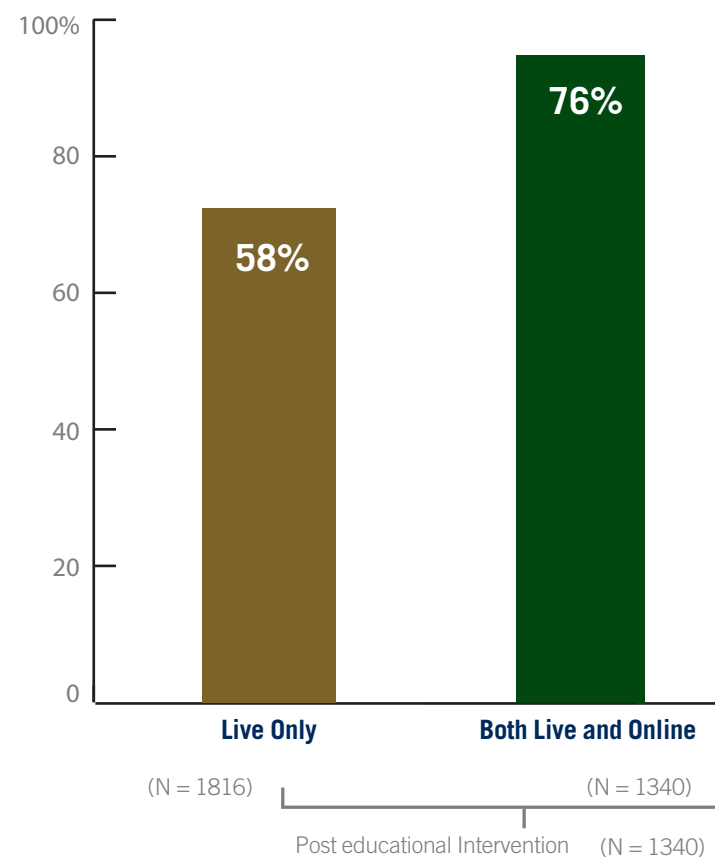
As Figure 2 indicates, over 90% of clinicians who participated in both the live education activity and the associated online activity reported adhering to the standard of care regularly or always. The increase in adherence was much greater from the established baseline level and from respondents who completed only the live activity.



### Have Implemented Management Strategies That Improve Patient Health Outcomes (6 or 7 on the 7 pt. scale [ 7 is 'strongly agree'])

### Change in Patient Outcomes

Figure 4 illustrates findings from a second metric that was used in the survey instrument to measure impact of the dyslipidemia curriculum on patient care. 76% of clinicians reported to have implemented management strategies that improve health outcomes, which represents a significant increase when compared against clinicians who participated in a live session only (58%).



## Discussion

In this poster, we have described the design, implementation and evaluation of a multichannel CME initiative that maximized participant confidence in treatment, and practice performance.

A critical aspect of designing effective multichannel curricula is linking the content of the various channels to reinforce learning objectives. In this case, the critical element that linked the live session to the online activity was the case study itself. The live sessions included discussions revolving around the case histories of several patients. The online portion focused on only 1 case history and it allowed the learner the opportunity for an in-depth or "deep-dive" analysis to make his or her own decisions about management of the case within a structured application. For instance, the online case study allowed physicians to determine which lab tests to order to refine the diagnosis, assess the risk factors, and assess the other comorbid conditions, manage the patient per the guidelines and adjust the treatment over a period of time (including follow-up visits). In each instance that a physician answered a question, he/she was given immediate feedback regarding an incorrect or suboptimal answer. The clinician was given the reasons why that choice was suboptimal, thereby linking the information from the live session to real-world medical practice.

Overall, the synchronization of content between the 2 channels of the curriculum (1) allowed the online program to reinforce the content presented in the live session, (2) provided physicians the opportunity for more in-depth analysis of the patients' needs, and (3) allowed physicians to test their knowledge via an iterative decision-making process.

Another key aspect of designing effective multichannel curricula is the application of adult learning principles. In this case, the combination live/online curriculum provided two different methods of learning, thereby offering repetition and appealing to different learning styles. In addition, the curriculum clearly takes into account the notion that adult learners are more interested in immediate, problem-centered approaches than in subject-centered ones, and that they value learning that reflects the demands of their everyday lives.<sup>8</sup>

We have also shown that a multichannel curriculum, designed using principles of adult learning theory, has a much greater impact on those measures than an episodic educational activity. The findings lend weight to previous research indicating that reinforcement is key for participants to enhance their knowledge over time and to increase the likelihood that the knowledge imparted will lead to positive outcomes in physician performance and clinical practice choices.<sup>1</sup>

Our findings also highlight the need to encourage physicians to actively seek out and engage in curriculum-based learning. One of the primary challenges we faced was lack of physician interest in participating in both the live and online educational sessions – a challenge that has been identified in other research. For example, a 2007 National CME Insights & Behaviors study found that while 80 percent of physicians surveyed said they are likely to participate in a multichannel CME curriculum, only 51 percent of physicians are actively seeking multichannel learning opportunities.<sup>7</sup> CME providers need to educate physicians about the benefits of curriculum-based learning. It is the CME provider's responsibility to help physicians identify CME curricula that meet personal learning needs.

## Future Directions

Based on our findings, it is clear that multichannel curricula will increase in significance and use by CME providers. However, providers of CME will also need to embrace an even broader view of CME and map curricula that address multiple areas of physician competency that routinely include maintenance of certification (MOC) and performance improvement initiatives.

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## Acknowledgements

An educational grant was provided by AstraZeneca in support of this curriculum.

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\*Markets Included in the Studies  
The live educational sessions were carried out in the following US cities: Long Beach, California; Dallas, Texas; Cleveland, Ohio; Denver, Colorado; East Rutherford, New Jersey; San Francisco, California; Twin Cities, Minnesota; Rochester, New York; Dearborn, Michigan; Rosemont, Illinois; Atlanta, Georgia; Cincinnati, Ohio; Melville, New York; Miami, Florida; Anaheim, California; Chicago, Illinois; Norfolk, Virginia; Sacramento, California; Tampa, Florida; Charlotte, North Carolina; Providence, Rhode Island; San Antonio, Texas; Ventura, California; Boston, Massachusetts; Seattle, Washington; San Diego, California; Hartford, Connecticut; Durham, North Carolina; Orlando, Florida; New Orleans, Louisiana; Los Angeles, California; Philadelphia, Pennsylvania; Princeton, New Jersey; Washington, DC; Stamford, Connecticut; Portland, Oregon; Indianapolis, Indiana; Baltimore, Maryland; San Jose, California; St. Louis, Missouri; Las Vegas, Nevada; Jacksonville, Florida.