

**Needs Assessment of Healthcare Provider Performance Gaps
In the Diagnosis and Treatment of Mixed Dyslipidemia**

Outcomes, Inc.

**Contact: Mazi Abdolrasulnia PhD
300 Riverchase Parkway East
Birmingham, Alabama 35205
205-259-1500
mazi@ceoutcomes.com**

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Abstract

A needs assessment was conducted to identify the primary educational needs and barriers facing community-based cardiologists, primary care physicians, nurse practitioners and physician assistants, and endocrinologists in the diagnosis and management of patients with mixed dyslipidemia. Case vignette surveys were designed to assess current practice patterns relative to the latest evidence or guidelines in diagnosing and managing mixed dyslipidemia, as well as to assess perceptions, attitudes, and preferences. Surveys were implemented between July 26 and August 15, 2007, and responses were obtained from community-based endocrinologists (n = 145), cardiologists (n = 149), general internists and family physicians (n = 150), and nurse practitioners and physician assistants (n = 146). Survey data was collected, entered, and analyzed using the Statistical Package for the Social Sciences. Descriptive data, including means and standard deviations were calculated. Results of case vignette questions demonstrated that cardiologists and endocrinologists were more familiar than primary care physicians and nurse practitioners/physicians assistants with guidelines and relevant evidence in the management of mixed dyslipidemia, but all had difficulty applying the guidelines in practice. PCPs and NP/PAs are only somewhat familiar with the relevant guidelines and evidence to manage mixed dyslipidemia and have difficulty applying the guidelines in practice. Diagnosing and treating mixed dyslipidemia presents complex issues for healthcare providers both in diagnosis and treatment, and special challenges in high risk populations. Case-based examples may be effective in teaching healthcare professionals how to calculate residual risk in various patient types, identify and treat high-risk patients, and model optimal treatment strategies. Collaboration with the American Heart Association and the American College of Cardiology may increase adoption of guidelines.

Key Words: cardiovascular risk; mixed dyslipidemia; diabetes

Project Description and Target Audience

Gaps in the quality of health care delivered in the United States have been consistently noted over the past decade. Recent data suggest that adults in the U.S. receive recommended care only half the time¹. Progress has been slow in moving toward a national effort, called for by the Institute of Medicine five years ago, to improve safety and quality of care in the U.S. healthcare system². These gaps place increasing demands on continuing education for healthcare professionals. Continuing medical education (CME) has been associated with positive effects on physician practice and patient health outcomes³; however, data documenting specific knowledge and performance gaps and the utilization of effective CME methods have not been consistently researched.

¹ McGlynn EA, et al. The Quality of Health Care Delivered to Adults in the United States. *N Engl J Med* 2003; 348: 2635-4.

² Leape LL, Berwick DM. Five years after To Err is Human: What have we learned? *JAMA* 2005; 293: 2384-90.

³ Mazmanian PE, Davis DA. Continuing medical education and the physician as a learner: guide to the evidence. *JAMA* 2002; 288: 1057-60.

Furthermore, regulatory and compliance demands call for the identification of true educational needs to differentiate educational needs from marketing agendas. The identification of educational needs also provides a baseline measurement in order to measure whether CME programs effectively address identified gaps in clinical care.

The term dyslipidemia commonly refers to a group of lipid abnormalities characterized by high triglycerides, high LDL-Cholesterol, or low HDL cholesterol. In epidemiologic studies, each of these abnormalities has been associated with increased rates of coronary heart disease. Findings from the 1999-2002 NHANES study found that 17% of adults have a total cholesterol level of at least 240 mg/dL – a level that is considered “high” by NCEP criteria (NCEP).⁴ During a 40-year period, total mean total cholesterol levels have steadily decreased in the United States. This decline is due primarily to a decline in LDL-Cholesterol, since no significant changes were noted in mean HDL cholesterol levels, and there was a trend toward higher triglyceride levels observed during this period. The decline in total and LDL-Cholesterol has occurred primarily among older men and women, and is largely attributed to increased use of lipid-lowering medications.

Given the modern movements of quality of care and patient safety initiated by the Institute of Medicine (IOM), as well as pressure for reform in continuing education, Outcomes, Inc. was selected as an independent third-party to implement a comprehensive educational assessment. This project focused on the knowledge, learning styles, and performance levels of assessment to identify the primary educational needs and barriers facing community-based cardiologists, primary care physicians, nurse practitioners and physician assistants, and endocrinologists in the management of patients with dyslipidemia.

Methodology

Three parallel case vignette surveys were developed in order to investigate practice patterns of US practicing cardiologists, endocrinologists, PCPs, and NP/PAs in the management of high-risk patients with dyslipidemia. A review of the scientific literature was first conducted in order to examine gaps between NCEP ATP III guidelines, NCEP Update recommendations and actual clinical practice. As a second step, focus groups were conducted with practicing physicians from each specialty to identify issues that are most challenging in practice in managing high-risk patients with dyslipidemia. Based on the information from the literature and focus groups, a series of dyslipidemia-based case vignettes were created each with multiple choice questions that examined recognition of residual risk, knowledge of the guidelines, and treatment choices. In order to determine validity, all cases and questions were reviewed by experts from each targeted specialty group. Case vignettes have gained considerable support for their value in predicting physician practice patterns. Results from recent research demonstrate that case vignettes (as compared to chart review and standardized patients) are a valid and comprehensive method to measure a physician’s process of care in actual clinical practice.^{5,6,7} Case vignettes are also more cost-effective and less invasive than other means of measurement.

⁴ Carroll, MD et al.: Trends in serum lipids and lipoproteins of adults, 1960-2002. *JAMA* 2005 294(14):1773-81.

⁵ Peabody, JW, et al.: Comparison of vignettes, standardized patients, and chart abstraction: A prospective validation study of 3 methods for measuring quality. *JAMA* 2000;283:1715-22

⁶ Peabody, JW., et al.: Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. *Ann Intern Med.* 2004 Nov 16;141(10):771-80.

⁷ Luck J, Peabody JW, and Lewis BL: An automated scoring algorithm for computerized clinical vignettes: evaluating physician performance against explicit quality criteria. *Int J Med Inform.* 2006; 75(10-11): p. 701-7.

Between July 26 and August 15, 2007 surveys were distributed by e-mail and fax to a random sample of US practicing cardiologists, endocrinologists, and primary care physicians identified from the American Medical Association (AMA) list of U.S. physicians. Nurse practitioners' and physician assistants' names were identified by mailing and fax lists for these groups. Surveys were distributed by email and by fax. Survey responses were elicited until at least 140 usable responses were received. Non-responders were replaced from the overall sample after two contacts have been made.

Demographics were compared with those of the American Medical Association for U.S. endocrinologists, cardiologists, general internists and family physicians were compared to those of the specialty as characterized by the AMA using t-tests and Chi square tests; no significant differences were found between the respondent group and the overall AMA data by specialty. Survey data was collected, entered, and analyzed using SPSS 16.0. Descriptive data, including means and standard deviations were calculated. Because of space constraints, only mean percentages are reported here.

Results

	Cardiologists (n=149)	Primary Care (n=150)	Endocrinologists (n=145)	NP/PA (n=146)
Years in practice (mean)	18.5	16.87	16.17	12
Patients with dyslipidemia seen per week (mean)	69	52	55	38
Hours of CME participate each year (mean)	64	55	58	48
Practice type				
Private	93%	90.5%	87.4%	87.4%
Hospital	2%	4.1%	5.9%	11.1%
Academic	5%	5.4%	6.7%	1.5%
Hours per week searching for medical information online	3.4	4.04	3.82	3
Would most likely participate in the following CME formats				
Live	22.8%	22.3%	27.0%	21.4%
Online	41.2%	37.6%	28.8%	23.2%
Handheld/Podcast	8.1%	6.1%	8.1%	8.5%
Print	21.5%	16.6%	18.7%	36.1%
Audio/DVD	12.8%	10.9%	13.0%	16.2%

A summary of the results from physician responses to case vignettes follows.

Key Gap: Cardiologists and Endocrinologists are familiar with the relevant guidelines but are not applying the guidelines in practice

- 74% of cardiologists did not recognize HDL-C as the largest contributor in reducing CV risk (the majority focused on decreasing LDL-C levels), yet 93% agreed that HDL-C is an independent risk factor
- 47% of endocrinologists did not recognize increases in HDL-C as the largest contributor in reducing CV risk, yet 90% agreed that HDL-C is an independent risk factor
- Only 7% of cardiologists could actually calculate the residual risk in a patient at LDL-C goal, yet 85% stated they were familiar with treating residual risk
- Only 5% of endocrinologists recognized TG level and waist circumference to be the best predictors of premature CAD; 63% considered LDL-C level and waist circumference the best predictors
- 51% of cardiologist did not set the appropriate HDL-C target goal in a female patient with low HDL-C levels, elevated TGs and LDL-C at goal, yet 83% of cardiologists were familiar with the NCEP ATP III guidelines for TGs and HDL-C
- 64% of cardiologists indicated they would not treat with combination statin and niacin in a mixed dyslipidemia patient.
- 80% of cardiologists and 70% of endocrinologists indicated they would not consider combination therapy as initial choice in a patient with atherogenic dyslipidemia

Key Gap: PCPs and NP/PAs are only somewhat familiar with the relevant guidelines and evidence to manage mixed dyslipidemia and have difficulty applying the guidelines in practice

- Only 65% of PCPs and 50% of NP/PAs were familiar with the NCEP ATP-III guidelines for TGs and HDL-C
- 92% of PCPs and 81% NP/PAs agree that HDL-C is an independent risk factor, yet 25% and 21% respectively did not recognize increases in HDL-C as the largest contributor in reducing CV risk; instead 61% PCPs and 52% of NP/PA focused on reducing LDL-C levels
- 80% of PCPs and 54% of NP/PAs were familiar with residual risk in patients at LDL-C goal, yet 97% in both groups underestimated the residual risk in a patient at LDL-C goal
- 65% of PCPs and 50% of NP/PAs stated they were familiar with the guidelines for TGs and HDL-C, yet 49% of PCPs and 63% of NP/PAs did not set the appropriate HDL-C target goal in a female patient with low HDL-C levels, elevated TGs and LDL-C at goal
- 64% of PCPs and 54% of NP/PAs did not choose the correct treatment option in a diabetic patient with elevated TG, low HDL-C, and high LDL-C
- 75% of PCPs and 80% of NP/PAs would not consider combination therapy as an initial choice in patients with atherogenic dyslipidemia

Implications for Education

1. Diagnosing and treating mixed dyslipidemia presents complex issues for healthcare providers both in diagnosis and treatment and special challenges in high risk populations.
2. Multiple strategies may be needed to relay the efficacy of treatment options for mixed dyslipidemia— e.g. trial information, guidelines and local centers of excellence where individuals can share real life successes regarding efficacy
3. Case-based examples may be effective in teaching healthcare professionals how to:
 - calculate residual risk in various patient types
 - identify and treat high-risk patients (e.g. women, African-American, diabetic patients)
 - model optimal treatment strategies.
4. Live educational sessions with local opinion leaders may provide strategies community based physicians can implement to improve patient adherence.

5. Collaboration with the American Heart Association and the American College of Cardiology may increase adoption of guidelines.
6. Educational programming should be designed to reach physicians in the areas of greatest need related to mortality from cardiovascular disease.