

**Evaluation of Educational Initiative:
*The Link Between Erectile Dysfunction
and Cardiovascular Disease, Diabetes and Depression***

**Quadrant Medical Education
in collaboration with
The Annenberg Center for Health Sciences
and
The Sexual Medicine Society of North America**

Submitted by:

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Abstract

Background

The educational initiative on Men’s Sexual Health was developed to raise physician awareness as it relates to identifying, evaluating and managing male’s sexual dysfunction, specifically erectile dysfunction (ED). This need was substantiated based on literature research, data from the Sexual Medicine Society of North America (SMSNA), and cumulative results from activities conducted by the Annenberg Center, Epocrates and Outcomes Inc. The grant’s editorial content, targeted to primary care physicians and urologist, focused on screening, assessment, treatment and management of ED. In a collaborative effort, Quadrant Medical Education (QME), the Sexual Medicine Society of North America (SMSNA), the Annenberg Center for Health Sciences at Eisenhower (Annenberg), Epocrates, and Outcomes Inc., proposed development of a multi-tiered, multi-media clinical education initiative on Men’s Sexual Health. This initiative reached 140,000 primary care physicians (PCPs) and 10,000 urologists.

The “*Men’s Sexual Health Consult Collection*”, provided 3 platforms for professional education and assessment including: print, web, and PDA-based formats. All of these materials were made available on-line on the SMSNA website, www.sexhealthmatters.org. This information was also adapted into half-credit hour modules for delivery on Epocrates and patient handouts.

Method

A case vignette survey was developed and distributed to program participants and a similar group of non-participants from each activity. Chi-square analyses were performed and an effect size calculated.

Results

Approximately 735 physicians received credit in a 4 month period. Physicians participating in the journal supplement had been in practice for 18 years, and approximately 16% of their patients have erectile dysfunction. Participants in the handheld activity had been in practice 13 years and approximately 17% of their patients have erectile dysfunction.

Compared to non-participants, participants were more likely to recognize that a patient with ED have a significantly greater risk of having a cardiovascular event than a patient without ED (61% vs. 34%; $p < .001$), patient’s ED is a strong marker for diabetes (37% vs. 9%; $p < .001$) and that the increased risk of nonarteritic anterior ischemic neuropathy (NAION) with PDE-5 inhibitor use is only present in patients who have already experienced NAION in one eye (38% to 27%).

Implications for Future Education

Despite the results from this program in the improved knowledge and skills of physicians in managing ED patients, there continues to be significant gaps in knowledge related to screening for ED in patients who present with cardiovascular risk, diabetes, or depression, knowing and appropriately ordering laboratory tests for men who present with ED in order to screen for abnormal blood glucose and lipids and understanding the link between increased risk of nonarteritic anterior ischemic neuropathy (NAION) with the use of PDE-5 inhibitors in patients who have already experienced NAION in one eye. Future programs should be developed to address these existing gaps in knowledge and skills.

Key words: Erectile dysfunction, diabetes, cardiovascular disease, depression, primary care

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Project Description

Quadrant Medical Education, The Annenberg Center for Health Sciences, and The Sexual Medicine Society of North American collaborated on the educational initiative entitled “Men’s Sexual Health Consult Collection: The Link Between Erectile Dysfunction, Cardiovascular Disease, Diabetes, and Depression” supported by an educational grant from Pfizer, Inc. The program was presented as a CME journal supplement, as well as three Epocrates Mobile CME activities.

The CME journal supplement was distributed in the November, 2006. The three Epocrates Mobile CME activities: “Medical Management of Erectile Dysfunction With PDE-5 Inhibitors,” “The Role of Lifestyle Modification on Erectile Dysfunction,” and “Erectile Dysfunction: Cardiovascular Disease and Diabetes Mellitus Links” were launched in late December 2006.

Target Audience and Methods

Effectiveness was measured using a case vignette survey designed to evaluate the evidence-based diagnostic and therapeutic choices of program participants at least 30 days following program participation. A control group of similar physicians who did not participate in the educational program (non-participants) was also surveyed in order to determine differences in practice choices associated with program participation. Case vignettes have been shown to be effective in assessing physician practice patterns.^{i,ii}

The educational activities were intended for urologists and primary care physicians. As of April 10, 2007, there were 735 U.S. physicians who sought credit for the supplement, “Men’s Sexual Health Consult Collection: The Link Between Erectile Dysfunction, Cardiovascular Disease, Diabetes, and Depression.” On average, participants in this educational activity have been in practice for 18 years, and approximately 16% of their patients have erectile dysfunction.

Between December 21, 2006 and April 3, 2007, there were 3,950 clinicians that read at least one of the Epocrates MobileCME modules. A total of 2,717 clinicians earned CME credit from at least one of the MobileCME modules. Of those clinicians who participated in the modules, 55% were physicians, 35% were other clinicians (NP, PA, RN, RPh, etc.), and 10% were medical students. The survey focuses on the responses of 326 U.S. physicians that earned CME credit from all three Epocrates MobileCME modules. On average, the participants have been in practice for almost 13 years and approximately 17% of their patients have erectile dysfunction.

Patient Impact

At least 11,393 patients with erectile dysfunction¹ seen weekly by the 735 healthcare providers² who participated in “Men’s Sexual Health Consult Collection” are 35% more likely³ to receive evidence-based care related to the management of erectile dysfunction than patients seen by healthcare providers who did not participate in the activity.

Specifically, participants were more likely than non-participants to:

Recognize the complications of ED in relation to comorbidities including cardiovascular disease, diabetes, obesity, smoking cessation, and depressive disorders

Recognize the importance of controlling glucose levels to the effectiveness of PDE-5 inhibitors in patients with diabetes

Recognize smoking as a risk factor for ED

Switch patients with mild depression to an appropriate anti-depressant to reduce likelihood of drug-induced ED

Key Findings

Clinical Decision Making

In a patient with coronary artery disease (CAD) who presents with erectile dysfunction (ED), participants were significantly more likely than non-participants to:

Recognize that since this patient has ED, he has a *significantly* greater risk of having a cardiovascular event than a patient without ED (61% vs. 34%; $p < .001$)

- Overall, participants were more likely to recognize that this patient has greater risk than a patient without ED (88% vs. 63%)

In a patient with ED, participants were more likely than non-participants to:

Recognize that this patient’s ED is a strong marker for diabetes (37% vs. 9%; $p < .001$)

- Overall, participants were more likely to recognize that ED was a marker for diabetes in this patient (84% vs. 65%)

Recognize that if this patient developed diabetes, a PDE-5 inhibitor for treatment of ED would be more effective if glucose levels are well-controlled (85% vs. 79%)

In a patient with CAD who smokes and has ED, participants were more likely than non-participants to:

Recognize that smoking is a risk factor for ED and that smoking cessation may help restore erectile function (86% vs. 77%)

In a patient with ED and mild depression who is using fluoxetine, participants were more likely than non-participants to:

¹ The number of patients seen weekly with the problem addressed by the CME activity.

² The number of healthcare providers (MDs, DOs, NPs, and PAs) who participated in this program.

³ The percent of the non-overlap difference between participants and non-participants in evidence-based clinical diagnostic and therapeutic choices made when presented with a series of clinical vignettes.

Switch this patient to bupropion in order to help improve sexual function (78% vs. 66%)

When analyzing only primary care physician responses, 89% vs. 81% would switch this patient to bupropion in order to help improve sexual function

In a patient with ED who is concerned about effects of PDE-5 inhibitors on vision, participants were equally likely as non-participants to:

Recognize the increased risk of nonarteritic anterior ischemic neuropathy (NAION) with PDE-5 inhibitor use (84% each), but participants were more likely to recognize that the risk is only present in patients who have already experienced NAION in one eye (38% to 27%)

Strategies Used with ED Patients

Providing counseling for the patient and patient's sexual partner was identified as the strategy most commonly used with ED patients among physician respondents.

Providing printed educational materials about ED was the second most common strategy.

Barriers to Optimal Treatment

Patient reluctance to discuss sexual concerns was identified as the most significant barrier to the optimal management of ED by both participants and non-participants. *Comorbid conditions* was also identified as a significant barrier, but was indicated as more important by non-participants.

Confidence in Being Up-to-Date

Participants in "Men's Sexual Health Consult Collection" reported significantly higher confidence in being up-to-date in the management of erectile dysfunction than non-participants.

Focus of Future CME

Future educational activities should continue to focus on:

- Screening for ED in patients who present with cardiovascular risk, diabetes, or depression
- Appropriate laboratory tests to order for men who present with ED in order to screen for abnormal blood glucose and lipids
- Increased risk of nonarteritic anterior ischemic neuropathy (NAION) with the use of PDE-5 inhibitors in patients who have already experienced NAION in one eye

Approximately 84% of participants recognized the increased risk of NAION with PDE-5 inhibitor use, but only 38% of participants recognized that the risk is only present in patients who have already experienced NAION in one eye

ⁱPeabody, John W., 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

ⁱⁱPeabody, John W., 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.