Breast Cancer Screening

A Curious Problem in Primary Care

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The results reported in the article by Warner and her colleagues, "Physician Interest in Breast Cancer Screening Training," in this month's issue of the Journal[1] reveal a curious problem in primary care. They show us that family physicians in Vermont use breast-screening methods with decreasing frequency as their faith in the effectiveness of the procedure increases. The study evaluates physicians' opinions regarding the effectiveness of clinical breast examination, breast self-examination, and mammography. In comparing the three procedures, the highest proportion (55%) of this statewide sample of family physicians rate mammography "very effective," but the lowest proportion (12%) report its annual use in three fourths of the women aged 50 years and older.

This curious pattern of implementation defies simple explanations. It does not appear that Vermont physicians are atypical or that physicians simply forget to do the tests. National studies of women report findings consistent with the experience reported by physicians in Vermont. Results from the 1987 National Health Interview Survey[2] show that 17% of women aged 40 years and older had a mammogram in the year prior to the questionnaire, and 44% had a breast physical examination. The randomized trial of computerized reminders by Chambers and his colleagues, also reported in this month's issue of the Journal,[3] shows that even with an automated system for physicians, the rate of meeting mammography guidelines remains low.

It might be that it is simply easier to do a physical examination than it is to order a mammogram. Such an explanation, however, is inconsistent with results from a study by Woo et al, which demonstrated that physicians meet screening guidelines more readily if they can order the test than if the guidelines involve something they can perform in their office.[4] So there is a curious phenomenon here: prevention that works is not practiced. The question is, why?

Work by Green and colleagues[5] provides a conceptual framework for analyzing this question more closely. They propose three categories of behavioral influence: predisposing, enabling, and reinforcing factors. *Predisposing* factors include the physician's values, beliefs, attitudes, and perceptions. *Enabling* factors refer to time, facilities, materials, and reminder systems that assist in promoting the behavior. *Reinforcing* factors include reimbursement, community standards, and feedback from practitioners, patients, and staff that support the performance of the behavior.

Looking first at predisposing factors, it is clear that primary care physicians value prevention. It was identified as a fundamental part of family medicine during the creation of the specialty and has been similarly associated with the primary care physician's role by internists, family physicians, and general practitioners.[6,7] So values do not seem to be the problem; in fact, people interested in the wider use of mammography have focused more on beliefs about efficacy.[8,9]

The article by Warner et al on physician interest demonstrates that physicians in Vermont have received at least part of the message. They clearly believe that mammography is the most effective procedure. They have less faith in breast physical examinations than they do in breast self-examination (BSE), however, and this finding is inconsistent with what is known about these procedures. In addition, the level of faith in mammography may be lower than the literature would suggest is indicated. In an exhaustive review for the US Preventive Services Task Force, O'Malley and Fletcher[10] conclude that there is inadequate information to advocate BSE as a screening test. In contrast, clinical breast examination and mammography together were the screening techniques used in the classic Health Insurance Plan randomized trial.[11] Results from that trial have now been analyzed to 18 years of follow-up and show a persistent reduction in mortality from breast cancer among women screened a minimum of 14 years earlier.[12] Breast physical examination alone detected the cancers in 41% of women aged 50 years and older, and 61% of the cancers in women aged 40 through 49 years.[10] With improvements in mammography by the late 1970s, breast physical examinations alone still detected 8% of the cancers in the Breast Cancer Detection and Demonstration Project.[13] These studies suggest that the breast physical examination should remain a part of the screening ap-

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proach, and most groups making national recommendations agree.[14–16]

Physicians in Vermont seem eager to learn about the latest information on screening, but even with a complete understanding of the strengths and limitations of screening procedures, the evidence suggests that behavior might not change. In the study of physician interest in breast cancer screening by Warner et al, use of mammography remained low even though it was clearly recognized as an effective procedure. The conceptual framework by Green et al[5] suggests that attitudes and perceptions as well as beliefs must be examined. Measurement of these factors is currently underway in several locations across the United States involved in a National Cancer Institute evaluation of how to promote the use of mammography. Their findings may identify attitudes and perceptions about mammography that add to our understanding of why it is not ordered.

If a physician is of the mind to use mammography, then enabling factors such as insurance coverage, the availability of low-cost mammograms, and the use of reminder systems may help accomplish the task. The impact of changes in insurance coverage of mammography and the availability of low-cost examinations have not been examined. The impact of the reminder system alone, while statistically significant, was not impressive when considered from a population basis. Only 19% of women met the American Cancer Society (ACS) guidelines in the study group.

One explanation for this result may be that beliefs about these guidelines were not addressed as part of the intervention. ACS guidelines cannot be construed as a "gold standard." Controversy exists about the advisability of mammography for women younger than 50 years, and the US Preventive Services Task Force does not recommend its use in this age group despite ACS recommendations to the contrary.[13,17] Green et al point out that there is a need to address behavioral factors in an ordered way. Predisposing factors such as beliefs about the appropriate recommendations for mammography need to be addressed before trying to use interventions to enable a behavior. Whether such an approach would have altered the magnitude of the impact of the reminder system study reported by Chambers et al in this issue cannot be determined.

Finally, reinforcing factors have been almost completely ignored when consideration has been given to ways in which screening behaviors can be changed. In particular, some thought must be given to both positive and negative reinforcements for physicians. The national trend is certainly toward a community standard that reinforces physician's ordering of mammography. Such reinforcement, however, is somewhat vague and distant. More important may be the satisfaction of finding an early cancer. More problematic is the ambiguity introduced by indeterminate findings that leave the primary physician with the responsibility of tracking women to obtain additional views, or 6-month follow-up examinations. Such a responsibility may be a disincentive to ordering such examinations in an otherwise healthy woman. This possibility needs closer scrutiny.

In summary, breast cancer screening is a curious test of our commitment to prevention. A conceptual framework for analyzing this problem has been provided by Green et al. Review of the problem within their framework reveals that there is much to do and learn in this area of prevention. It is in our interests as physicians and primary care providers to be involved in better understanding the problem. If prevention is fundamental to family medicine, then it behooves us to examine why it is that we are reluctant to implement one preventive technique that clearly works.

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