

## Following Up Abnormal Breast Cancer Screening Results: Lessons for Primary Care Clinicians

Good primary care now includes routine screening for breast cancer among appropriate age-groups of women patients. Virtually all expert groups recommend breast cancer screening. During the past several decades, these recommendations have been translated into increasingly higher percentages of women getting breast cancer screening.<sup>1-3</sup> By 1995, a national study found that 70% of women aged 40 years and older reported receiving a mammogram in the previous 2 years.<sup>3</sup> It is likely that the increasing amount of breast cancer screening in the United States is one reason for the 6% drop in breast cancer mortality between 1990 and 1994.<sup>4</sup>

The extent of breast cancer screening a woman receives can vary according to the specialty of her physician. Finison and colleagues<sup>5</sup> looked at Medicare Part B claims during 1993 and 1994 in New England and found that 55% of women aged 65 to 69 years received mammography in the previous 2 years: 78% of women cared for by gynecologists, 67% by internists, 58% by family physicians, 47% by general practitioners, and 41% by other specialists. Although primary care clinicians are incorporating routine breast cancer screening more and more, these data suggest there is still room for improvement, at least among older women.

With breast cancer screening rates on the rise, attention is turning to follow-up of abnormalities detected during screening, the focus of the study by Schootman et al in this issue of *The Journal*.<sup>6</sup> Guidelines for follow-up were issued in 1995 by a joint committee of The Society of Surgical Oncology, the Commission on Cancer of the American College of Surgeons, and the Centers for Disease Control and Prevention,<sup>7</sup> and more recently by a Canadian consensus effort of the Steering Committee on Clinical Practice Guidelines for the Care and Treatment of Breast Cancer.<sup>8</sup>

Determining how often the screening test is abnormal is complicated by the fact that more than

one kind of screening test is routinely used for breast cancer. Often all three common tests – mammography, clinical breast examination by the health care provider, and breast self-examination by the patient – are being used in the same patient. The frequency of abnormal test results (results requiring nonroutine follow-up) is better documented for mammography than for clinical breast examination and breast self-examination. In a national study of mammography centers, 11% of mammograms required follow-up;<sup>9</sup> others<sup>10,11</sup> found that approximately 6% to 7% of screening mammograms had abnormal findings. For clinical breast examinations, 3.7% (409 of 10,905 examinations) had findings recorded as abnormal in 2400 women observed for 10 years.<sup>11</sup>

In the current study Schootman and colleagues<sup>6</sup> found that 11% (351 of 3198) of clinical breast examinations and mammograms combined were recorded as abnormal in the Iowa Breast and Cervical Cancer Early Detection Program. How frequently breast self-examination produces an abnormal result is not known. In summary, breast cancer screening will generate follow-up clinical activities in about 10% to 15% of patients screened.

Regardless of the means of finding an abnormality, screening will not be effective without adequate follow-up diagnostic studies. Depending on the kind of abnormality and which test is used, adequate follow-up might include a repeat examination, surgical consultation, sonography, biopsy, or fine-needle aspiration.<sup>6-8</sup> In the Iowa study, 96% of the 351 women with an abnormality received some follow-up care. But using the guidelines of one expert group, the authors found that follow-up procedures were inadequate for 50 women (14%). Table 2 and the Figure 1 in the article make it clear that more than one half of the episodes of inadequate follow-up involved abnormal findings on a clinical breast examination when findings on the mammogram were normal. The authors sought other characteristics associated with inadequate follow-up and on univariate analysis found that women younger than 50 years and women who had a symptom of a breast lump were more likely to receive inadequate follow-up. After adjustment for

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possible confounders, having an abnormal clinical breast examination finding in the face of a normal mammogram was the only characteristic that reached statistical significance. Living in a rural setting and being symptomatic with a breast lump just missed statistical significance.

As the authors point out, this study is based on relatively few cases. Furthermore, the authors did not give specific details for the 50 "inadequate" cases. Did the guidelines make sense in these individual cases, or were there important issues not captured by the guidelines? Finally, I found the algorithms in the guidelines sometimes potentially overlapping. For example, algorithm 2 (an abnormal finding on clinical breast examination suggestive of cancer and a mammogram either with a suspect abnormality or one highly suggestive of malignancy) could include some cases from algorithm 4 (a clinical breast examination with any result and a mammogram highly suggestive of malignancy). These kinds of problems indicate why the word guideline is appropriate instead of rule.

Despite these problems, careful analysis of clinical practice as Schootman et al<sup>6</sup> have done can help clinicians recognize potentially important areas where practice might be improved. In this case, two such clinical areas are the conduct of clinical breast examinations and the management of women with breast complaints.

It might be that clinicians do not always follow up abnormal clinical breast examination findings in the face of a normal mammogram because they have less confidence in clinical breast examination than mammography. The research literature supports the lack of confidence. A recent review of clinical breast examination<sup>12</sup> found that the pooled sensitivity of clinical breast examinations in several studies of breast cancer screening was about 54%, with a specificity of about 94%. This is in contrast to mammography, which had a sensitivity of 76% to 88% in 50- to 59-year-old women in randomized controlled trials of breast cancer screening<sup>13</sup> and a specificity of 89% to 93%.<sup>9,11</sup> Clinicians might therefore assume that they should disregard their findings on clinical breast examination if the mammogram is read as normal. Even though mammography is more sensitive than clinical breast examination, however, the above studies of its sensitivity show it is not perfect and can miss palpable lesions. This is especially true in younger women, who are more likely to have dense breasts, obscur-

ing the lesion.<sup>13</sup> Barton et al<sup>12</sup> summarized the results of all studies evaluating the effectiveness of using both mammography and clinical breast examination for screening, and in every study clinical breast examination detected cancer missed on mammography. The take-home lesson is that a worrisome palpable breast lesion should lead to further diagnostic studies regardless of mammography results.

One reason for low clinical breast examination sensitivity and specificity is the lack of a standardized examination technique. All too often, each clinician has his or her own method of conducting the examination.<sup>14</sup> Standardized, thorough clinical breast examinations lead to improved accuracy.<sup>12</sup> Primary care clinicians should work to improve their clinical breast examination skills. In one study, 80% of physicians reported they felt a need to improve their abilities in breast lump detection.<sup>14</sup>

A subtler problem is the classification of an abnormality found on clinical breast examination. Mammographers have developed a system to grade the severity of abnormalities they find on mammograms. The five-category BI-RADS system of the American College of Radiology<sup>15</sup> has been widely adopted (and was used in the study of Schootman et al<sup>6</sup>). In contrast, there is no system for grading the severity of abnormalities noted on clinical breast examinations; Schootman et al<sup>6</sup> used two categories, normal (not suspicious for cancer) and abnormal (suspicious for cancer). This grading system might be too crude to capture the clinical shades of abnormal. Primary care needs the equivalent of a BI-RADS system to record the results of clinical breast examinations.

The study results of Schootman et al<sup>6</sup> also suggest inadequate follow-up of women with a complaint of a breast lump. Strictly speaking, evaluation of symptomatic patients is not screening but diagnosis. The lack of timely diagnostic studies in women who have a breast complaint and suffer a delay in cancer diagnosis is an important cause of breast-related malpractice claims in the United States.<sup>16-18</sup> The malpractice literature does not indicate, however, how often women reporting a breast lump actually have cancer. Barton et al<sup>12</sup> found that breast cancer was present in almost 11% of episodes in which a woman aged 40 to 70 years complained to her primary care clinician about a breast lump.<sup>19</sup> Breast cancer was found in 4.5% of visits in which women had any breast complaint.

Contrast these percentages to the much smaller percentages of women in whom breast cancer can be found during screening; each year, 0.1% to 0.5% of women aged 40 to 75 years develop breast cancer that could be detected during screening.<sup>20</sup> These numbers make it clear that women older than 40 years who have a breast complaint are in a group at high risk for breast cancer; their complaints should be taken seriously, evaluated carefully, and followed to resolution.

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