

# Family Physicians' Beliefs About Breast Cancer Screening by Mammography

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A survey of 509 family physicians in New York State was conducted to assess opinions about mammography and use of mammography in screening asymptomatic women of different ages. Findings indicate that most family physicians believe that mammography is an effective procedure for detecting breast cancer in its early stages, but many do not utilize mammography as a screening procedure in their own practices. The major deterrents to the use of mammography in screening asymptomatic women relate to concerns about the safety and reliability of the procedure, the low probability of detecting breast cancer through screening, the patient's willingness to accept a recommendation to have a mammogram, and cost. The results from this study point out the need to better educate primary care physicians about the use of mammography in screening for breast cancer, especially in regard to its safety and reliability.

Breast cancer is the most common cancer and the leading cause of cancer deaths among women in the United States.<sup>1</sup> It is estimated that one out of 11 women born in the United States will develop breast cancer at some time during her life.<sup>2</sup> Research has so far failed to identify any useful measures that might be adopted to prevent the disease.<sup>3</sup> As a result, breast cancer control efforts

have focused on early diagnosis through screening as a means of reducing mortality. A marked association has been observed between stage at diagnosis and length of survival for female breast cancer patients.<sup>4,5</sup>

Of the various screening procedures for breast cancer, mammography has been shown to be most effective in detecting minimal cancers.<sup>6-9</sup> Data from a recent report of the Breast Cancer Detection Demonstration Project (BCDDP) showed that mammography was positive in 90 percent of cancers detected.<sup>6</sup> Of the 371 cancers of less than 1 cm detected, 52 percent were found by mammography alone compared with 8 percent detected by physical examination alone. Results from the random-

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ized trial conducted by the Health Insurance Plan of Greater New York (HIP) to determine the efficacy of breast cancer screening by mammography and palpation showed that repetitive screening reduced mortality by 30 percent over a 10-year period in women aged over 50 years.<sup>8</sup> The findings from the HIP study and the BCDDP have led a number of groups to recommend annual mammography for asymptomatic women aged over 50 years.<sup>10,11</sup>

Despite evidence showing that screening with mammography can detect very small, localized breast cancers, data from several sources suggest that mammography is underutilized as a screening procedure.<sup>6,7,9,12</sup> Nemoto et al<sup>7</sup> found that only 4 percent of the 12,315 breast cancer patients in a 1977 survey conducted by the American College of Surgeons had their cancer initially detected by mammography. Among the 280,000 participants in the BCDDP, 81 percent reported that they had never received a mammogram prior to joining the program, and only 7 percent had received a mammogram more than once.<sup>6</sup> A 1979 survey of 1,590 women in the United States found that only one out of five women have ever had a mammogram done for any reason.<sup>12</sup>

Concern about the danger of radiation associated with mammography may cause physicians to be reluctant to use mammography in screening. However, with current low-radiation dose systems, the risk of radiation-induced breast cancer from mammography is small.<sup>13,14</sup> Recent studies estimate the benefit-to-risk ratio of mammography to be over 100 to 1 for women aged over 50 years.<sup>15-17</sup>

Little is known about the opinions and uses of mammography by practicing physicians. This paper reports findings from a survey of family physicians in New York State that assessed opinions and use of mammography for asymptomatic women. Family physicians were selected for study because they are in a position to provide information and services to affect early cancer detection by virtue of their frequent contact with a large segment of the adult population.<sup>18-20</sup>

## Methods

The study population consisted of 509 board-certified family physicians randomly selected from

a list of 1,212 physicians from New York State included in the 1981 National Director of Family Physicians. A mailed questionnaire was used to collect information from physicians about their opinions and uses of several cancer-screening procedures.

In January 1982 questionnaires were sent to physicians in the sample along with a prepaid return envelope and a cover letter explaining the aims of the study. Nonrespondents were sent another copy of the questionnaire and a letter urging their participation in the survey 4 weeks and 10 weeks following the initial mailing. Of the 509 physicians in the sample, 57 were dropped because the mailing address used was incorrect or because the questionnaire was returned in the mail with no forwarding address. Of the 452 remaining physicians, 270 completed the questionnaire, yielding an overall response rate of 60 percent.

All physicians were given a checklist of cancer-screening tests and procedures, including mammography, and asked to check which ones they usually include as part of a complete medical examination for an asymptomatic woman in each of three age groups: 20 to 40 years, 41 to 50 years, and over 50 years. One half of the physicians in the sample were asked to indicate their recommendations regarding how frequently an asymptomatic woman should have a mammogram. Respondents were asked to check one of seven screening frequency categories that best fit their recommendation for screening with mammography. The seven screening frequency categories were as follows: once every 6 months, once every year, once every 2 years, once every 3 years, once every 3 to 5 years, some other schedule for screening, and would not recommend mammography. Recommendations for screening with mammography were obtained for each of the three age groups. Physicians who indicated that they would not recommend mammography for their patients were asked to give their reasons for not recommending the procedure.

All physicians were asked to indicate their belief about the effectiveness of mammography in detecting breast cancer in its early stages. Respondents were also questioned as to whether they discuss mammography with their patients during medical examinations and how often patients refuse mammography when it is suggested to them. Finally, all respondents were asked to provide

Recommended Mammogram Frequency	Age Groups of Patients		
	Percentage		
	20-40 years (n=132)	41-50 years (n=136)	Over 50 years (n=137)
Once every 6 months	—	—	—
Once every year	—	3	8
Once every 2 years	4	10	14
Once every 3 years	2	12	14
Once every 3 to 5 years	5	15	14
Once for baseline	4	7	5
When indicated by symptoms of breast disease	18	18	16
Not recommended	67	35	29

background information including age, sex, type of clinical practice, number of patients seen in an average week, and percentage of patients being treated or followed for cancer.

## Results

Eighty-eight percent of physicians who responded to this survey were male with an average age of 48 years (range, 28 to 76 years). Fifty-five percent had a private solo practice, 23 percent were members of a private group practice, 13 percent worked either full-time or part-time in a hospital, 5 percent were members of a prepaid group practice, and 4 percent worked in another setting such as a public health clinic or nursing home. The median number of patients seen by each physician in an average week was 100, with about 2 percent of patients being treated or followed for cancer.

Table 1 shows responses for the recommended frequency of having a mammogram for asymptomatic women of different ages. Although the frequency increased with the patients' age, a substantial number of physicians did not recommend mammography for patients of any age. Only 8 percent recommended an annual mammogram for an asymptomatic woman aged over 50 years.

Reasons given for not recommending mammog-

raphy are shown in Table 2. Concerns about the safety and reliability of the procedure, the low probability of detecting breast cancer through screening, and cost were the most common reasons given for not recommending mammography.

Few physicians in the study sample (2 percent) reported that they usually include a mammogram as part of a complete medical examination for an asymptomatic woman aged 40 years or younger. For an asymptomatic woman aged over 40 years, 30 percent of physicians reported usually including mammography as part of a complete medical checkup. Forty-four percent of physicians reported discussing with their patients the recommended frequency for having a mammogram. Among physicians who use mammography, 63 percent reported that patients "often" or "sometimes" refuse mammography when it is suggested to them. Despite many physicians' not recommending using mammography as a screening procedure in asymptomatic women, 88 percent rated mammography as either "very" or "fairly" effective in detecting breast cancer in its early stages.

## Discussion

Eighty-eight percent of the physicians in the sample believed that mammography is an effective

**Table 2. Reasons for Not Recommending Mammography for Asymptomatic Women in Different Age Groups**

Reason for Not Recommending Mammography	Age Groups of Patients		
	Percentage		
	20-40 years (n=78)	41-50 years (n=43)	Over 50 years (n=38)
The likelihood of detecting breast cancer is too low to justify mammography	58	33	33
Mammography is too expensive	27	26	19
The results from mammographic examinations are unreliable	10	21	22
Mammography may increase a patient's risk of breast cancer	41	44	42
Mammography scares patients	1	2	2
Breast self-examination is enough	1	2	2

Note: The number of respondents given in Table 2 does not exactly match the number of physicians who reported that they would not recommend mammography in Table 1 because of missing questionnaire data

procedure for detecting breast cancer in its early stages. Despite this belief, most did not recommend routine screening with mammography in asymptomatic women. Even in women aged over 50 years, 45 percent did not recommend mammography or recommended using mammography only when the patient is suspected of having breast disease.

The major deterrents to the use of mammography by physicians in screening asymptomatic women relate to concerns about the safety and reliability of the procedure, the low probability of detecting breast cancer through screening, the patient's willingness to accept a recommendation to have a mammogram, and cost.

The most common reason given by physicians not recommending mammography for an asymptomatic

woman was concern about the possibility that radiation associated with mammography may cause cancer. Data from the BCDDP, however, show that it is possible to perform a thorough, high-quality mammographic examination while delivering a relatively low dose of radiation to the breast—less than 1 rad to the midbreast.<sup>13</sup> Moreover, radiation exposure in older women (after 35 years of age) appears to have less potential for inducing breast cancer than it does in younger women.<sup>14</sup> Thus, the potential risk of radiation-induced breast cancer from mammography is small, especially in women aged over 50 years, who would be the target of most breast cancer screening efforts.

Concern about the reliability of results from mammographic examinations was mentioned by

about one fifth of physicians not recommending mammography. However, technical advances and increased expertise in mammographic interpretation by radiologists have made mammography the most effective single procedure available for detecting very small, localized breast cancers.<sup>6-9</sup>

The low probability of detecting breast cancer through screening was given as a reason for not recommending mammography by a number of physicians. In young women, in whom the incidence of breast cancer is low, routine screening with mammography may not be justified given the costs and potential risks associated with the procedure; however, most breast cancers occur in women aged over 50 years.<sup>1,3,5,6,8</sup> In this age group, there is good evidence that routine screening with mammography in combination with physical examination can significantly lower the death rate from breast cancer.<sup>8</sup>

The physicians' perception that their patients would not accept their recommendation to have a mammogram may be another deterrent to their use of mammography in screening. Nearly two thirds of the physicians who indicated that they use mammography reported that patients "often" or "sometimes" refuse mammography when it is suggested to them. However, less than one half (44 percent) reported discussing mammography with most of their patients. In a survey of 684 women in Los Angeles County, California, in 1977, 93 percent of respondents reported that they would be either "very" or "somewhat" likely to have a mammogram if their physician recommended it.<sup>21</sup> Of the 77 women in the survey who reported having previously been advised by a physician to have a mammogram, only two failed to have the examination. Although the data from this study are based on self-report, they do suggest that most women would be receptive to a physician's recommendation to have a mammogram.

Although physicians were not questioned about reasons why patients might refuse mammography, cost may be one reason for refusal. Concern about the cost of screening was mentioned by about one fourth of physicians not recommending mammography. Most medical insurance will not cover the cost of mammography when it is used for screening purposes.

It appears that the reluctance of some physicians to recommend mammography in screening asymptomatic women is due to a lack of aware-

ness regarding recent improvements in mammographic technology enabling reduction in radiation dose and increased accuracy in detection of breast cancer. The findings from this study suggest a need to better educate primary care physicians about the use of mammography in screening asymptomatic women for breast cancer, especially in regard to its safety and reliability. In addition, physicians may need to be better informed about factors that influence the quality of mammographic examination, such as the type of equipment used and the expertise of the radiologist responsible for interpreting the results of the examination.

The cost of screening is another factor that may deter the use of mammography. Until evidence becomes available showing that screening with mammography is cost effective, medical insurers are not likely to change their policies regarding reimbursement for screening with mammography. In the meantime, information could be made available to physicians identifying local facilities where mammographic examinations are performed together with costs. This information would allow physicians to take cost into consideration when referring patients for a mammogram. Costs could be reduced by screening at less frequent intervals than currently recommended as optimal. It appears that many of the physicians in the study sample may have adopted this practice. For women aged over 50 years, 42 percent of physicians recommended mammography, but less often than once every year. Future studies might investigate the effects of screening with mammography at different intervals on breast cancer detection.

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