

# The Reluctant Participant in a Breast Cancer Screening Program

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THE VOLUNTARY screening program for disease is an increasingly important aspect of public health services, particularly in settings where medical service is provided through prepaid group practice plans. Evidence of this increased emphasis is the extensive multiphasic screening program being conducted by the Kaiser Permanente Medical Group in the San Francisco Bay area and the breast cancer screening program of the Health Insurance Plan of Greater New York (1).

Research on the characteristics of participants in health screening programs, as well as research connected with the introduction of poliomyelitis vaccine, has indicated that participation in these programs is not only something less than universal, but also that it is related to certain demographic characteristics of the population. In addition, some of these studies have pointed to the importance of perceptual and motivational differences between the participants and nonparticipants. The studies have generally indicated that participants tend to come from better educated, higher income groups, and from younger population segments than nonparticipants. In addition, whites are

more likely than Negroes to take part in screening programs; among religious groups, Jews are more likely than non-Jews to participate (2-7).

The role of social and psychological factors in the decision to participate in health screening and health care programs has been cited in a number of studies (8-11). In reviewing research results on factors related to the seeking of health care, Rosenstock (12) classifies these factors into the following variables: (a) differences among people in the perception of susceptibility to a particular disease or health condition, (b) differences in their perception of the seriousness of these health conditions, and (c) differences in the safety or effectiveness of the screening measures used for detection of the health conditions.

The importance of a person's previous health behavior was reported by Merrill and associates (13) in a California study of poliomyelitis immunizations. It was found that "families who had not had their children immunized against other communicable diseases tended not to have them vaccinated against polio."

Goldsen's report on the delay of patients in seeking cancer diagnosis summarized research results as follows: "Age, sex, social status measures, and general medical habits are the characteristics which most studies agree correlate with promptness in seeking diagnosis or with getting preventive detection diagnosis" (14).

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For the most part, the research just cited has been limited to comparisons between the participants and nonparticipants in health screenings and examinations. In studies of the delay of patients in obtaining diagnosis or treatment, the patients have been characterized primarily according to the promptness with which they sought care or diagnosis for a specific condition. However, little research has been done to distinguish the participants in disease screening programs who are screened as a result of minimum efforts to gain their cooperation from those persons whose participation is won only after exertion of greater efforts. This report, in addition to describing some of the differences between participants and nonparticipants, describes the results of research in which participants were divided into three subgroups according to the effort expended to bring them in for a breast cancer screening examination. These participant groups were then related to a variety of demographic and sociopsychological characteristics.

### **Research Setting**

In December 1963, the Health Insurance Plan of Greater New York (HIP), in cooperation with affiliated medical groups, launched a large-scale screening program for breast cancer among women between the ages of 40 and 64. The purpose of this screening program is to evaluate the effectiveness of breast X-rays in the early detection and treatment of breast cancer. Twenty-three of the 31 medical groups in HIP are participating in the study. These groups are located in the four boroughs of New York City (the Bronx, Brooklyn, Manhattan, and Queens) and in Nassau County. The 490,000 members of these groups, 85,000 of whom are women 40 to 64 years of age, cover a broad spectrum of ethnic and socioeconomic categories. About two-thirds are employees of local, State, and Federal agencies or members of the families of these employees. The next largest source of enrollment consists of union groups outside of government service.

In return for a premium, HIP members are entitled to receive comprehensive medical care from physicians associated with the affiliated medical groups. Coverage is for preventive, diagnostic, and therapeutic services in the office, home, and hospital.

### **Study Design**

This report is based upon screening results among women who entered the breast cancer screening study from December 1963 through December 1964. During this period, nearly 11,500 study women from 12 medical groups came under observation, of whom 7,333 (64 percent) received a screening examination; the remaining 36 percent, although they had been informed of the screening program and invited to participate, were not examined. The information presented is based on interviews with a random sample of participating women who came for the breast examination and also on telephone interviews with a random sample of the nonparticipating study women.

All women appeared for the screening examination at the medical group center where they were enrolled. They were interviewed on various subjects, including demographic characteristics, history of breast problems, and family history of cancer. The sample of women whose interviews are used for this report were further asked a series of questions about their prior behavior in relation to health, their attitudes toward screening examinations, their views on the likelihood of a cure of cancer, and their opinions as to the desirability of knowing about the presence of cancer. Interviews were completed with 90 percent of the designated sample of participants.

Interviews with the sample of nonparticipating study women were limited to those with telephones. It was decided not to include nonparticipating women without telephones after pretests with a mail questionnaire resulted in a response rate from this group of about 20 percent. The questionnaire used for this telephone interview was somewhat shorter than that administered to the participating study women, and not all the information available for the participating women is available for the nonparticipating. The response rate among the nonparticipating study women with phones was 75 percent.

### **Procedures for Contacting Women**

To inform study women about the screening program and to make appointments for them, direct mailings and telephone calls were made to individual women. The study design required

that only the study women should be screened; examinations among control women were to be kept to a minimum. Therefore only the study women needed to be informed about the screening. Contacts had to be made directly with the individual woman rather than through mass information programs such as mass mailings or posters in medical group centers.

Two weeks before a programmed screening examination, the prospective examinee was sent a letter which described the nature and purpose of the examination and informed her of the day, 2 weeks hence, when the study office would like her to appear for an appointment in her medical group center. The woman was given a choice of hours on that day, usually from among 3 specified hours, when she could have an appointment. Enclosed with the letter was a post card addressed to the study office, with places for the woman to check the hour when she wanted an appointment and to write in her name, address, and telephone number. The woman was instructed to complete the card and mail it as soon as possible. When a woman returned her appointment card to the study office, she received in reply another post card confirming her appointment and reminding her of the date and time.

Most of the women who did not respond to the first mailing were contacted the second time through another letter, mailed after the first programmed screening date had passed. This second letter attempted to schedule another date, emphasizing the potential importance to health of the breast examinations. The arrangements for making and confirming appointments were the same as in the first mailing; an appointment card was to be mailed by the woman, and the study office was to send a post card confirming the time and date. Further attempts to reach the women with telephones who had not made appointments consisted of telephone calls. The women for whom no telephone listings were available (about one-fourth of the study women) were approached only by mail.

In most instances, telephone calls were made within 2 weeks of the most recent attempt of the study office to schedule an appointment by mail. A woman who made an appointment when she was telephoned had it confirmed by post card. If a woman refused an appointment, no

further attempt was made to reach her. During the telephone call, however, the woman was administered a short questionnaire; the answers received are one source of information about the nonparticipants in this report.

To attain a high rate of participation, the study office followed up women who failed to keep appointments. In nearly every instance, a woman who broke or canceled a screening appointment was telephoned within a day or two, and whenever possible another appointment was arranged. Thus, nearly six of every 10 women who at some time had broken an appointment were eventually examined.

### Results of Efforts to Contact

As mentioned, breast screening examinations were completed for approximately 64 percent of the women who entered the study in the period from December 1963 through December 1964. Participants were divided into the following groups according to the staff effort required to gain their participation: (a) women requiring only one mailing—the “minimum effort group,” (b) women who after they had failed to appear for a scheduled examination required either additional letters to gain their participation or

**Table 1. Participation in breast cancer screening program and effort required to gain participation**

Effort required	Percent of study group (N=1,753)	Percent of participants (N=1,125)	Number
Participants-----	<sup>1</sup> 64	100	1,125
Minimum—first mailings only-----	42	65	730
Secondary-----	10	17	189
Second mail effort-----	4	7	77
Single effort after no-show or cancellation-----	6	10	112
Repeated-----	11	18	206
Telephone contact-----	6	10	111
More than 1 effort after no-show or cancellation-----	5	8	95
Nonparticipants (weighted) <sup>2</sup> -----	36	-----	633

<sup>1</sup> 64 instead of 63 because of rounding.

<sup>2</sup> Nonparticipants are weighted to the proportion of the total study group they represent. Unweighted total of nonparticipants is 301.

a single contact—the “secondary effort group,” and (c) women for whom telephone calls or repeated attempts to reschedule examinations were required after they had failed to keep an appointment—the “repeated efforts group.” Of the women eventually examined, 65 percent were brought in by application of the minimum effort, 17 percent by applying the secondary effort, and 18 percent by exerting greater efforts (table 1). In the tables, the total of each of the distributions presented may not come to the sample size indicated because of the exclusion of “no answers” and unclassifiable replies.

This analysis focuses primarily on the differences among women who participated in the breast cancer screening program as these differences related to the effort required to gain the woman’s participation. Particular attention was directed to the impact of concentrated efforts at contact and at persuasion in attracting women who otherwise might not have been examined. To highlight the similarities or differences, information is also presented based on telephone interviews with a sample of nonparticipants. The comparison between the nonparticipants and the “repeated efforts” partic-

ipant group is particularly meaningful since both groups include primarily women with telephones, a similarity permitting ready comparison of the two groups. Comparisons of participants with nonparticipants, however, should be regarded cautiously. In addition to the sampling bias that the use of a telephone sample is likely to create, differences in the context of the interview—that is, between those interviewed in their medical group center and those interviewed at home by telephone—may result in differences in response, particularly to attitudinal questions.

### Comparison of Demographic Characteristics

*Participants and nonparticipants.* Participants in the breast screening examinations tended to be younger, better educated, and included proportionately more Jews and fewer Catholics than nonparticipants. These results are consistent with those obtained in other screening programs. The nonparticipants represented a sample of telephone owners, and therefore the socioeconomic differences observed are likely to have been understated, since per-

**Table 2. Percent distribution of participants and nonparticipants by age, marital status, education, and religion**

Classification of sample	Participants gained by—			Total participants (N=1,125)	Nonparticipants with telephones (N=633) <sup>1</sup>
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)		
Age (years):					
40-49 years.....	50	49	54	51	<sup>2</sup> 39
50-59.....	38	40	39	38	46
60-64.....	12	11	7	11	15
Marital status:					
Single (never married).....	8	7	7	<sup>3</sup> 8	8
Married.....	77	72	77	76	79
Widowed.....	8	11	11	9	9
Divorced or separated.....	8	10	5	8	4
Education:					
Less than high school.....	40	39	41	40	<sup>3</sup> 48
Completed high school.....	26	23	23	25	24
Some college or completed college.....	34	38	36	35	28
Religion:					
Protestant.....	27	29	<sup>4</sup> 27	27	<sup>2</sup> 24
Catholic.....	31	30	42	33	42
Jewish.....	37	38	28	36	29
Other or none.....	5	3	3	4	5

<sup>1</sup> See footnote 2, table 1.

<sup>2</sup> The difference between distributions of participants and nonparticipants was found to be statistically significant at the 0.95 level or greater.

<sup>3</sup> Total is more than 100 percent because of rounding.

<sup>4</sup> The difference between distributions of minimum effort and repeated efforts groups was found to be statistically significant at the 0.95 level or greater.

**Table 3. Percent distribution of participants by ethnic group, income, place of birth, occupation, work status, and travel time to examination place**

Classification of sample	Participants gained by—			Total participants (N=1,125)
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)	
Ethnic group:				
White.....	79	76	77	78
Negro.....	21	24	22	22
Other.....	( <sup>1</sup> )	0	1	( <sup>1</sup> )
Annual family income:				
Under \$5,000.....	21	25	18	21
\$5,000-\$6,999.....	25	27	21	24
\$7,000-\$9,999.....	30	24	38	31
\$10,000 and over.....	24	24	23	24
Native or foreign born:				
Born in United States.....	81	81	<sup>2</sup> 87	82
Foreign born.....	19	19	13	18
Occupation (most recent):				
Professional or technical.....	22	23	25	23
Clerical.....	38	36	36	37
Operative.....	18	15	16	17
Service.....	11	15	9	12
All others.....	11	11	14	12
Work status at time of examination:				
Never worked.....	4	6	3	4
Now work full time.....	55	56	51	55
Now work part time.....	10	14	9	10
Worked, but not now.....	31	24	37	31
Travel time in minutes from home to medical group center:				
15 or less.....	40	33	36	38
More than 15, less than 30.....	29	25	30	29
30 or more.....	31	42	34	33

<sup>1</sup> Less than 0.5 percent.

<sup>2</sup> The difference between distributions of minimum effort and repeated efforts groups was found to be

statistically significant at the 0.95 level or greater.

NOTE: These demographic data are not available for nonparticipants.

sons who do not have telephones are probably more likely to have characteristics reflecting a lower socioeconomic status (table 2).

*Comparisons among participants.* When the participants were classified according to the degree of effort required to gain their participation in the screening program, the differentiating variables described did not consistently discriminate among the three participant groups. For example, participants requiring only a minimum effort, that is, only a first mailing, differed little with respect to age, marital status, or education from those requiring greater efforts. Differences were observed, however, in religious affiliations. The repeated efforts group contained a higher proportion of Catholics than did the groups requiring lesser efforts. The proportion of Catholics replying to the first letter was 31 percent, while the proportion of Catholics in the repeated efforts group was 42 percent. There were, on the other hand, propor-

tionately more Jewish women among respondents in the earlier response groups, a result indicating that this group is more likely to respond quickly to requests for participation. In addition, women requiring repeated efforts were slightly more likely than others to have been born in the United States.

Comparisons of the three participant groups indicated no consistent differences among them in respect to other demographic variables such as ethnic group, income, and most recent occupation (table 3).

Two items were used to measure the degree to which hesitancy to participate might be related to problems of timing caused by jobs or travel time. In the first, women were classified as to whether or not they were working at the time of their examination. There were no differences among the three participant groups in the proportion of women with full-time jobs. Women with full-time jobs were about as likely

to reply to minimum as to repeated efforts. The second item related to travel time from the woman's home to the medical group center where the screening examinations were given. The differences showed no consistent pattern. In brief, the possible inconvenience of a full-time job or of a relatively lengthy trip apparently plays no significant role in whether women respond quickly or hesitatingly to the cancer screening program. Evidently factors other than convenience weigh more heavily in resistance to these examinations.

### Use of Medical Services

*Participants and nonparticipants.* Participants and nonparticipants differed considerably in their use of HIP physicians during the year previous to their screening date. Nearly one half of the nonparticipants reported receiving no medical service from an HIP physician during this period, compared with about one in five participants (table 4).

*Comparisons among participants.* There was a significant relationship between the effort needed to gain a woman's participation and her use of HIP medical services. Among those responding to minimum efforts, 17 percent had used no HIP physicians in the previous year; of the participating women who had required repeated efforts to bring them in, 39 percent had used no HIP services in the previous year. Evidently an HIP screening program attracts the users of HIP services to a screening program with less difficulty than the nonusers.

The relationship between a woman's use of medical services and her hesitation to participate in the screening program is not confined, however, to the use of HIP services alone. All participants in the breast screening program were asked further about their use of physician services in or out of HIP. In the minimum effort group, 12 percent of the women had not used any physician within the past year; among the

**Table 4. Percent distribution of participants and nonparticipants by medical services used and views about health**

Classification of sample	Participants gained by—			Total participants (N=1,125)	Nonparticipants with telephones (N=633) <sup>1</sup>
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)		
Visits to medical group center in past year:					
0.....	17	20	<sup>2</sup> 39	21	<sup>3</sup> 45
1 or 2.....	40	36	32	39	29
3 or 4.....	21	23	16	20	14
5 or more.....	22	21	13	20	12
Use of HIP and non-HIP physicians in past year:					
Both HIP and non-HIP physicians.....	20	25	<sup>2</sup> 17	21	-----
HIP physicians only.....	63	56	46	58	-----
Non-HIP physicians only.....	5	7	16	7	-----
No physician seen in past year.....	12	12	21	14	-----
Do you have an HIP family physician?					
Yes.....	88	90	<sup>2</sup> 78	87	-----
No.....	12	10	22	13	-----
Ever have shots or vaccine against polio?					
Yes.....	54	55	<sup>2</sup> 45	52	-----
No.....	45	44	53	46	-----
Not sure.....	1	1	2	2	-----
Health self-rating:					
Excellent.....	24	25	25	24	-----
Good.....	51	52	51	51	-----
Fair or poor.....	25	23	24	24	-----
How often do you think about your health?					
Fairly often.....	33	31	26	32	-----
Once in a while.....	38	40	41	38	-----
Almost never.....	29	29	33	30	-----

<sup>1</sup> See footnote 2, table 1.

<sup>2</sup> The difference between distributions of minimum effort and repeated efforts groups was found to be statistically significant at the 0.95 level or greater.

<sup>3</sup> The difference between distributions of participants and nonparticipants was found to be statistically significant at the 0.95 level or greater.

(----) Data are not available.

**Table 5. Percent distribution of participants and nonparticipants by attitudes toward screening examinations**

Classification of sample	Participants gained by—			Total participants (N=1,125)	Nonparticipants with telephones (N=633) <sup>1</sup>
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)		
I only take X-rays and checkups for sicknesses which I might actually have:					
Agree.....	43	41	41	42	<sup>2</sup> 70
Disagree.....	54	54	54	54	27
Not sure.....	3	5	5	4	3
My doctor already knows all my health conditions without my having to take any more special tests:					
Agree.....	25	26	19	24	<sup>2</sup> 53
Disagree.....	68	61	68	67	37
Not sure.....	7	13	13	9	10
Physical examinations just make you worry; it's like looking for trouble:					
Agree.....	13	13	<sup>3</sup> 20	15	-----
Disagree.....	82	82	76	80	-----
Not sure.....	5	5	4	5	-----
If you wait long enough, most health problems clear up before you get to see a doctor:					
Agree.....	18	22	16	18	-----
Disagree.....	76	73	78	76	-----
Not sure.....	6	5	6	6	-----

<sup>1</sup> See footnote 2, table 1.

<sup>2</sup> The difference between distributions of participants and nonparticipants was found to be statistically significant at the 0.95 level or greater.

<sup>3</sup> The difference between distributions of minimum effort and repeated efforts groups was found to be statistically significant at the 0.95 level or greater.

(-----)—Data are not available.

participants requiring repeated efforts, this figure was 21 percent (table 4).

How important it is for a person to be familiar with the sponsor of a screening program and to identify with that sponsor is seen in the relationship between the effort needed to get a woman to participate in the breast screening program and that woman's use of medical services both in and out of HIP. Five percent of the minimum effort group had used only non-HIP physicians during the previous year, compared with 16 percent of those for whom repeated efforts had to be made to reach them. Moreover, there was a relationship between a woman's reluctance to participate and whether or not there was a physician in HIP that she considered to be her regular or family physician. Eighty-eight percent of those requiring the minimum effort had an HIP family physician, compared with 78 percent of those requiring repeated efforts.

The relationship between the women's reluctance to participate and their reported previous participation in the program for vaccination

against poliomyelitis, although statistically significant, is not a strong one. Among the minimum effort group, 54 percent reported having had injections or vaccine against poliomyelitis, compared with 45 percent of the group requiring repeated efforts.

In summary, increasing the efforts to encourage women to participate in the screening program increased the likelihood of including women in the program who tended to be lower users of medical services as well as women who were less involved in the HIP program of medical care. Further, there was a tendency to bring women into the cancer screening program who had previously failed to accept immunization for poliomyelitis.

#### Self Ratings of Health by Participants

Participants in the screening program were asked to rate their own health on a scale ranging from excellent to poor and also to indicate how often they thought about their health. Neither item showed a significant relationship with reluctance to participate in the screening

program. Women replying to minimum efforts at contact were no more likely to report that they were in poor health or that they thought often of their health than were those requiring greater contact efforts.

### Attitudes Toward Screening

*Participants and nonparticipants.* Participants and nonparticipants were asked if they agreed or disagreed with the following statement: "I only take X-rays and checkups for sicknesses which I might actually have." Forty-two percent of the participants agreed with the statement, in contrast with 70 percent of the nonparticipants interviewed by telephone. Both groups were also asked if they agreed or disagreed with the following statement: "My doctor already knows all my health conditions without my having to take any more special tests." Among participants, 24 percent agreed with this statement, while 53 percent of the nonparticipants interviewed agreed. Thus, in the respondents' view of screening programs as a supplement to their knowledge about their health, a significant split was found between participants and nonparticipants. Participants were considerably less likely to assume that their own

symptoms or medical history provided adequate knowledge about all their health conditions (table 5).

*Comparisons among participants.* Differences observed between participants and nonparticipants on these two measures were not found among the three participant groups. Each of the three groups was about equally likely to agree or disagree with the two statements about the likelihood of screening providing additional information on health.

As another measure of attitudes toward screening examinations, participants were asked if they agreed or disagreed with the following idea: "Physical examinations just make you worry; it's like looking for trouble." Four of five participants disagreed; those responding to minimum efforts were about as likely (approximately three of four) to disagree as were those responding to repeated efforts. Similarly, the three response groups were about equally likely to disagree with the following statement: "If you wait long enough, most health problems clear up before you get to see a doctor."

To summarize, women appearing for the screening program as a result of more persistent efforts to gain their participation dif-

**Table 6. Percent distribution of participants and nonparticipants by views about cancer**

Classification of sample	Participants gained by—			Total participants (N=1,125)	Nonparticipants with telephones (N=633) <sup>1</sup>
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)		
A person who has cancer is better off if she doesn't know about it:					
Agree.....	18	20	18	19	<sup>2</sup> 21
Disagree.....	62	61	65	62	55
Not sure.....	20	19	17	19	24
If caught in its early stages, breast cancer can be cured:					
Agree.....	82	76	82	81	-----
Disagree.....	3	2	6	3	-----
Not sure.....	15	22	12	16	-----
A woman can usually tell if she has breast cancer before she sees a doctor about it:					
Agree.....	13	12	16	14	-----
Disagree.....	71	72	69	70	-----
Not sure.....	16	16	15	16	-----

<sup>1</sup> See footnote 2, table 1.

<sup>2</sup> The difference between distributions of participants and nonparticipants was found to be statistically significant at the 0.95 level or greater.

(-----)—Data are not available.



**Table 7. Percent distribution of participants and nonparticipants by concern with cancer and cancer symptoms**

Classification of sample	Participants gained by—			Total participants (N=1,125)	Nonparticipants with telephones (N=633) <sup>1</sup>
	Minimum effort (N=730)	Secondary effort (N=189)	Repeated efforts (N=206)		
There have been times when I wondered if I had cancer:					
Agree.....	55	50	<sup>2</sup> 46	53	<sup>3</sup> 42
Disagree.....	40	45	49	42	55
Not sure.....	5	5	5	5	3
Ever feel lump in breast?					
Yes.....	10	9	<sup>2</sup> 15	11	<sup>3</sup> 6
No.....	90	91	85	89	94
Breast symptoms before period—hurt or feel tender?					
Yes.....	64	64	62	64	<sup>3</sup> 48
No.....	36	36	38	36	52

<sup>1</sup> See footnote 2, table 1.

<sup>2</sup> The difference between distributions of minimum effort and repeated effort groups was found to be statistically significant at the 0.95 level or greater.

<sup>3</sup> The difference between distributions of participants and nonparticipants was found to be statistically significant at the 0.95 level or greater.

ferred little in their attitudes toward these examination programs from women responding to minimum efforts.

#### Views of Cancer

*Participants and nonparticipants.* When asked about the statement, "A person who has cancer is better off if she doesn't know about it," participants were slightly more likely than nonparticipants to disagree with the statement—62 percent of the participants and 55 percent of the nonparticipants disagreeing (table 6).

*Comparisons among participants.* Among participants, those requiring minimum efforts were about as likely as those requiring greater efforts to disagree with the statement that lack of knowledge about cancer was advantageous. There was also general agreement among participants that cancer, if caught in its early stages, can be cured. About four of five in each of the three participant groups agreed with this statement. Finally, there were no differences among the groups in replies to the following statement: "A woman can usually tell if she has breast cancer before she sees a doctor about it." About 70 percent of each of the participant groups disagreed with the statement. Thus, the women appearing quickly for an examination and those appearing more reluctantly differed little in their view of cancer and its detection.

#### Concern About Breast Cancer

*Participants and nonparticipants.* Both participants and nonparticipants were asked a series of questions on symptoms they may have had which are often associated with cancer. These symptoms included lumps in the breast and breast discomfort before menstrual periods. Participants in the screening program tended to report more concern with cancer and more symptoms than nonparticipants. Fifty-three percent of the participants and 42 percent of the nonparticipants reported that there had been times when they wondered if they had cancer. Eleven percent of the participants and 6 percent of the nonparticipants reported that at some time they had felt a lump in the breast. Finally, 64 percent of the participants and 48 percent of the nonparticipants reported that sometimes before menstrual periods their breasts would hurt or feel tender. In brief, the screening program tended to attract those women who at some time had observed symptoms of breast cancer (table 7).

*Comparisons among participants.* Among participant groups, the more reluctant participants were found to be less likely to report being concerned about cancer. Fifty-five percent of the women in the minimum effort group reported that at some time they had wondered if they had cancer. By comparison, 46 percent

of the repeated efforts group reported this concern. On the other hand, while about 10 percent of the women in the minimum effort group and the secondary effort group reported that at some time they had felt a lump in a breast, 15 percent of those in the repeated efforts group reported this symptom. There were no differences among participant groups in reports of breast sensitivity immediately before menstrual periods. Thus, while the minimum effort group might report greater concern about cancer, its members were no more likely than members of the other groups to have had specific symptoms associated with cancer.

### Summary and Discussion

*Comparisons of participants and nonparticipants.* Compared with nonparticipants, participants tended to be younger and better educated and to include more Jews and fewer Catholics. During the year that preceded the breast screening examination, participants were more likely to have seen an HIP physician. Participants were also considerably more likely to report favorable attitudes toward screening examinations; their responses, however, may have been influenced by the medical group center setting in which the participant interviews were conducted. There were some differences between the groups in their beliefs as to whether cancer can be cured in its early stages and as to whether or not a woman can detect breast cancer before seeing a physician, but these differences were slight. Finally, participants were more likely than nonparticipants to report being concerned with the possibility of having cancer and also to report specific symptoms associated with breast cancer.

*Comparisons among participants.* As compared with women who responded readily to the request for participation in the program, the reluctant respondent group tended to include a higher proportion of Catholic women, of foreign-born women, and of women who tended to be low users of medical services generally. Moreover, the reluctant respondents tended to be less involved than the other respondents in the medical care program of their medical group as measured by their use of out-

side medical services and by their reports as to whether or not they regarded one of the physicians in their group as a regular or family physician. The reluctant respondent group also included a comparatively high proportion of women who reported a lack of concern about the possibility of having cancer.

Equally as important as the differences among the three participating groups are the areas in which there were small differences or none. On most demographic variables studied, there were similarities among the participant groups. The groups did not differ significantly, for example, in age, marital status, or education. There were no significant differences in the groups with regard to ethnic group, income, or most recent occupation. Neither were there consistent differences among the participating groups based on whether or not they were working when they came for their examination or whether or not it took them considerable time to travel from their home to the place of examination—both factors that might be expected to influence participation.

In rating their own health and in reporting how often they thought about it, participants responding to minimum efforts at contact were similar to those responding to repeated efforts. These groups also had similar attitudes toward screening examinations and similar views of cancer. Finally, although women responding to minimum efforts were more likely to report a general concern about the possibility of having cancer, they were no more likely than the reluctant respondents to report specific symptoms possibly associated with breast cancer.

In terms of bringing in significant numbers of those women who do not readily respond to requests to participate in screening programs, the results of extensive efforts appear to have been rather limited. Since 65 percent of the women eventually examined came in through minimum efforts at contact, large differences between the minimum contact group and the final, total participant sample would not be expected. For example, although there was a 22 percent difference between the minimum effort group and the repeated efforts group in the proportion who did not use any HIP medical services in the previous year, the difference between the minimum effort group

and the total participant sample is only 4 percent. In most instances in which differences are found, they are of the order of 1 or 2 percent.

Nevertheless, in meeting the requirements of the breast cancer screening program, the additional efforts at contact were of considerable importance. Had efforts been limited to mail contacts alone, the overall response rate would have been about 50 percent rather than 64 percent. In testing the effectiveness of periodic breast examinations in reducing mortality, the larger response rate may be critical, since the experience of the total study group needs to be compared with that of a control group.

Also, the most hesitant participant group included a significantly higher proportion of women who had no medical service at all during the previous year than did the other groups. Under other circumstances would these women tend to delay longer than the minimum effort group in seeking medical care when breast cancer symptoms occur? It will be possible to probe into this issue by comparing, for example, the stage of breast cancer in the participant group and the control group at the time of diagnosis.

Most of the differences, however, between the participants responding readily and those responding hesitatingly are small. Possibly those who participated were women with a "set to action" who were predisposed to health examinations. Thus, the similarity in the demographic parameters and those related to health appraisal among participant groups may be the result of repeatedly dipping into the same universe of women predisposed to the examination. This hypothesis, of course, places the primary emphasis in determining which effort will elicit a response on the role of random factors or special personal situations. The women who were not examined, however, may represent a hard core of persons who will not respond to a screening program given under a fixed set of conditions no matter what efforts are expended to convince them. For this hard-core group, a change in the conduct of the study that would place their participation on a different basis might elicit more participation. For example, the scope of the examination might be broadened to include detection of conditions other than breast cancer.

Another possible reason for the similarity among participant groups may be that the study is being conducted in a prepaid, group practice medical setting in which comprehensive care is provided. A significant factor in participation may be familiarity with the setting in which examinations are given; differences in the degree of familiarity among participant groups may not have been strong enough to be reflected in differences in personal and health characteristics. If so, greater differences between ready and reluctant participants may be found when a screening program is conducted in an unfamiliar setting, as when a local cancer society or a health department offers a screening examination to the local community.

Finally, variables which discriminate between participants and nonparticipants may not necessarily discriminate between ready and reluctant participants. To test differences among participants, it may be necessary to examine sets of variables not included in this study.

### Conclusion

In spite of the apparent similarity among participant groups in respect to most of the variables tested, any screening program should attempt to increase its response rate. Otherwise, hitherto untapped variables may later emerge to plague the study staff. Efforts to increase the response rate also make sense from the standpoint of good medical care.

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## Aftercare Centers for Addicts

Three cities, Los Angeles, Chicago, and New York, have been selected as sites for offices of the National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, in which to negotiate contracts for Federal aftercare of narcotic addicts. These metropolitan area offices are the first of a proposed national network which will arrange for the treatment of narcotic addicts discharged from inpatient units of the Institute's Clinical Research Centers at Fort Worth, Tex., and Lexington, Ky.

Los Angeles, Chicago, and New York City were selected because they have large addict populations. Additional cities will soon be added to complete the network.

The purpose of the program is to reduce the high rate of relapse of patients who have been treated for narcotic drug addiction. Local offices of the National Institute of Mental Health will coordinate the services of community agencies rather than offer direct care. Local

agencies will provide treatment and rehabilitation under contract to the Institute.

Specific services to be contracted for may include but are not limited to vocational training, continued education, job placement, social casework, individual psychotherapy, group and family therapy, halfway houses, day and night hospitalization, and urine testing to determine whether patients relapse to taking drugs. Treatment will be tailored to meet the needs of individual patients.

The program was called for by the Narcotic Addict Rehabilitation Act of 1966, which permits the civil commitment of narcotic drug addicts, including those charged with or convicted of Federal offenses. Since the act allows a 3-year civil commitment, the addict will spend an average of 6 months as an inpatient at either the Fort Worth or Lexington Clinical Research Centers and the next 2½ years in the Institute's aftercare program.