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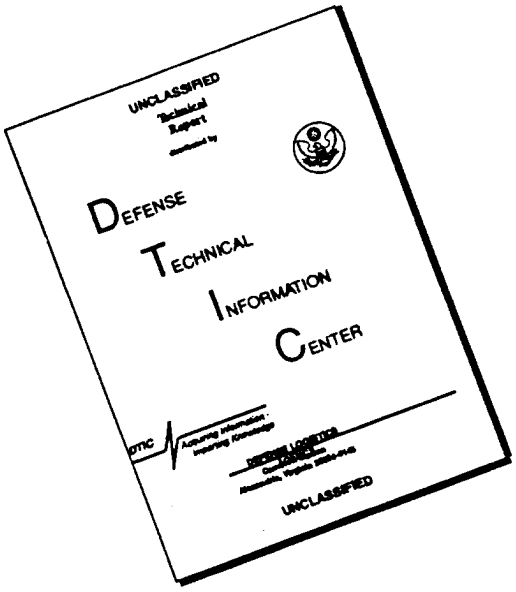

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TeleSonic's Breast Health Information Project is an experimental research effort designed to compare preferences for an automated multimedia telecommunications system with a telephone information line supported by a live counselor. This research will determine if automated voice information systems offer an effective way to communicate breast health information to underserved populations.

The Phase One Test was conducted in the Baltimore, Maryland metropolitan area during the Fall of 1995. It examined racial and income preferences for an automated versus live counselor telephone information system across four stratified census areas, targeted by race (African American and white) and income (low to moderate and middle to upper). These groups were divided in halves, each half received information about a live counselor system or an automated information system. Postcards were mailed to predetermined households. Using Chi-square and a probability level of <.05, caller volume and activity were assessed to identify preferences by race and income level.

Overall *callers showed a statistically significant preference for using the automated telephone information system compared to the live counselor telephone system. No statistically significant differences in caller preference were demonstrated between racial groupings. Statistically significant differences were observed in caller preference between income groupings.*

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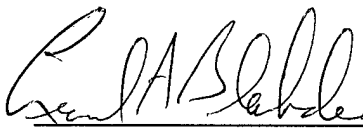

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BREAST CANCER INFORMATION SYSTEM DESIGNED TO FOSTER INCREASED PROACTIVE PREVETION ACTIVITIES AMONG MINORITY POPULATIONS

Initial Findings On Information Seeking Preferences And Differences By Income And Race

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I. INTRODUCTION AND BACKGROUND

The Breast Health Information Project (BHIP) represents a multi-year research effort that is designed to assess the effectiveness of automated messaging information systems in reaching the informationally-hard-to-reach. For this research, the informationally-hard-to-reach are defined as African Americans and low to moderate income women, both African American and white. The research includes the examination of caller preference for accessing automated or live counselor telephone information systems, across racial groups and across income levels (low to moderate and middle to upper).

The research is being conducted by the TeleSonic Division of Associated Enterprises, Inc., an Annapolis, Maryland telecommunications company. It builds upon the company's earlier telecommunications research in the area of cancer health information systems. For the BHIP research, TeleSonic developed an automated information system to be used in communicating information about breast health and breast cancer. Additionally, the company established a testing approach to evaluate the efficacy of the system in increasing access to information, when compared to live counselor information systems. This increased access to information is believed to be crucial in encouraging greater numbers of minority and underserved females to seek early diagnosis and appropriate treatment of breast cancer.

Problem: Breast cancer is the most common cancer among women and the second leading cause of death among women. In the State of Maryland, where the major effort of the telecommunication Breast Health Information Project will take place, the incidence of breast cancer ranks the seventeenth worst in the nation (1995 Cancer Facts & Figures). Unfortunately, the overall statistics mask the real disparity of breast cancer incidence between white and African American females.

The prospects for survival for young white women diagnosed with breast cancer have improved during the past 20 years, while the prospects for African American women, especially older ones, are increasingly grim. Among postmenopausal African American women, the mortality rate from breast cancer has increased by 22 percent in the past 16 years (National Cancer Institute, 1994). There is a clear and compelling problem that requires immediate intervention directed toward reversing this trend.

The disparity in health status among minority and underserved populations in general have been fully documented (REF 4,5 original proposal). A major barrier to adequate services for minorities can be attributed in part to the philosophical frameworks under which practitioners in the health professions are traditionally trained to operate. The behaviors of the majority mainstream populations are viewed as the archetype for the norm and, therefore, are perceived with higher regard. Traditionally the minority populations have been described in terms of a deficit model. This is evident in the terminology that has been used to describe minority people: subculture, substandard, culturally deprived, and so on (Cole, L., 1993).

Given these barriers, the challenge becomes how to develop an appropriate and effective information system which can be used as a tool in fostering greater numbers of minority and

underserved females to proactively seek diagnostic and preventative breast cancer strategies. Given that many females do not undergo routine medical screening for breast cancer, and given that people with limited resources, special needs or disabilities do not or can not readily access available health education programs, there is a strong need to enhance infrastructure by developing effective information dissemination systems.

A. Scope of Research

The intent of the BHIP is to develop and conduct research which will assess the efficacy of using automated telecommunications systems in an attempt to reach minorities and underserved females with proactive information about breast cancer. Overall, the research is designed to develop and evaluate a multimedia telephone system that encourages minority and underserved females to seek preventive and diagnostic care for breast cancer. The research will compare the caller response patterns for an automated messaging system with live counselor response patterns.

Goal: The intent of the Telecommunication Breast Health Information Research Project is to develop and conduct research related to the efficacy of using automated telecommunication systems in an attempt to reach minorities and underserved females with proactive information about breast cancer. Overall the research is designed to develop and evaluate a multi-media telephone system that would encourage minority and underserved females to seek preventative and diagnostic care for breast cancer. The research will compare the caller response patterns for an automated messaging system with live counselor response patterns. The basic hypothesis is that information-on-demand, through a non-threatening telecommunication information system can increase access to information and promote subsequent behavior changes.

The basic hypothesis is that through the successful development and implementation of an innovative multimedia automated telephone information system, it is possible to show that it can be effectively used as a tool against breast cancer by reaching minority and underserved female populations, and by fostering them to take positive action.

Outcomes: The anticipated outcomes for the three-year research effort include the following:

1. Successful development and operation of a "breast cancer automated multimedia telephone information system;"
2. An increase in minority and underserved females seeking breast cancer information;
3. An increase in females who take positive actions toward breast cancer prevention and detection;
4. Collection of pertinent data measuring the efficacy of such a system through usage by minority and underserved populations--data are not available now; and
5. Enhancement of information infrastructure for use by doctors, patients, and family members.

To accomplish these outcomes, nine major tasks were established in the statement of work for this research project. The information presented in **Table 1, Summary of Project Progress,** on the following page highlights the areas of activities over the last year.

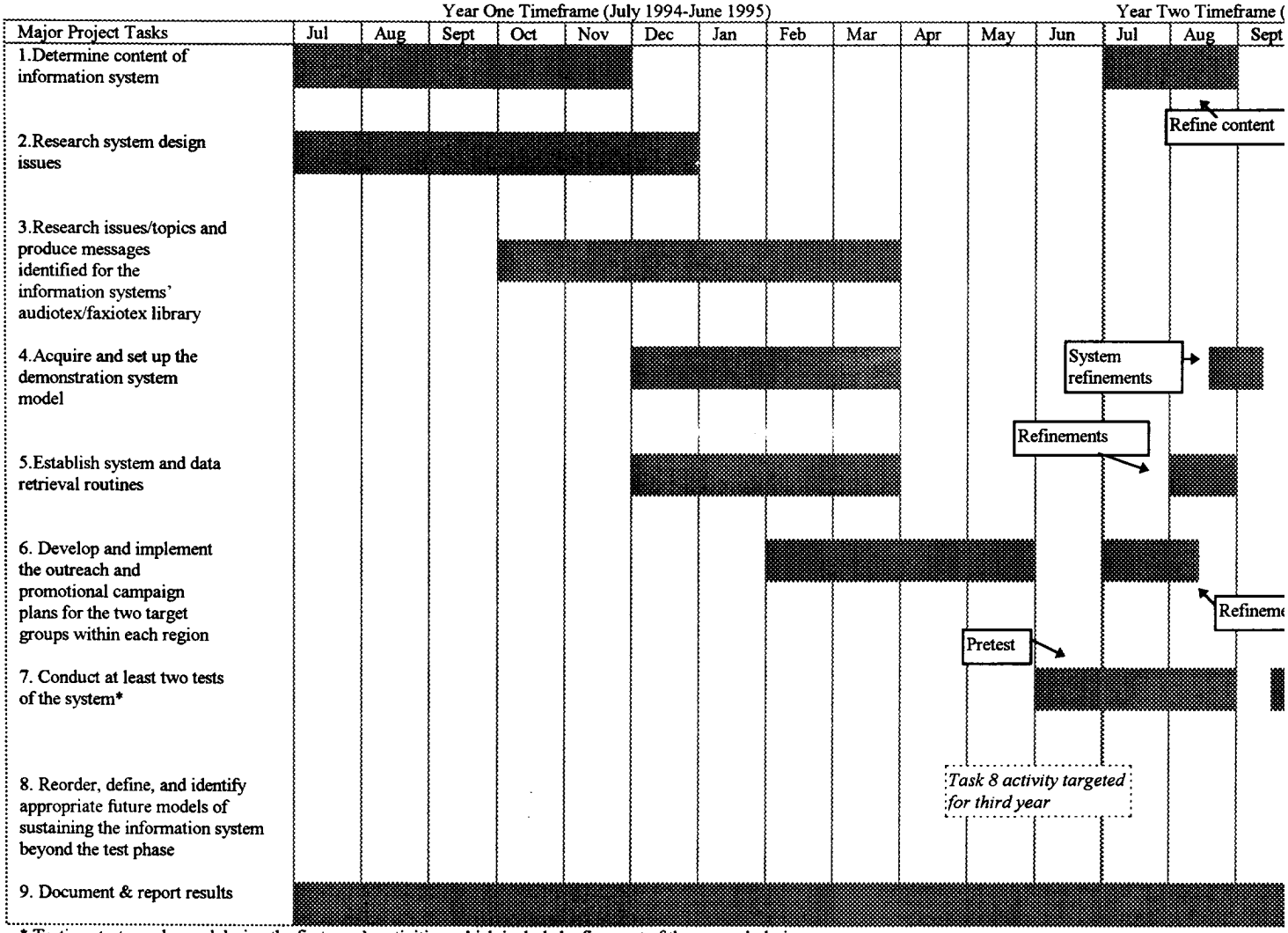
B. Previous Work

During the first year of research activity, project efforts were directed toward four major activities:

1. Refinement of the research design
2. Design and development of the multimedia automated telephone information system
3. Identification of the target population to be included in the research activities
4. Development and implementation of a pretest demonstration model

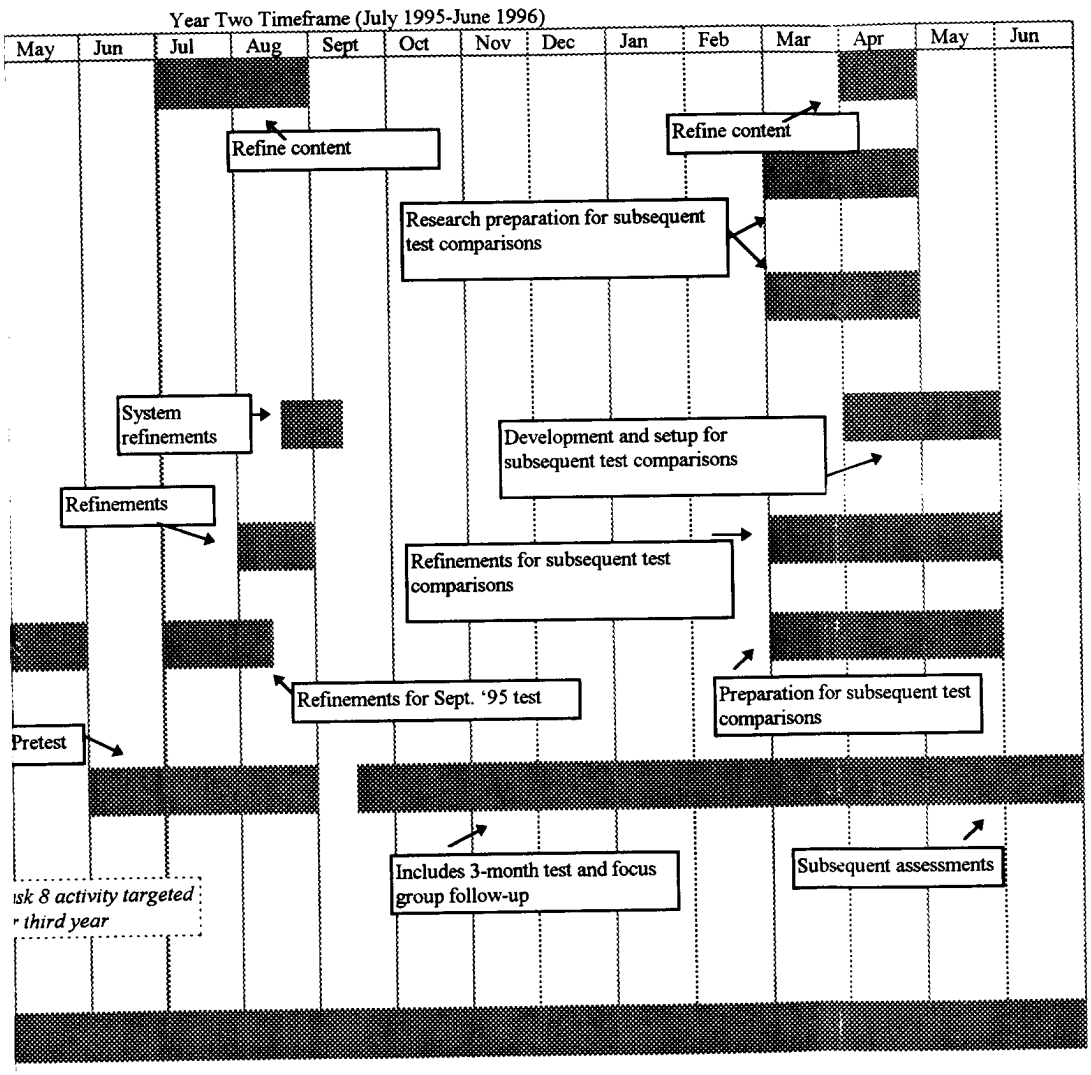
The first annual report provided detailed information on each of these components. Included in this section, however, is summary information on these components for continuity of the readers review.

Table 1: Summary of Project Progress



* Testing strategy changed during the first year's activities, which included refinement of the research design.

mary of Project Progress



1. Overview of Research Design

The overall research schemata encompasses three test efforts. This Phase One BHIP test research represents the first of three comparative assessments of caller preferences for use of automated and live counselor telephone information systems about breast health and breast cancer. The two subsequent research efforts will build upon this first test and will expand to include other regions and additional technology refinements. For this first test, caller preferences for information type were examined across racial and socio-economic levels using 1990 census data as a basis for identifying the targeted households. In addition, a minor follow-up component of this research focused on assessing subsequent preventive actions. This phase one test builds upon earlier work that was developed and refined through a pretest, which was conducted during the first year of project activity.

The research is built around an experimental design that compares callers responses to two different telephone information systems. Callers are stratified by household in four distinct census areas. Within each census area callers are randomly divided. A mailed postcard is used to expose the callers to information on breast health and breast cancer through either an automated multimedia information system or a live counselor. Callers self-select their level of interaction with the assigned treatment and call-responses are measured to determine preferences. information system. A more specific description of the research design is presented in the **Research Methods** section of this report, beginning on page 14.

The remaining components of this section of the report describe the other related preliminary work efforts.

2. Target Population

The test area which met the target criteria included 634,750 households throughout the Baltimore metropolitan area. These households represented those census blocks with population density levels of a minimum of 55% for the targeted income and racial groups. In actuality, the concentration levels for the representative census blocks ranged from a minimum of 55.53% to a high of 83.68%.

The demographic information for the pretest and for the Phase One test was generated from a combination of the 1990 census files and the TIGER files, which are US geographic service files designed to show roads, political boundaries and related identifying parameters. This information was used to select census block groups for each of the four target populations. The census block groups were then geo-coded and applied against address files to generate the sample households needed for each of the target populations. A summary of the number of eligible households and target population density levels is noted in **Table 2** on the following page.

Table 2: Target Population

Metropolitan Counties	Total Households for Target Population* Groups & Related Density levels for Areas								
	AALM	Density	AAMU	Density	WLM	Density	WMU	Density	TOTAL
Anne Arundel	502	82.27%	163	70.55%	471	66.24%	126,155	76.00%	127,291
Baltimore City	65,153	71.77%	22,935	63.37%	14,933	63.03%	44,278	66.29%	147,299
Baltimore	0	0	7,981	61.93%	4,380	61.76%	194,398	73.10%	206,759
Carroll	0	0	0	0	488	55.53%	38,719	78.06%	39,307
Harford	0	0	0	0	521	61.23%	51,082	76.67%	51,603
Howard	0	0	0	0	288	83.68%	62,303	76.76%	62,591
TOTAL	**65,655**	**71.85 %**	**31,079**	**63.04 %**	**21,081**	**62.90 %**	**516,935**	**74.39 %**	**634,750**

In order to validate the process for identifying the target populations, the census data were submitted to the Baltimore Metropolitan Council to verify the appropriateness of approach in selecting the census block groups.

A number of cautions and findings should be noted about the use of the census information as a demographic tool in conducting this research:

1. Census information could not be used to identify the households of females at targeted age levels or education levels.

Although this was desired and originally attempted, it was found that targeting census information based upon these factors, as well as income and race, had a narrowing effect, creating a very limited population count. Hence, information on age and gender were identified as a description of the profile of a census tract rather than a descriptor of the individual households.

2. Census results originally anticipated the identification of enough households to generate a minimum of a three-to-one selection.

For the pretest and the Phase One test, the census manipulation began with a total of 867,656 households in central Maryland. It was assumed that this original total was large enough to generate the minimum 3 to 1 range and to ensure the inclusion of a majority of representation by race and income (originally targeted at 60% or better for each variable). In the final analysis, only five counties: Baltimore, Anne Arundel, Harford and Howard along with the City of Baltimore, met the dual representation criteria. The final number of households in the affected area was reduced to 634,750.

In addition, it was necessary to reduce the race and income representation levels for eligible census areas from a minimum of 60% down to the minimum of 55%. At the minimum 55% concentration levels, the mailing ratios ranged from 2.7 households to every 1 postcard mailed and upwards of 76.9 households to every 1 postcard mailed. This minimum mailing ratio is less

* Definitions of racial groups: AALM=African American, lower and moderate; AAMU=African American, middle and upper; WLM=white, lower and moderate; WMU=white, middle and upper.

than the anticipated minimum of 3 to 1. The actual concentration density levels by census group for the mailing are presented in **Table 2, Target Population**, on the previous page.

3. To identify the income levels for the census areas required that files be analyzed in terms of household income rather than poverty level, which was originally anticipated.

There is no cross link between the census files for households by race and the poverty level of households. As a consequence, plans to define the racial groups by poverty levels were abandoned. Instead, income levels for households were used. Based on 1989 income levels from the Census Bureau, income levels were grouped into quintile levels: the 1st and 2nd quintile income levels were defined as low to moderate income. The 3rd through 5th quintile income levels were defined as upper to middle income. Since the 1990 census files classify households at a break point of $25,000, this amount was used as the upper limit for the low to moderate income groups. Amounts equal to or greater than $25,000 were used to represent middle to upper income groups.

The income levels reported for each household in the 1990 census are summarized in the definitions under **Appendix A, Research Definitions**.

The information from this process was used by a mail house to cross reference the census tracts with a geo-file (street files). Address files were then used to identify the household residents and addresses for each of the four census areas.

3. Technical System and Content

The technical design relates to those activities associated with acquisition, development and installation of the hardware, software and telephone lines to support the telecommunications system. This effort also includes "loading" the system with the message content.

The telecommunications system operates on a personal computer platform, using Verbatim telecommunication software. Research was conducted to ensure that the system selected would provide the data to respond to the questions posed in the hypotheses and the eight data points referenced under the research parameters section of this report.

The call flows were developed to give callers options, yet at the same time capture as much data as possible. The content for the system represents the topics and scripts to be included in an automated system. This effort was implemented with the active involvement of project staff, project advisors, and project consultants. Initially, project staff engaged in research on topics. More than 70 topics were originally identified. Then after receiving input from advisors through rankings and discussions the topics were reduced. This information was the basis for a work session with health educators and an oncology expert, at which time, the topics were finally reduced to 25. Scripts were developed for these topics. Sample scripts are contained under **Appendix B**. Additionally, three scripts provided supporting hard copy information that could be received through a fax or mail. A copy of these hard copy documents are provided

under **Appendix C**. Finally, copies of the postcards that were used for Treatment A (live counselor system) and Treatment B (automated system) are contained as **Appendices D and E**, respectively.

The results of the two to three month period of development and deliberations yielded a total of 25 messages within five categories as noted in **Table 3,** below:

Table 3: Message Category and Titles

MESSAGE CATEGORY	MESSAGE TITLES
1. Breast Cancer: What You Need to Know	1. What is breast cancer? 2. Put fear aside - breast cancer is curable. 3. Breast cancer myths. 4. Every breast lump or pain is not cancer. 5. Breast cancer and African American women 6. Men, you can get breast cancer too
2. Breast Cancer Risk Factors	7. Are you at risk for getting breast cancer? 8. Do genetics and family history play a role? 9. Breast cancer, the pill and menopause 10 Your lifestyle and how it affects breast cancer 11. How to lower your risk for getting breast cancer 12. Role of Diet 13. Role of Exercise
3. Breast Health	14. Breast examination (Related information by fax or mail also available) 15. All about mammograms (Related information by fax or mail also available) 16. When should you get a mammogram? 17. Mammogram services 18. Where do I get more information about breast cancer?
4. Treatment Options	19. How can breast cancer be treated? 20. Breast cancer and surgery 21. Chemotherapy, radiation treatment and Hormones 22. Medical frontiers-new research
5. Recovery and Follow-up	23. There is a life after breast cancer. 24. Community bulletin board (Related information by fax or mail available) 25. How should I support a friend or relative with breast cancer?

NOTE: Shaded messages represent related sub-messages that are not listed in the directory but are branched and accessed from the preceding title.

The equipment, software, and telephone lines were configured to support the basic call pattern for the system. The call flow design is presented in **Appendices F and G**. These two appendices show that different call designs were developed to support and analyze caller activity for the automated and live counselor systems. The live counselor component of the system represented direct call referrals to the Cancer Information Service and the American Cancer Society, based on the choice of the caller.

4. Pretest Component

The pretest effort was added to examine the response patterns of the callers, using a small sampling from the targeted households. The pretest results were designed to provide information that would help to determine the number of mailings for Phase One and subsequent tests. The response pattern for the pretest served as a determining factor in verifying the anticipated response levels. If the response pattern from the pretest was below the anticipated levels, the maximum mailing level would be used, if the response pattern was above the anticipated levels, minimum mailing levels would be used.

In addition, the pretest was designed to obtain any information regarding the subjects' reactions to the content and the overall system. This information was used to make adjustments to the system before the Phase One test.

Prior to implementing the Phase One test, a pretest was conducted affecting 4,000 households across the four target groups. The pretest was used to assess the level of responses anticipated and to identify any changes needed in the information system.

The response rate from the two-month pretest exceeded the original expected response rates of 7.5% and 10% for the live and automated systems, respectively. Instead, response rates actually were 11.2% and 25.6%, respectively, for the live information and automated information systems. (The details of the pretest are reported by TeleSonic in the 1995 Annual Project Report.)

Analyses of the pretest information, however, showed a major limitation in assessing response rates that were later corrected, but is reflected in the pretest results. Namely, these results contained "residual 800 telephone calls". Residual telephone calls represent those calls that are made by callers trying to reach the previous owner of an 800 telephone number. This call problem is greatly diminished when newly used 800 telephone numbers have been out of circulation for an extended period of time. As a consequence, calls outside a reasonable proximity of the target geographic area created high suspicion regarding appropriate results. Moreover the 800 telephone numbers were blocked for subsequent tests, to make sure that only certain geographical areas could access the assigned telephone numbers.

Hence, the response pattern from the pretest could not be used to definitively identify the expected frequency of calls. The results from this test were extremely helpful in making decisions about blocking calling areas and in identifying the following changes:

1. Providing recommendations to change the introductory components of both information systems
2. Determining voice preferences for certain components of the information system
3. Identifying content changes for messages
4. Providing recommendations that reduced time-on-line before accessing system content
5. Obtaining reactions to the outreach postcard
6. Determining the accuracy of the mailing system

These changes were supported with information obtained from focus group representatives for the targeted populations.

Based upon the pretest findings, system changes, the mailing process, and the number of mailings to households, the Phase One Test plans were finalized. The results of the pretest provided valuable information for refinements to the information system and for improving the accuracy of the address finding process. A summary report of the pretest findings are available under **Appendix H, Pretest Summary Results**.

5. Focus Group Component

The research model includes assessments from potential users of the telecommunications system as a basis for finalizing the development of the system and as an opportunity to gain greater insights and assessments from the findings from each test. As a consequence, a representative sampling of potential callers from the affected target population groups were identified to participate in focus group sessions.

Following similar criteria that were used for identifying the targeted groups in the research design, four representative focus group sessions were held, prior to the pretest. An additional focus group session was held after the pretest to help clarify issues from the pretest results. The first four groups included two low to moderate income groups, for both African American and white representatives, and two middle to upper income groups from the same racial groups. Focus group participants came from different census areas from within the Phase One Test geographical region. Participants were identified by organizations in the target census areas that have memberships representative of the racial and income areas targeted in the test design. One focus group was identified for each of the four targeted population groups for the study. The only modification to this was that the focus groups for the white low to moderate income group became a mixed group of white and African American females.

Highlights of comments from the focus group interviews and a report of the key findings from ideas, recommendations and reactions obtained are noted on the following pages. These highlights represent the findings from the common questions that were asked of each group.

Question 1. Why did you offer to participate in a discussion on breast cancer?

The responses to this question were fairly consistent across each of the focus groups. Most frequently the members stated they had a relative with breast cancer or had their own interest or concern about the disease. This question was not asked of the white middle to upper income group.

Question 2. What is your attitude toward breast cancer?

The ranges of responses to this question was broad. Most frequently referenced across all groups was the issue of fear, confusion, or feelings of being scared. Also included were comments describing actions that clearly showed an interest in taking preventive actions like getting a mammogram or self examinations, or wanting to know more about the topic. Only one group, the low income African American, reported that they wanted to block out information on this topic, indicating a message of resistance.

Question 3. Why do you suppose breast cancer deaths have risen 18% in the last 20 years in African American women of all ages?

The responses summarized for this question were consistently similar for the low income groups and related to the issue of requiring additional cost, effort or insurance. All three issues were mentioned by the low to moderate African American income group. Fear was the most frequently referenced problem for the low to moderate mixed race group. Members of this group spoke about concerns: fear, afraid of disfigurement, and basically trying not to think about it. Other priorities and lifestyle issues were the themes shared by the middle to upper income African American group. The general response to this question from the upper to middle income white group related to the possibility that the death rate is higher because there is a better reporting system. They also voiced concerns about chemicals in the environment and the local incidence patterns.

Question 4. Death related to cancer can be greatly reduced through eating right, not smoking, and finding cancer early. What would be the best thing to say to women to get them to do these things ?

While a few women in the mixed low to moderate income group were motivated by scare tactics, consistently all women in the African American groups and the middle to upper income white group wanted to hear positive information about possibilities and success stories and empowerment. One group even proposed the idea about having a section in well known stores like Nordstrom that would provide services for people who have had their breasts removed. Only the lower to moderate income African American group indicated the importance of enhanced advertisement similar to the ads on smoking. Discussions from all groups inferred advertisement as being necessary. While there was a general focus on a positive message, only the white middle to upper income groups used the actual terminology of empowerment.

Question 5. Which is better to tell people about?

a. Facts about breast cancer deaths
b. Ways to help lessen the risk of breast cancer
c. Other?

Because this question was not asked in all focus groups, the responses were mixed. Participants in the upper to middle income African American group suggested that when presenting facts they should show the importance of presenting the information in a positive format and not heighten fear. The low to moderate white group wanted a focus on ways to reduce the risk incidence of breast cancer.

Question 6. Which topics about breast cancer would you listen to? Respondents were asked to pick only one from the following list:

a. What is breast cancer?
b. Breast cancer and African American women.
c. Are you at risk of getting breast cancer?
d. Do genetics and family history play a role in breast cancer?
e. Breast cancer, the pill and menopause.
f. Your lifestyle and how it effects breast cancer.
g. How to lower your risk of breast cancer.
h. How can breast cancer be treated?

The most frequently recommended question by the low to moderate as well as the African American women related to how to reduce risk. Genetics and history was the second choice question for both African American groups. The middle to upper income white women were most concerned about treatment, followed by lifestyle questions.

Question 7. Are there any topics you might want to learn about cancer that you feel would get your attention if you heard about it through the media ?

The range of responses to this question varied. The detailed report shows the greatest concentration of responses related to the category of prevention, treatment or research or to the category defined as other. Marked differences exist within each category. Low to moderate income African American women, again reiterated concerns about misunderstanding and fear; low to moderate income white women were more concerned about research and awareness. The middle to upper income African American women spoke to issues about lowering risk, and the middle to upper income white women focused on the need for success stories or not wanting to know. It should be noted that one respondent from the low to moderate income African American group pointed out that she would not listen at all to information about breast cancer.

Question 8. Have you received any information about breast cancer in the last several years ? If yes, where? (presented in yes/no responses) From which source would you rather learn about breast cancer? (represented in a numerical response)

The responses from the focus group participants cover two questions. A yes/no response is provided to the question about whether information has been received in the last several years. All group members, except the middle to lower income white groups responded yes to the first part of this question. Hence, there is some general opportunity to receive breast health information. Relatedly, all groups, except for the middle to upper income African American group listed the doctor as their preference for the information source. This latter group had news media as an information preference source. This response is somewhat contradictory for the low to moderate income women, in that these groups indicated greater constraints in getting to a medical doctor, yet they prefer their medical information from this source.

Question 9. How would you design a mailer ?

The responses to this question provided a high degree of consistency in response across all groups. The women stated that a mailer should be an oversized, colorful, postcard rather than a letter. It should have large print, and be easy to read. These components were used during the research in the development of the final mailer for the research effort. The African American women noted that a gift would serve as an incentive; yet the low to moderate income white group felt that the gift would make no difference.

The focus groups provided invaluable insight and information and helped to identify and clarify issues and concerns that should be considered in the design and operation of the information system and outreach efforts. A detailed report on the focus group activities during this first year effort can be found in the 1995 Annual Progress Report.

II. BODY OF REPORT: KEY ACTIVITIES DURING THE SECOND PROJECT YEAR

A. Research Method

Ultimately, the automated telephone Breast Cancer Information Project (BHIP) is designed to develop and evaluate a multimedia telephone system that would encourage minority and underserved females to seek preventive and diagnostic care for breast cancer. The research will compare the caller response patterns for an automated messaging system with live counselor response patterns. It is believed that through increased and informed levels of communication, greater subsequent action will occur. Analysis will include caller response differences related to race and income levels across a number of variables. For the overall research effort, three different tests will be conducted as a basis for a comprehensive analysis of response patterns.

Activities performed during the second project year remained on schedule. All tasks identified in the proposal's Statement of Work, with the exception of Task 8, were either completed or in process during the first and second project years. Task 8, "research, define, and identify appropriate future modes of sustaining the information beyond the test phase," is targeted for the third year. The major project tasks include:

Task 1:Determine content of the information system
Task 2: Research technical system design issues
Task 3: Research issues/topics and produce messages identified for the information system's audiotex/faxiotex library
Task 4: Acquire and set up the demonstration system model
Task 5: Establish system and data retrieval routines
Task 6: Develop and implement the outreach and promotional campaign plan
Task 7: Conduct at least two comparable tests of the system
Task 8: Research, define, and identify appropriate future modes of sustaining the information beyond the test phase
Task 9: Document and report results

Refer to **Table 1: Summary of Project Progress** for a timeline of project activity to date. Results of the study through the end of Year 2 follow in the next sections.

1. Hypotheses and Key Questions

The basic hypothesis is that an innovative multimedia automated telephone information system is an effective tool against breast cancer in reaching minority and underserved female populations in fostering them to take positive action.

Major Hypothesis

Multimedia automated telephone systems enhance live referral alone as a vehicle to reach the informationally hard-to-reach.

Related Hypotheses[*] :

1. Callers overall will show a greater tendency to call a multimedia automated telephone system combined with live referral than to call the live referral alone.

2. Within racial groups, callers at different socio-economic status (SES) levels will show significant differences in caller preferences for use of a multimedia automated telephone system with a live referral option compared to live referral alone .

3. Callers at lower SES levels will show a significant preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone.

4. Repeat callers will show a greater tendency to switch from a multimedia automated system to the live referral option.

5. Callers with higher SES levels will show significant differences by racial groups in their preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone.

6. Callers with lower SES across racial groups will show a preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone.

7. A culturally sensitive outreach strategy will increase caller volume compared to a less-culturally focused outreach strategy.

8. Callers in different geographical areas will show a significant preference for a multimedia automated telephone system with live referral compared to live referral alone.

Within the context of this research and the hypotheses, the technical option is being expanded beyond the telecommunication effort. The technical system is being designed to collect data related to eight key issues:

1. Number of callers from a particular area
2. Number of topics accessed by a caller, general preferences, preferences by census area, preferences for calls taking the personal assessment
3. Number of callers who transferred to a live counselor by census area
4. Number of repeat callers
5. Analysis of caller assessments with caller topical preference, including live counselor transfers, by call census area
6. Number of callers requesting fax or hard copy by census area

[*] The related hypotheses were restated to simplify wording.

7. Number of callers by census area who responded to follow-up surveys
8. Tracking of repeat caller preferences in terms of topics and transfers to live counselors

2. The Research Design and Data Analyses

A basic schemata for the research design for Phase One test is presented in **Table 4, Population Schemata**, on the following page.

Research design: The research will compare the patterns of usage for an automated message system and a live counselor system for the informationally-hard-to-reach. The hypothesis is that the automated system will increase calling levels in the targeted groups. The significance of this research cannot be understated, given the low level of proactive actions by minority and low income women and the high breast cancer mortality rates for minorities. Information and communication strategies that will improve the proactive actions of these women are critically needed.

In comparing caller preferences across racial groups and socio-economic levels, the following *research parameters*[*] affecting the four target groups were implemented for the Phase One Test:

- African American and white households were targeted from both low to moderate and middle to upper SES levels across stratified census areas.
- Direct mailings encompassing 20,000 households were equally distributed across the target groups.
- Information postcards were mailed, using a random assignment of Treatment A (information about the live counselor system) or Treatment B (information about an automated information system) within each census area.
- Testing took place in the Baltimore, Maryland metropolitan region.
- The test was conducted for a three month period from mid September through mid December 1995.
- Five follow-up representative focus group assessments were conducted to review test findings.

[*] See research definitions in Appendix A.

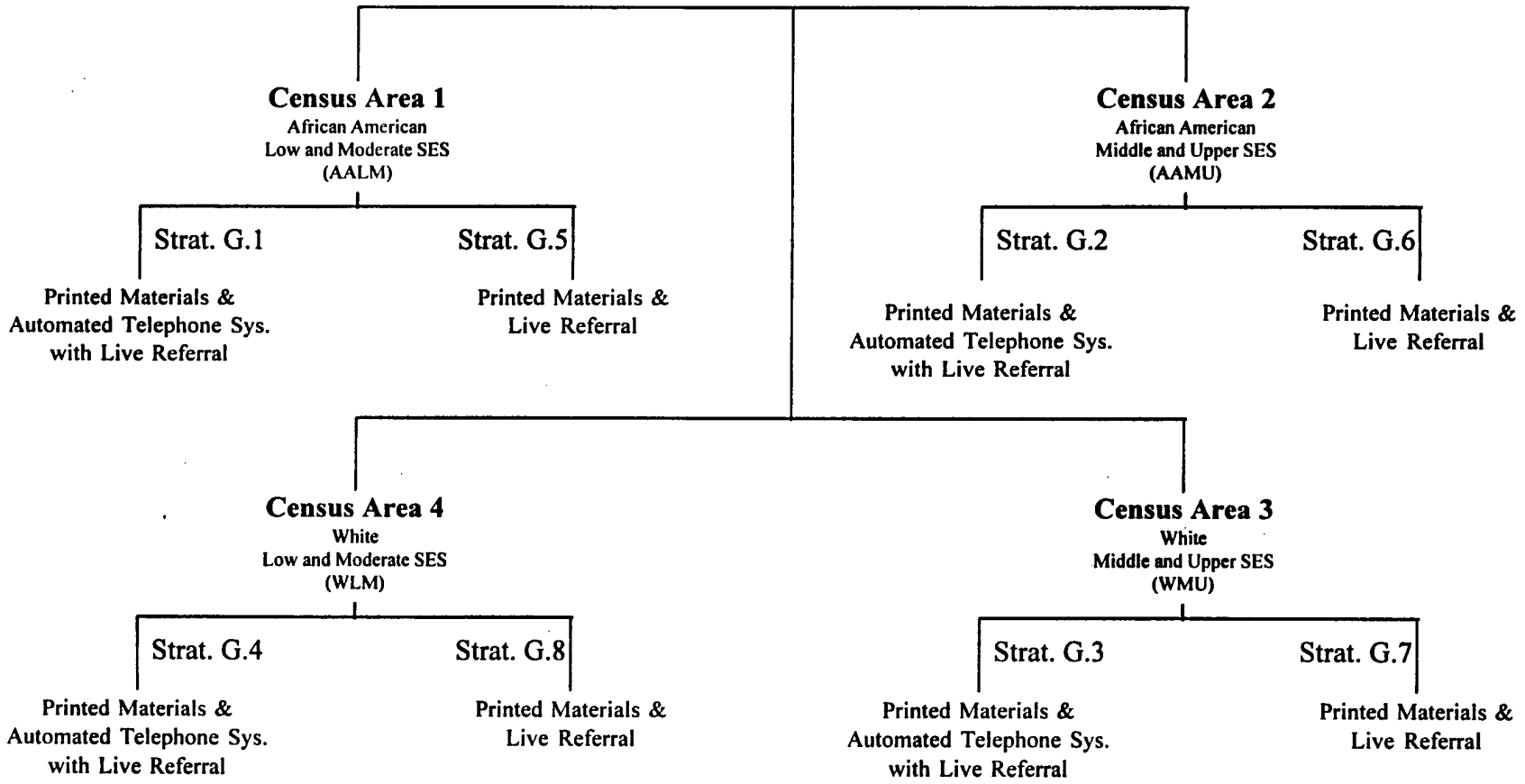
Table 4

Breast Health Cancer Research Design

POPULATION SCHEMATIC

Test 1

(Baltimore Region)



SES = Socio-Economic Status
Strat. G.x = Strategy Group x

TeleSonic
9/12/95

- Four target groups with mailing distributions noted in **Table 5** below were included in the Phase One Test:

Table 5: Mail Distribution to Treatment Groups

TARGETED INCOME GROUPS*	TREATMENT A	TREATMENT B	HOUSEHOLDS RECEIVING MAILING
1. Low to moderate income African-American	2,500	2,500	5,000
2. Middle to upper income African-American	2,500	2,500	5,000
3. Low to moderate income white	2,500	2,500	5,000
4. Middle to upper income white	2,500	2,500	5,000
TOTALS	10,000	10,000	20,000

- Treatment A households received printed material with live person referral.

- Treatment B households received printed material with instructions for using the multimedia automated telephone system with live referral option.

Data analyses: Quantitative and qualitative assessments were used to analyze the data received from this research. The Chi-square test was used to provide the quantitative assessments. Chi-square is both a test of association and a test of distributions. This test compares the frequency of observed and expected occurrences for the data samples. This statistical measure supports analyses of questions as to whether the differences observed to expected are sufficiently large enough to conclude that they did not occur by chance but reflect real differences. The Chi-square test shows the level of association between two categorical variables. In addition it can be used to show the strength of that association. A probability level of $p \leq .05$ was used to investigate the strength of the association between variables. The research results were analyzed under the statistical leadership of a statistical consultant from the University of Maryland Hospital in Baltimore, Maryland.

The research was designed to measure three different levels of behavior:

Behavior Level 1 - Basic call levels for each system
Behavior Level 2 - Any change in call pattern by callers
Behavior Level 3 - Subsequent behavior of callers as a result of information received

* Low to moderate income was defined as U.S. household incomes equal to $0-24,999 (1st and 2nd income quintiles). Middle to upper income was defined as U.S. household incomes equal to or greater than $25,000 (3rd through 5th U.S. income quintiles).

It was anticipated that each behavior level would have a different response pattern. The greatest level of response was anticipated at Behavior Level 1. This behavior level assessed the frequency of calls made during the test period. This level was the only behavior level for which information on past response patterns was readily available. As a consequence, expected frequency or expected values were based on patterns representative of this behavior level.

Data capture information in the past for telecommunications systems have basically focused on the level of throughput and the number of calls received. Therefore, assessing and comparing response patterns for Behavior Levels 2 and 3 that are directly tied to a telecommunications application became both a challenge for this research and a limitation.

Behavior Level 2 assessed any change of patterns in the callers' behavior that would make them more active users of information. These patterns of change were exemplified by such behaviors as the callers deciding to:

1. Repeat messages,
2. Call more than once,
3. Transfer to a live counselor from the automated system, and/or
4. Request information by fax or mail.

The final and more difficult behavior level to be assessed was Behavior Level 3. This behavior level examined the subsequent action of callers. It was exemplified by behaviors such as the caller embracing a new action as a result of obtaining the information provided. Actions might include the callers deciding to engage in self breast examinations, scheduling appointments with a medical practitioner, or scheduling a mammogram. Difficulty in assessing Behavior Level 3 existed because it was based on self reports, without verification. It was also based on capturing information from people volunteering to participate in follow up survey efforts. These difficulties reflect one of the limitations of this research effort.

Expected frequencies of response or expected values were developed based on past experiences of response rates for automated messaging systems, when compared to live responses systems. Information on Behavior Level 1 response patterns were available from experiences with information systems related to job lines, real estate areas, travel information, dating services, health services, retirement services, and the like.

Based on response patterns for other telecommunications applications, in general, the estimated calls to the live counselor system were originally projected at 5% for the first month and up to 7.5% for a three month period. As it relates to the automated information system, a higher response pattern was projected, 7% for the first month and up to 10% for a three month period. These response rates are achievable when appropriate advertisements and promotions are used to market the information systems.

Because these expectation levels were met and exceeded during the pretest, the adequacy of sampling size was calculated for each treatment group to be tested. Actual response rates were much lower, however. As a consequence, the adequacy of the required sample sizes for each treatment group was recalculated, to determine any need for expanding the population to be

tested. The recalculation showed that the size of the response level was appropriate for statistical analyses for Behavior Level 1. Response sizes were inappropriate for statistical analyses for Behavior Levels 2 and 3. Qualitative comments, however, were provided earlier in this section regarding these two behavior levels.

In addition to using Chi-square tests for quantitative statistical analyses, qualitative analyses were provided through summary notes of data obtained from the research and reactions from focus group assessments. The focus group reactions to the results produced a representative assessment of the validity of the data response for the appropriate targeted population.

Reports from these assessment tools are contained under the **Research Findings** section of this report, beginning on page 25.

B. Implementation of Phase One Test

The Phase One Test of the BHIP research was implemented during the three month period of September 14 through December 17, 1995. As previously noted, the basic design included the mailing of postcards to 20,000 households across the metropolitan Baltimore, Maryland area. The mailings were randomly assigned across a total of 634,750 households, affecting Baltimore City and the five central Maryland counties of Anne Arundel, Baltimore, Carroll, Harford, and Howard.

Within the affected households, the populations were segmented into four census area groups, each with two sub-groups. The four census areas included low to moderate African Americans and whites and middle to upper income census areas for the same racial groups. Each of the four groups were then further segmented by random assignment into Treatment A (households to receive the postcard about the live counselor system) and Treatment B (households to receive the postcard about the automated information system).

To control and monitor data results, postcards were printed with a separate telephone number for each of the eight treatment groups. This process allowed research staff to capture and segment caller activity by census area and treatment group. As a consequence, eight separate and unique telephone numbers were dedicated to this Phase One Test, each for a specific treatment group. Caller activity could therefore be analyzed by income and by race for any combination of assessments.

Identification of Households -The random assignment of the four groups into Treatment A and Treatment B was made after receipt of address labels to support the mailings to the specific addresses. This was accomplished by identifying a mail house that could provide address labels with the highest match to the number of households identified within the metropolitan Maryland census analyses. The two mail houses with the closest match in household counts were then assessed to determine their ability to provide geo-coded address labels to identify households within specific census blocks. Specific directions were given to the mail house regarding the selection process for the address labels. The key directions included five major steps:

1. Using census block group files to create the four defined census areas, which represent the qualifying addresses.
2. Assigning a random number to the addresses, using a random program generator.
3. Drawing 20,000 random addressees, 5,000 from each census area 1 to 4, in randomly selected groups A and B.
4. Assembling the eight sets of random census areas in zip code order.
5. Applying Cheshire labels and clearly marking the census sets for each of the four census areas as census lists 1A through 4B.

Once the address labels were received, a blind assessment was completed to determine the accuracy of the address information. The blind test included assessment of two to three 11 x 15 sheets of addresses from each of the four targeted groups. Note that the address labels were received with each of the four targeted groups labeled as a separate package of labels. Each of the four packages was broken into two sets of addresses: sets "A" and "B", corresponding with Treatment A and Treatment B for each of the four groups.

To assess the accuracy of the address labels, a page of address labels was taken from near the beginning, the middle or the end of each group. These were copied and all sheets were then mixed together without labels. Appropriate research staff were then asked to complete a demographic comparison by comparing the addresses from the sheet with the census block information to determine which of the four census groups the sheets represent. This blind test provided verification that the addresses were appropriately labeled as low to moderate income African American or white and as middle to upper income by the same racial groups. Once the address labels were verified, each set of four labels was then affixed to the postcards for mailing.

Mailing Process -The Phase One Test was designed to obtain responses over a three-month period, based on the expected response rates for telecommunication systems. Furthermore, the mailing to the 20,000 households was spread over an extended period of three week intervals, to ensure no system overload for either CIS or ACS. The mailing period and size were the same for each mailing interval . Each treatment group within the four target areas received 625 mailings for a total mailing of 5,000 for each mailing interval, based on the following schedule:

1st mailing:	September 13, 1995	625 mailings each treatment	Total mailings 5,000
2nd Mailing:	October 6, 1995	625 mailings each treatment	Total mailings 5,000
3rd Mailing:	October 26, 1995	625 mailing each treatment	Total mailing 5,000
4th Mailing:	November 17, 1995	625 mailings each treatment	Total mailing 5,000

The mail was processed through a two-phase effort. First, research staff prepared eight different sets for mailing. These sets included the postcard and the appropriate address

labels for each treatment group. A second staff member was assigned to verify the accuracy of the first staff person's efforts. The sets were placed into eight different mail bags and taken to a local mail house for mail preparation and final mailing.

The local mail house was responsible for affixing address labels to the postcard, sorting postcards by zip code, affixing stamps, then delivering the eight mail bags to the central post office for mailing. Since a mail house was responsible for a portion of the mailing effort, research staff monitored the mail process to determine actual dates the postcards were delivered to the US Postal Service. The mailing dates noted earlier represent the actual dates the mail bags were submitted to the US Postal Service.

All postcards were mailed bulk rate, address correction requested. The delivery date for bulk mail in the target area ranged from one to ten days, as reported by the postal service. The "address correction requested" stamp was used to increase the level of assurance that undelivered postcards were returned and therefore could be analyzed to determine delivery rates and any major variance by treatment groups.

The expected response rates were based on the assumption of responses over a three month period of exposure. Hence, the close out period for the data collection should have gone three months after the final mailing or February 17th. The data collection, however, was contained within a data collection period of three months from the first mailing, September 13 through December 17th. After data analyses, the data collection period was then augmented by focus group reviews.

Postcards were mailed to households designated as either Treatment A or Treatment B. Treatment A households received a postcard that promoted the opportunity to speak to a live counselor and get answers to individual questions. (See sample postcard for Treatment A, Live counselor information system, presented as **Appendix D**). The Treatment B households received a postcard that promoted the convenience of calling an information system, seven days a week, 24 hours a day. The postcard for Treatment B provided information about a "library" of prerecorded message topics that covered issues about breast health. (See sample postcard for Treatment B, automated information system presented as **Appendix E**).

Data Collection - An additional area of activity during the Phase One Test related to data collection. Caller activity was analyzed by examining caller logs. These caller logs provided identification of the telephone number being called (census area and treatment group) , time and date of call, length of call, and the different features used by callers. This information was captured for both the automated and the live counselor information system. As a note, however, once the caller to the live counselor transferred from the research system to CIS or ACS, the system could no longer monitor caller activity. Whether or not the caller was successful in accomplishing the call or experienced a "busy" could not be assessed. As a consequence, the prerecorded system messages gave each caller choosing to call CIS or ACS the direct telephone numbers so that manual dialing could be attempted at a later time if a "busy" was encountered.

Data on the call behavior by treatment group was collected automatically by a call log. It should be noted that the originating phone number of the call was not tracked, to protect the identity of callers. The only identifying information came from those callers who voluntarily offered to provide follow-on feedback. Computer program routines were written to purge data and generate reports on variables needed for research analysis. Data were purged to exclude staff calls for daily line qualification, review and system evaluation. These calls were coded for easy extraction. In addition, computerized calls into the system were purged based on computer programming patterns that were discerned. These included set patterns of seven calls to the same telephone number at six to seven second intervals. Call reports were also monitored to ensure that no calls were received from areas blocked from the call region.

Finally, calls were excluded for the four-day period of November 28th through December 1st for all treatment groups. These calls were excluded because of a highly atypical call pattern that was observed within one treatment group. The calls were outside of any normal range of calls for the treatment group. For this call period the daily average call was nearly three to four times the daily average calls during any other period. This occurred during a period when no mailings were recently delivered by the postal service. Nor was there any national newsworthy announcement affecting breast health or breast cancer . Some of the calls could be tracked and purged as a result of staff testing but others were still questionable. As a consequence, to ensure consistency of effort, calls were eliminated from all treatment groups for the period.

To ensure efficient functioning of the system, during the three month period, daily line qualification tests were conducted. These line qualification tests required that staff check the system to ensure that all lines were functioning, to check and identify any disruptive sounds or line interference, and to check the volume levels. Only minor interferences were identified, and corrected. No problems encountered during this period were significant enough to skew results from any treatment groups.

As a final note, the system operated on an "automatic pilot" during the three month implementation period. Once the system was developed and activated, all activities were directed toward monitoring the system for operational functionality, periodic mailing, and data collection.

Focus Group Review -Focus group discussions were held during the development and pretest of the BHIP research effort. These discussions proved invaluable in developing the mailing process and contents and in modifying system functions and content. As a consequence, when the review of the analyzed data showed overwhelming caller preferences for the automated system, it was concluded that additional focus groups might be helpful in gaining insight into the call behavior.

During the months of February, March, and April 1996, five focus group sessions were identified and held. These groups were identified by working with central Maryland organizations that work with women who are representative of the four census areas in our target groups. Five focus groups were used because decisions were made to request that each group participant voluntarily complete a pre-questionnaire before discussions.

This pre-questionnaire was designed to determine any changes in opinions and attitude, as a result of the discussions and to ensure appropriate income representation. Racial and gender representation were obvious. The pre-questionnaire showed that low income representation was not being provided from the expected groups, as a consequence, an additional focus group was identified.

Each group meeting took place during a lunch period, or just before or after lunch and included refreshments and an opportunity for general discussions over refreshments, before the discussion commenced. Each group followed the same process which included:

1. Introductions
2. Purpose
3. Summary of Phase One Test results
4. Completion of pre-questionnaire
5. An opportunity to listen to the automated messages and review the postcards, and
6. Discussion of six questions.

The focus group sessions lasted from one and one-half to two hours on the average. Members were asked if they would agree to have sessions recorded to ensure accuracy in reporting; all participants agreed. The information gleaned from the focus group process is described in the next section of this report, **Reactions from Representative Focus Groups**, beginning on page 42.

The next section in this report also describes the data collected and the findings from the Phase One Test effort.

C. Research Findings

1. Overall Findings

Overall, the findings from Test One research efforts showed a significant difference in the response pattern of callers. Caller results showed a preference for the automated information system compared to the live counselor information system. There was *no significant difference* in responses by race; however, differences were observed between income groups.

The number of telephone calls from the African American and white census areas were about the same, a little better than 300 each. Overall, 650 calls or a response level of 3.3% was received. Although the response level is less than originally anticipated, it was twice as high as the response pattern of approximately 2% that is considered good from direct mailing, and is large enough to assess areas of significance between treatment groups.

During the original design and planning stage, it was acknowledged that a mail outreach strategy without any related outreach support would not be as effective as other more aggressive or direct outreach efforts. However, it was concluded that a mail outreach strategy would provide the cleanest design for clearly assessing any difference in responses for the targeted populations. As a consequence, to control for seepage, the general usage of advertisement and promotions were eliminated. The overall research design incorporates a more aggressive or direct outreach system for the subsequent test. Augmenting the mailed postcard with the use of community support systems and/or radio announcements is under consideration. This and other advertisement and promotion strategies are generally used to support and encourage higher responses to telecommunications information systems.

Without the normal advertisements and promotions to market the information systems, the total number of calls were 650 or a 3.3% response rate. The number of calls from lower income census blocks were significantly higher than those coming from middle to upper income census blocks (376 compared to 274). This pattern was fairly consistently observed within the two racial groups. The comparison of responses from lower to moderate versus middle to upper income levels were 195 to 133 for African American census areas, and 181 to 141 for white census areas.

Tables 6, 7, 8, 9, and 10 on the following pages summarize these results. These tables show that significant results exist in two areas: (1) preference for the automated telephone system, and (2) response pattern from low to moderate income groups. More detailed data reports are presented in **Appendix I, Phase One Data Reports**.

Table 6 : Comparison of Overall Call Responses

Exposure	Mailings	Calls	Response	X^2(p-value)
Automated	10,000	406	4.1%	41.7(p<0.001)
Live	10,000	244	2.4%	
Total	20,000	650	3.3%	

Note: Shaded area reflects statistically significant differences.

Table 7 : Comparison of Call Responses by Income and Racial Groups

Exposure	Mailings	Calls	Response	X^2(p-value)
African American	10,000	328	3.3%	0.057(p=0.811)
white	10,000	322	3.2%	
Low-Moderate	10,000	376	3.8%	16.5(p<0.001)
Middle -Upper	10,000	274	2.7%	
African American				
Low-Moderate	5,000	195	3.9%	12.1(p<0.001)
Middle-Upper	5,000	133	2.7%	
white				
Low-Moderate	5,000	181	3.6%	5.1(p=0.02)
Middle-Upper	5,000	141	2.8%	
Low -Moderate				
African American	5,000	195	3.9%	0.542(p=0.462)
white	5,000	181	3.6%	
Middle-Upper				
African American	5,000	133	2.7%	0.24(p=0.624)
white	5,000	141	2.8%	

Note: Shaded areas reflect statistically significant differences.

Table 8 : Comparison of Call Responses by Treatment Within Racial and Income Groups

Exposure	Mailings	Calls	Response	X^2(p-value)
African American				
Automated	5000	200	4.0%	16.3 (p<0.001)
Live	5000	128	2.6%	
white				
Automated	5000	206	4.1%	26.0 (p<0.001)
Live	5000	116	2.3%	
Low-Moderate				
Automated	5000	231	4.6%	20.4 (p<0.001)
Live	5000	145	2.9%	
Middle-Upper				
Automated	5000	175	3.5%	21.7 (p<0.001)
Live	5000	99	2.0%	
Low-Moderate				
African American				
Automated	2500	114	4.6%	5.81 (p=0.016)
Live	2500	81	3.2%	
white				
Automated	2500	117	4.7%	16.1 (p<0.001)
Live	2500	64	2.6%	
Middle-Upper				
African American				
Automated	2500	86	3.4%	11.7 (p=0.001)
Live	2500	47	1.9%	
white				
Automated	2500	89	3.6%	9.99 (p=0.002)
Live	2500	52	2.1%	

Note: Shaded areas reflect statistically significant differences.

Table 9: Comparison of Call Responses to the Automated Information System

Exposure	Mailings	Calls	Response	x^2 (p-value)
African-American	5000	200	4.0%	0.09 (p=0.761)
white	5000	206	4.1%	
Low-Moderate	5000	231	4.6%	8.05 (p=0.005)
Middle-Upper	5000	175	3.5%	
Low-Moderate				
African-American	2500	114	4.6%	0.041 (p=0.84)
white	2500	117	4.7%	
Middle-Upper				
African-American	2500	86	3.4%	0.053 (p=0.817)
white	2500	89	3.6%	
African-American				
Low-Moderate	2500	114	4.6%	4.08 (p=0.043)
Middle-Upper	2500	86	3.4%	
white				
Low-Moderate	2500	117	4.7%	3.97 (p=0.046)
Middle-Upper	2500	89	3.6%	

Note: shaded areas reflect statistically significant differences.

Table 10: Comparison of Call Responses to the Live Counselor Information System

Exposure	Mailings	Calls	Response	x^2 (p-value)
African-American	5000	128	2.6%	0.605 (p=0.437)
white	5000	116	2.3%	
Low-Moderate	5000	145	2.9%	8.89 (p=0.003)
Middle-Upper	5000	99	2.0%	
Low-Moderate				
African-American	2500	81	3.2%	2.05 (p=0.152)
white	2500	64	2.6%	
Middle-Upper				
African-American	2500	47	1.9%	0.258 (p= 0.612)
white	2500	52	2.1%	
African-American				
Low-Moderate	2500	81	3.2%	9.27 (p=0.002)
Middle-Upper	2500	47	1.9%	
white				
Low-Moderate	2500	64	2.6%	1.27 (p=0.26)
Middle-Upper	2500	52	2.1%	

Note: shaded areas reflect statistically significant differences.

In addition to the information on call volume patterns, some additional results were observed from the Phase One test research effort. These include caller preference as it relates to the time of day, specific messages accessed, and postcard return patterns.

Timing of Calls: Evenings and Sundays were the peak call times for the automated system, whereas Wednesday evenings was the peak calling period to the live counselors. Callers from the African American census groups used Monday and Wednesday evenings as their peak call times for the automated system, and Thursday afternoons and Wednesday evenings as their peak call times to the live counselor. Callers from the white census areas preferred weekend evenings for calls to the automated information system and Wednesday evening and Friday afternoons as their peak call periods to the live counselor.

Except for callers from the low to moderate African American income area, caller preferences were for evening calls. Low to moderate income African American census areas showed call time preferences of Thursday afternoon for the live counselor system. There was much variation in the preferred call days with no observable consistent pattern beyond the evening preferences, except as previously noted. Clearly, the call-time preferences indicate obvious considerations for when users are most likely to access telecommunications information systems. These patterns will be further examined and compared in the subsequent test efforts.

Table 11, on the following page, summarizes the high/low call periods for each treatment group.

Table 11: High and Low Calling Periods

	Strategy				***Ethnicity***		***Income Level***		
Call Periods	AALM	AAMU	W LM	W MU	AA	W	LM	MU	Overall
Call Volume Peak - Overall	Mon. Eve.	Wed. Eve.	Sun. Eve	Sun. Eve.	M &W Eve.	Sun. Eve.	Sun. Eve.	Wed. Eve.	Evenings
Lowest Call Volume- Overall	Night	Night	Night	Night	Tue,F & Sat night	Night & Sun. morn.	Tue. & Sat. night	Night	Tue. & Sat. nights
Peak- Auto	Mon. Eve.	Wed. Eve.	Sun., F & Sat Eve.	Sun Eve & M Aft.	Wed. Eve.	Sun Eve & M Aft.	Sun. Eve	Sun & Fri. Eve.	Evenings
Call Volume Peak- Live	Thurs. Aft.	Wed. Eve.	W Eve & Fri Aft	Wed. Eve.	Fri. Morn	Wed. Eve	Mon. Eve.	Fri. Morn .	Evenings
Lowest C Volume-Auto	Night	Night	Night	Night	Night	Night	Night	Night	Night
Lowest C Volume-Peak	Night	Night	Night	Night	Night	Night	Night	Night	Night

Definition of time periods: Morning = 6am - 12pm; Afternoon =12pm-6pm; Evenings=6pm-12am; Night=12am-6am
Strategy Abbreviations: AA= African American Census Area; W=white Census Area; LM=low to moderate income group; MU=Middle to upper income group

Mail Returns: A postage paid return label was used to track the number of returned postcards (due to incorrect address information) and to determine the degree to which delivery of the postcards appeared highly likely. Using this process, just over 600 postcards were returned from the total mailing, a return rate of 3%. Hence, this low return rate give high assurance of the accuracy of the distribution or mail receipt process for both the automated and live treatment strategies. This same pattern on low postcard return was also observed during the pretest.

It should be noted that if the total number of returned postcards were subtracted from the total mailings, the overall response rate would be 3.4% rather than 3.3%.

The return rates are summarized by racial and income group in **Table 12**, on the following page.

Table 12: Rate of Return on Mailed Postcards

	Strategy				*Ethnicity*		*Income Level*		
Data Category	*AA LM*	*AA MU*	*W LM*	*W MU*	*AA*	*W*	*LM*	*MU*	*Overall*
No. Mailed (One half to each treatment group)	5000	5000	5000	5000	10,000	10,000	10,000	10,000	20,000
No. postcards returned- Auto & Percentage return	78@ 3.12%	46@ 1.84%	114@ 4.56%	57@ 2.28%	124@ 2.48%	171@ 3.42%	192@ 3.84%	103@ 2.06%	295@ 2.95%
No. postcards returned- Live & Percentage return	70@ 2.8%	52@ 2.08%	144@ 5.76%	51@ 2.04%	122@ 2.44%	195@ 3.9%	214@ 4.28%	103@ 2.06%	317@ 3.17%

Strategy Abbreviations: AA= African American Census Area; W=white Census Area; LM=low to moderate income group; MU=Middle to upper income group

2. *Findings Related to the Hypotheses*

Major Hypothesis

Multimedia automated telephone systems enhance live referral alone as a vehicle to reach the informationally hard-to-reach.

The overall assessment tentatively confirmed this hypothesis for the Phase One Test data. As shown in **Table 6** on page 26, there is a significant difference in the response pattern of the callers, with a preference for the automated system. This pattern was consistent across racial groups and income groups. Moreover, an examination of the call responses and the Chi-square results in **Table 8**, on page 27, show that for each racial group and income level examined, callers' responses showed a statistically significant preference for the automated information system.

Related Hypotheses[*] :

1. Callers overall will show a greater tendency to call a multimedia automated telephone system combined with live referral than to call the live referral alone. (Analyses of results from all tests)

This related hypothesis is confirmed by the analysis of results shown in **Table 6** on **page 26**. Of the 650 calls, 406 calls were made to the automated system and 244 were made to the live information system. The Chi-square value (X^2 41.7) has a probability of $p<0.001$. The analyses in **Table 8** on page 27 show the callers' preference for the automated information system for both racial groups and income levels examined.

This assessment will be compared to the data received from a different region in subsequent tests, where the outreach strategy will be modified.

[*] Related hypotheses were restated to simplify wording.

2. Within racial groups, callers at different SES levels will show significant differences in caller preferences for use of a multimedia automated telephone system with a live referral option compared to live referral alone . (Analyses of Phase One Test and Subsequent test to compare different regions)

This related hypothesis is tentatively confirmed by the results from the Phase One Test. **Table 7** on page 26 shows that there is a significant difference between call preference by income levels. Callers from low to moderate income levels showed a significantly greater response pattern overall, compared to middle to upper income groups (376 calls vs. 274 calls, with a X^2 of 16.5 and probability of $p<0.001$).

In addition, callers from both the low to moderate and middle to upper income groups showed a pattern of significant preference for calling the automated system compared to the live counselor systems. From **Table 8** on page 27, call comparison results by income levels reflect X^2 values of 20.4 and 21.7, respectively, for low to moderate and middle to upper income census areas. These X^2 values both have probability values of $p<0.001$. Hence, callers from the low to moderate income census groups as well as callers from the middle to upper income census areas, showed caller preference for the automated information system.

Moreover, within racial groups this income difference was also observed. **Table 7** on page 26 shows a statistically significant difference in response pattern for low to moderate and middle to upper income callers from African-American and white census areas. Of the 328 callers from the African-American census areas nearly 60% or 195 callers were from low to moderate census areas. The same pattern was observed for callers from the white census areas with 181, or 56%, of the 322 callers represented by low to moderate income areas. For both racial groups these differences in responses by income are significant.

Tables 9 and **10** on pages 27 and 28 are examined to look at differences in caller preferences by income groups and within race. For callers to the automated information system, the X^2 results from Table 8 show significant differences between low to moderate and middle to upper income callers for both African-American and white census areas. The X^2 and p values reflect significant differences of 4.08 ($p=0.043$) and 3.97 ($p=0.046$) for African-American and white census areas. Hence, the hypothesis of caller differences by SES within racial groups is sustained for callers to the automated information system. When **Table 9** is examined for live counselor calls, mixed differences were observed. The caller response pattern for callers from the African-American census area show significant differences between callers from low to moderate and middle to upper census areas ($X^2 = 9.27$ and $p=0.002$).

However, no statistical difference is observed between callers from low to moderate and middle to upper white census areas ($X^2 = 1.27$ and $p=0.26$). Hence the hypothesis of an SES difference within this racial group is rejected for the live counselor information system.

This assessment will be compared to the data received from a different region in subsequent tests, where the outreach strategy will be modified.

3. Callers at lower SES levels will show a significant preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone. (Analyses of Phase One Test and Subsequent test to compare different regions)

This related hypothesis is tentatively confirmed by the results from the Phase One test. **Table 7** on page 26 shows a significant preference for the automated telephone system for callers from both low income census areas. Within each racial group the X^2 values of 12.1 and 5.1 for callers from the African American and white census areas, respectively, were significant with probability levels of $p<0.001$ and $p=0.02$.

When **Table 8** on page 27 is examined, to look at caller preferences for each racial group the hypotheses is also supported with X^2 values of 5.81 ($p=0.016$) for African Americans and 16.1 ($p<0.001$) for the white census groups. Hence, both African American and white census areas callers from low to moderate income areas showed a significant preference for the automated information system compared to callers from the middle to upper income area in the same racial groups.

Tables 9 and **10** show no significant differences between the response pattern of callers from lower SES census areas by race; their response pattern was basically the same. In addition, the callers from lower SES census areas had a significant response to both information systems, automated and live counselor, when compared to callers from the middle to upper income group.

This assessment will be compared to the data received from a different region in subsequent tests, where the outreach strategy will be modified.

4. Repeat callers will show a greater tendency to switch from a multimedia automated system to the live referral option. (Analyses of results from all tests)

Based on feedback and analyses, the technical component of the system that measured repeat callers was eliminated from the test effort after feedback during the pretest. As a consequence, this hypothesis could not be directly assessed. The ability to track repeat callers will be reexamined in subsequent test efforts.

5. Callers with higher SES levels across racial groups will show significant differences by racial groups in their preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone. (Comparison of these Phase Ones Test results will be made in a different region in subsequent tests)

This related hypotheses was not confirmed by the Phase One Test results. In essence, there is no significant difference between the caller preference of middle and upper income areas from different racial groups. The call patterns are similar across racial groups. This information is reflected in **Tables 7, 8, 9,** and **10,** on pages 26 through 28. Overall a similar number of callers from the African-American and white census areas responded to the postcards (328 African-Americans and 322 whites). In addition a similar number of

higher SES callers responded to the postcards. Based on a similar number of calls for each group (133 vs. 144 for African American and white census areas, respectively) Table 6 shows no significant X^2 results (X^2 of 0.24 with p=0.624).

When the **Table 8**, on page 27, comparisons are examined for differences in call pattern for middle to upper income groups, both the African American and white census areas demonstrated basically the same call pattern. Both groups show a significant call pattern preference for the automated information system. The X^2 and p values for both middle and upper income groups are 11.7 (p=0.001) and 9.99 (p=0.002) for the African American and white census areas, respectively. **Tables 9** and **10** on pages 27 and 28 illustrate the same pattern of no difference in call pattern for higher SES callers to both the automated and live counselor information systems. Hence the call pattern for both groups are basically the same and the hypothesis of a racial difference in response pattern of higher SES levels is not supported. The lower income groups by race also show significant preference for the automated system, but display no difference in response pattern.

This assessment will be compared to the data received from a different region in subsequent tests, where the outreach strategy will be modified.

6. Callers with lower SES across racial groups will show a preference for the use of a multimedia automated telephone system with a live referral option compared to live referral alone. (Comparison of Phase One Test will be made with a subsequent test in a different region)

This related hypotheses is tentatively confirmed by the Phase One Test results. Callers from low to moderate income census areas show a significant preference for the automated telephone system regardless of racial differences.

When the **Table 8** comparisons on page 27 are examined for differences in call pattern for lower to moderate income groups, both the African American and white census areas demonstrated clear caller preferences. Both groups show a significant call pattern preference for the automated information system. The X^2 values for low to moderate income groups are 5.817 (p=0.016) and 16.1 (p<0.001) for the African American and white census areas, respectively. **Tables 9** and **10** on pages 27 and 28 restate the same pattern of no difference in call pattern for higher SES callers to either the automated or live counselor information systems. Hence the call pattern for both groups show a pattern of preference for the automated information system, compared to the live information counselor.

Moreover, when **Table 9** on page 27 is reviewed, the Chi-square results show significant caller preference for the automated information system for low to moderate income callers from both the African-American and white census areas compared to callers from middle to upper income census areas. Chi-square and p values of 4.08 (p=0.043) and 3.97 (p=0.046) are calculated for drawing comparisons of callers from African-American and white census areas, respectively, for the automated information system responses.

However, observations also revealed the unexpected and statistically significant preference for calling the live counselor system by callers from the low to moderate income, African-American census area. This call pattern was unexpected. **Table 10** on page 28 shows that callers from the low to moderate African-American census area called the live counselor system at a rate of 81 calls, compared to 47 calls for the middle to upper income callers, a significant difference. No difference or significant preference was observed in the call pattern of callers from white census areas to the live counselor information system.

This assessment will be compared to the data received from a different region in subsequent tests, where the outreach strategy will be modified.

7. A culturally sensitive outreach strategy will increase caller volume compared to a less-culturally focused outreach strategy.

This hypothesis will be assessed in a subsequent test which will change the outreach strategy.

8. Callers in different geographical areas will show a significant preference for a multimedia automated telephone system with live referral compared to live referral alone.

This hypothesis will compare test results from the Phase One and subsequent test.

3. Findings Related to Key Questions

As previously noted, there are eight minimum data collection requirements in support of the hypotheses. A summary of the research findings are presented in the **Table 13** for each of the assessed data points:

Table 13: Data Related to Key Questions

Key Data Collection Questions	AALM	AAMU	WLM	WMU	TOTALS
1. Number of callers from a particular area	195	133	181	141	650
2. Number of topics accessed by a caller,	68	63	25	44	200
preferences for calls taking the personal	6	7	5	1	19
assessment					
3. Number of callers who transferred to a live counselor	0	0	0	0	0
4. Number of repeat callers	dropped	dropped	dropped	dropped	NA
5. Analysis of caller assessments with caller topical preference, including live counselor transfers by call census area	see below	see below	see below	see below	see below
6. Number of calls requesting fax or hard copy	3	2	3	3	11
7. Number of callers providing requested feedback or					
responding to follow-up surveys	7	7	4	0	18
8. Tracking of repeat caller preferences in					
terms of topics and transfers to live counselors	dropped	dropped	dropped	dropped	dropped

Strategy Abbreviations: AA= African American Census Area; W=white Census Area; LM=low to moderate income group; MU=Middle to upper income group

As noted earlier within the research design section of this report, three types of behaviors will be measured. The key questions address different behavior levels. The behavior types are described as follows:

Behavior Level 1 - Basic call levels for each system
Behavior Level 2 - Any change in call pattern by callers
Behavior Level 3 - Subsequent behavior of callers as a result of information received

It was anticipated that each behavior level would have a different response pattern. The greatest level of response was anticipated at Behavior Level 1. In brief, this behavior level assessed the frequency of calls made during the test period. This level was the only behavior level for which information on past response patterns are readily available. As a consequence, assessing and comparing response patterns for Behavior Levels 2 and 3 that are directly tied to a telecommunication application become both a challenge for this research and a limitation.

Behavior Level 2 assessed any change of patterns in the callers behavior that would make them more active users of information. These pattern changes were exemplified by such behaviors as the callers deciding to:

1. Repeat messages,
2. Call more than once,
3. Transfer to a live counselor from the automated system, and/or
4. Request information by fax or mail.

The final and more difficult type of behavior assessed was *Behavior Level 3*. This behavior level examined the subsequent action of callers. It was exemplified by behaviors where the caller embraced a new action as a result of obtaining the information provided. Actions might include the callers deciding to engage in self breast examination, scheduling appointments with a medical practitioner, or scheduling a mammogram. This behavior type is based on self reports compared to the observable data that were captured for Behavior levels 1 and 2.

Two data points were available to provide a small data source related to this behavior. The first relates to volunteering to complete an on-line assessment of the automated information system.

The most prevalent behavior types to be assessed by these key questions are noted in **Table 14** on the following page.

Table 14: Key Questions and Behavior Levels Assessed by Information System

Key Data Collection Questions	Behavior Level 1	Behavior Level 2	Behavior Level 3	Automated System	Live Counselor
1. Number of callers from a particular area	√			√	√
2. Number of topics accessed by a caller, &	√	√		√	
preferences for taking the personal assessment		√		√	
3. Number of callers who transferred to a live counselor		√		√	
4. Number of repeat callers		√		dropped	dropped
5. Analysis of caller assessments with caller topical preference, including live counselor transfers, by call census area		√		√	
6. Number of calls requesting fax or hard copy		√		√	
7. Number of callers providing feedback and responding to follow-up surveys		√	√	√	√
8. Tracking of repeat callers preferences in terms of topics and transfers to live counselors		√		dropped	dropped

The BHIP research was initiated with the intent to collect data to test these eight key questions as well as the hypotheses. Findings from the pretest required modifications to these plans. Specifically, the ability to directly track repeat caller questions (question number 4) was eliminated, with the need to make technical adjustments to the call flow. These two questions would have added to the information sources available to assess patterns related to examining Behavior Level 2 information seeking patterns. Other available data will be used instead, although these data sources are not directly linked.

For all other questions, tentative data were captured. Although responses to the remaining questions provide informative insight, the sample size is insufficient to suggest future behaviors. They do suggest further research needs, however. Adjustments to subsequent test efforts will be designed to help address some of the more critical components of these remaining questions.

Key Question # 1 (Number of callers from a particular area) Discussions about the number of calls were included in the previous section. In summary, a total of 650 calls were received, representing a response rate of about 3.3% from the total mailings. This response rate was much smaller than the general response rate to telephone information systems, when the systems are promoted with *ongoing* advertisement and promotions. Yet it was approximately twice the size of direct mail responses. The responses were large enough to show significant preference for the automated messages information system by all callers. The response pattern was similar across racial groups but significantly different across income groups. There was a distinct pattern of difference between the response of callers in the low to moderate income groups and the middle to upper income groups.

Key Question # 2 (Number of topics accessed by a caller, general preferences, preferences by census area, preferences for callers taking the personal assessment) This second key question addressed by the BHIP research relates to the caller's topical preference within the automated information system. A total of 200 messages were listened to by all callers. Although the total number of messages accessed were not large enough for statistical analysis,

it provided a very clear pattern that should be examined in subsequent tests. A summary report of message selection patterns is presented in **Table 15 Topics Chosen by Census Area** on the following page.

The automated information system had 200 calls made from African American and 206 from white census areas. Overall, approximately 50% of all callers to the automated information system listened to messages, or a total of 190 callers. Of the total messages accessed, the number of messages called from the African American census groups totaled 131 messages from 121 callers. Sixty-six callers from the white census groups listened to the remaining 69 messages. Although the number of messages accessed were insufficient to report statistical differences, clear patterns were revealed:

Racial Differences

The African American census groups accessed the messages at a rate that was nearly 100% greater than the white census area groups, yet the call volume to the automated information system for both groups was basically the same .

Of the 200 calls to the automated information system from the African American census area, 121 of them connected to messages--a 60% throughput rate.

Of the 206 calls to the automated information system from the white census area, 66 of them connected to messages--a 32% throughput rate.

Income Differences

Low to moderate income census areas reflected actual throughput of 87 calls connecting to messages from an initial 231 accesses, a throughput rate of 37%.

Middle to upper income census areas reflected actual throughput of 106 calls connecting to messages from the 175 accesses, a through-put rate of 61%.

Additionally, patterns were noted in the message preference by racial group. It was assumed that the African American census area would show a higher call preference for the message "Breast Cancer and African American Women" when compared to the white caller. This assumption was borne out, with eighteen callers from the African American census area calling this message, compared to two callers from the white census area. This same pattern, however, was observed for the message, "All about mammograms". Twenty callers from the African American census areas called this message, compared to only three callers from the white census area.

Table 15

Topics Chosen by Census Area

	African-American				White			
	Low-Moderate		Middle-Upper		Low-Moderate		Middle-Upper	
	No. Callers	No. Times	No. Callers	No. Times	No. Callers	No. Times	No. Callers	No. Times
What is Breast Cancer	6	7	3	3	4	4	4	4
Breast Cancer is Curable	3	3	2	2	2	2	2	3
Breast Cancer myths	3	3	3	3	1	1	2	2
Every breast lump..	6	7	5	5	2	2	4	4
Breast Cancer& Afr-Amer	8	8	10	10	0	0	2	2
Men, you can get Brst Ca	2	2	2	2	0	0	2	2
Are you at risk...	4	4	3	3	3	4	4	3
Risk factors	*0*	*0*	*2*	*2*	*1*	*1*	*0*	*0*
Birth Control Pills	*1*	*1*	*0*	*0*	*1*	*1*	*2*	*2*
Life Style Risk	*2*	*2*	*1*	*1*	*1*	*1*	*3*	*4*
Lower your risk	4	4	1	1	2	2	4	4
Role of diet	*2*	*2*	*1*	*1*	*0*	*0*	*1*	*1*
Role of exercise	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
Breast examination	1	1	2	2	1	1	1	1
All about mammograms	8	10	9	10	2	2	1	1
Where to get mammogram	*2*	*2*	*5*	*5*	*2*	*2*	*0*	*0*
Frequency	*5*	*6*	*5*	*6*	*0*	*0*	*0*	*0*
More information	3	3	1	1	0	0	0	0
Treatment of breast cancer	0	0	1	1	0	0	3	3
Surgery	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
Treatment	*0*	*0*	*1*	*1*	*0*	*0*	*1*	*3*
Research	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
Life after breast cancer	0	0	1	1	0	0	1	1
Community bulletin board	1	1	1	1	0	0	0	0
Support a friend, etc.	2	2	2	2	2	2	1	1
TOTAL	63	68	61	63	24	25	42	44

Overall, a total of 48 calls were made to all four messages about mammograms. Upon examination, callers from the African American census areas made 43 of these calls; callers from the white census areas only made 5. The calls from the African American census areas to these messages were equally distributed across income levels. Twenty-one of these calls were from the low to moderate income groups and 22 were from the middle to upper income groups. This call pattern raises a number of questions that bear further examination in subsequent tests. Among others, a key question to be raised includes: "Is there an over-saturation or under-saturation of mammogram information based on race?"

No other message access patterns were skewed, either by racial grouping or by income grouping. Although it is worthy to note that the messages about treatment of breast cancer, including surgery and research ,were basically of interest to only the middle to upper income white census areas.

Again, it should be noted that the data on messages were too few in number to draw any conclusions. As a consequence, this issue will be an area of focus for the subsequent comparison test.

Question Number 2 also references the issue of the personal assessment or personal profile. The personal profile is used to offer assistance in message selection for callers who have identified health background and related information needs. The personal profile is presented as a short "Yes" or "No" quiz that raises four questions.

1. Are you a female?
2. Is there a history of breast cancer in your immediate family, for example; your mother, father,
   sister, or brother?
3. Have you had your breasts examined by a doctor or nurse in the past year?
4. Do you have, or do you think you have, breast cancer now?

Callers who choose this path in the call flow volunteered to answer these four questions. They received a reference number that identified suggested messages for the callers to review.

Of all callers to the system, only 19 took the personal profile. As a consequence, insufficient data existed for any meaningful analyses. It should be noted, however, that the callers who took the personal profile are distributed in a pattern that is skewed toward greater use of this feature by the African American callers and by low to moderate income callers. It is assumed that callers taking the personal profile were seeking assistance before proceeding with the use of the system. Again, this assessment will be included in the subsequent comparison test. This summary information on the personal profile is reflected as follows: African Americans census areas, 13 callers; white census areas, 6 callers; low to moderate income areas, 11 callers; and middle to upper income areas, 8 callers.

Key Questions # 3 , 5 and 6 relate to a Behavior Level 2 assessment. These questions look at any changes in call pattern behavior once the caller accesses the system. Question 3 is designed to assess the caller's interest in and willingness to seek live counselor support through the

system transfer feature. Question 5 examines the caller's message choices. And Question 6 assesses the caller's interest in and willingness to seek additional information.

Related to Question 3, no callers to the automated information system took advantage of the opportunity to transfer to the live counselor while on the same call, although callers were given the telephone numbers for both the ACS (American Cancer Society) and CIS (Cancer Information Service). There was no tracking information on subsequent actions taken in this area. However, there were a number of other behaviors that were indicative of Behavior Level 2 actions.

Caller actions related to Questions 5 and 6 provide examples of these behaviors. These behaviors required that the caller move to active participation in seeking information in one form or another. To demonstrate these behaviors, the caller had to be more assertive in the information seeking process. The major indicative behaviors are summarized below in **Table 16** as follows:

Table 16: Summary of Behavior Level Two Actions

Summary of Behavior Level Two Actions	*Racial Group*		*Income Level*	
	AA	*W*	*L-M*	*M-U*
1. Accessing the personal profile — 16 callers, 19 profiles, 3 repeats	11,13,2	5,6,1	9,11,2	7,8,1
2. Accessing messages— 190 callers, 200 messages, 10 multiples	124,131,7	66,69,3	87,93,6	103,107,4
3. Requested a hard copy document (by fax or mail) —12 callers, 17 requests, 5 multiples	10,15,5	2,2,0	5,8,3	7,9,2
4. Committed to follow-up survey (on-line) –17 inquiries, 14 provided contact information , 3 incomplete	13,10,3	4,4,0	13,11,2	4,3,1
5. Completion of the on-line system evaluation assessment– 17 inquiries, 15 completions, 2 incomplete	13,13,0	4,2,2	13,11,2	4,4,0
6. Utilized the operator on-line services—26, callers, 29 requests, 3 multiples	15,15,0	11,14,3	16,19,3	10,10,0

Strategy Abbreviations: AA= African American Census Area; W=white Census Area; LM=low to moderate income group; MU=Middle to upper income group . The sets of three numbers in the table represent the values described for each behavior type.

Although the information presented in **Table 16** is insufficient in size to provide statistically significant assessments, it provides summary information which highlights very clear trends related to the usage of the automated system and the willingness of users to actively seek information sources. A review of the racial assessment showed that all the Behavior Level 2 activities were more frequently displayed by the African American census area callers. The activities of this group were by far more prevalent when compared to callers from the white census areas. Utilization of the operator on-line feature was the only activity that showed close to a comparable usage by callers from the white census areas.

A review by income level showed a more balanced utilization. Lower to moderate income callers had higher utilization of certain features, yet middle to upper income area callers also had specific areas where their utilization was higher.

In addition to a review of the behavior patterns by race and income, it is also worthy to note those examples of duplicative or repetitive behaviors. As stated earlier the system feature to track the number of repeat callers was disabled. However, a close review of Table 16 illustrates a few repetitive behaviors. These include listening to multiple messages, requesting multiple hard copy documents, and transferring to the operator for assistance more than once. A review of callers, telephone logs also showed some callers engaged in the following repetitive behaviors. These included retaking a profile while providing different responses and listening to the same message.

Table 16 and other qualitative data provides information on activity levels by racial group and income levels for the key questions affecting Behavior Level 2 actions. These include such behaviors about the usage of hard copy information (question 6), and willingness to provide evaluative information or feedback.

The charts summarized as **Appendix I** provide summary information which highlight information that is helpful in assessing a number of the key questions as well as other data points presented from the Phase One Test.

Key Questions # 7 (Number of callers by census area who responded to follow-up survey)- The final key question that has not been addressed is summarized both with infor mation from Table 17 on the following page and with information from follow-up survey polls. These two components were designed to get information that would be helpful in improving the system. In addition these questions were designed as a crude measure of assessing subsequent behaviors that would occur as a result of exposure to the information systems.

Fifteen callers agreed to participate in the on-line evaluation component. This caller feedback component asked for voluntary responses to three questions. The questions asked for an age range, the source for obtaining the information about the system, and actions to be taken. This last question was included to identify planned subsequent behaviors. All participants in this self-reporting assessment indicated plans to engage in behaviors that are more proactive in addressing breast cancer. The only attempt to assess the caller's actual follow-through came from a follow-up survey. The responses to the on-line subsequent behavior question are presented below:

Table 17: Summary of On-line Reports of Planned Subsequent Behaviors

"Planned" Subsequent Action	STRATEGY				RACE		INCOME		TOTAL
	AALM	AAMU	WLM	WMU	AA	W	LM	MU	
1. Self Breast Examination	4	0	1	0	4	1	5	0	5
2. Get Mammogram	3	3	0	0	6	0	3	3	6
3. Schedule Doctor's Appt.	2	1	1	0	3	1	3	1	4
4. None of the above	0	0	0	0	0	0	0	0	0

In addition to the on-line self reports of planned subsequent behaviors, a follow-up telephone call was made to persons agreeing to participate in a follow-up assessment. These calls were made 45 to 60 days after the participants made a call to the information system. Participants included callers to both the automated and live counselor systems.

A total of 14 persons left either their names and addresses or their telephone numbers on the on-line system, indicating their willingness to participate in the follow-up survey. In addition, four people volunteered through a response card after receipt of a "thank-you" gift. Of the total 18 callers participating, follow-up telephone calls were completed for only 8. The 18 anticipated respondents included 11 callers to the automated system and seven callers to the live counselor system. Closure was not completed on the other ten because of incorrect or non-working telephone numbers, failure to obtain responses from messages that were left, and failure to reach the intended parties.

The summary of the eight completed follow-up surveys showed that all were females between the ages of 27 and 45. Five of the respondents called the automated system and three called the live counselor. All of the respondents were from the African American census areas, except for two. It should be noted that three of the callers from the African American census area were white respondents. One was eliminated because this person was an employee of the American Cancer Society and called out of curiosity. After adjustments, the white respondents from the African American census areas represented 40% of the respondents. This level of representation is in line with the minimum racial density levels of 55% . Finally, all respondents came from the low to moderate income groups except for one; this caller came from the upper to middle income African American census area.

The follow-up responses were too small to have any predictive value. All respondents identified positive subsequent behaviors that they would either continue or begin. These included self breast examinations, scheduling mammograms, and scheduling medical appointments. More interesting, however, is the fact that half of the eight follow-up respondents identified that their subsequent behaviors would be a change in action. Although there is no validity check associated with these responses they are reflective of the type of behaviors that support early detection. Strategies to refine this feedback component will be revised for subsequent tests.

The reader is reminded that key questions # 4 and # 8 were not reported in this summary because they relate to the issue of tracking repeat callers. As stated earlier, although desired, this technical component of the system was eliminated based on feedback evolving from the pretest effort. Moreover, beyond the general call pattern related to Behavior Level 1-- caller preference for automated compared to live counselor information systems-- the Behavior Level 2 and 3 actions reported in this section were insufficient in size to provide valid projections. Instead these call behaviors highlighted patterns and questions that will be addressed in subsequent test efforts.

4. Reactions From Representative Focus Groups

Similar to the process used to prepare for the pretest effort, focus groups were identified and discussion sessions were held to obtain assessments and reactions of the Phase One test results. The basic question that was posed is, "are the results valid from your perspective, and if yes, why?"

Five focus group sessions were established to identify representative groups that would reflect the membership of the four targeted populations (low to moderate income African American and whites, and middle to upper income African Americans and whites). The focus groups were established after contacting organizations with the reflective memberships. Within each participating organization, participants in the focus groups were all volunteers.

Five focus groups were established instead of four in an attempt to ensure appropriate income representation. The additional group was necessary as a result of asking each focus group participant to complete a pre-questionnaire, prior to discussions. Taken together, the five focus groups are representative of the targeted census areas.

Pre-Questionnaire: **Table 18 Phase One Test Pre-Questionnaire** on the following page presents the pre-questionnaire completed by focus group participants. The pre-questionnaire was designed to assess opinions before any influence of the discussions. A copy of the questionnaire along with a summary of focus group reactions can be found in **Appendix J.** The pre-questionnaire was designed to assess opinions before any influence of the discussions.

The demographic and pre-questionnaire summary shows that the participation ages range from the twenties to the seventies. The income levels and race representations reflect the targeted populations. All participants were female except for one male. Moreover, participants showed the following pre-questionnaire response patterns, as summarized below:

Racial Assessments

- Younger (under age 30) African American participants would use an automated information system because of the convenience, and flexibility of use, generally. However, two younger African Americans would call a counselor to address direct questions. The two younger white respondents indicated they would go to a live counselor for specificity.
- Middle year (ages 30-50) African Americans would use the automated information system as a first level of information and would telephone a live counselor or go to a doctor for specific questions or to address a problem.
  Middle year (ages 30-50) whites would use the automated information system because of it's convenience, anonymity and speed. However, a smaller number reported they would prefer a live person or would contact a live person for specificity.
- Older (ages 51 and older) African Americans would go to a doctor as their first source of information or call a live counselor. Only a few would call an automated information system first.
- Older (ages 51 and older) whites showed mixed responses. Some would telephone an automated information system first depending on the question and probably follow-up with a call to a live counselor. Others (fewer in number) would telephone the live counselor first or go directly to their doctor.

Table 18

BREAST HEALTH INFORMATION "ON-LINE" PROJECT
PRE- QUESTIONNAIRE

Please Take 5 Minutes or so And Complete The Questions Below:

1. **Date :**_____ 2. **Gender:**_____Male _____Female

3. **Race:** ___African American ___White _____Other

4. **Age:** ____ Under 30 Yr. ___30-40 Yr. ____41-50 Yr. ____51-60 Yr. ___ 61 Or Older

5.**Currently I Get Medical Information From: (Check All Sources Used)**
____a friend ____radio ad ____ mail pieces ____church
____newspaper ____magazine ____doctor ____other

6. **I Have Called A Live Counselor For Information About A Medical Issue (Information (Systems Like "ask a doctor" or "ask a nurse").** _____**Yes** _____**No**

7. **I Have Called An Automated Telephone Message System For Information About A Medical Issue.** _____Yes _____No

8. **I Would Seek Medical Information From An Automated Telephone System IF:**

_____

_____

9. **My Attitude Toward Any Information About Breast Cancer Is (check all that apply):**
____fear or I get scared! ____Don't want to know ____Want to know more

10. **I Have Had Some Training On Computers.**_____**Yes** _____**No**

11. **I Use A Computer At My Job.** _____**Yes** _____**No**

12. **I Use A Computer In My Home.** _____**Yes** _____**No**

13. **I *Would* Use A Computer To Get Medical Information IF:**

_____

14. **I *Would not* Use A Computer to Get Medical Information, Because:**

_____

15. **I would use A telephone to get information *before* I would use a computer**___**Yes**___**No**

16. **My Choices For How I Get most medical Information Include: (Check All Sources Used)**
____a friend ____radio ad ____mail pieces ____church
____newspaper ____magazine ____doctor ____computer
____telephone ____live counselor ____books ____other

Income Assessments

- Low to moderate income ($25,000 and under) African Americans had mixed reviews. Half would telephone a live information counselor before calling an automated system because of the anonymity, flexibility and privacy. The other half would call the live counselor because they would like to ask a direct question.
- Low to moderate income ($25,000 and under) whites had mixed responses. Of the two respondents, one would use the automated system first, the other would use the live counselor system first for specificity.
- Middle to upper income (over $25,000) older African Americans would telephone a live information counselor before calling an automated information system because of lack of familiarity or a greater desire to talk to a live person. Younger African Americans would telephone an automated information system first because of the convenience and flexibility.
- Middle to upper income (over $25,000) whites would telephone the automated information system first, and would use the live counselor to address follow-up or specific questions. Older callers would move toward both the live counselor and the automated system, although some older callers would telephone neither system but go directly to their doctor.

Focus Group Discussions: During the focus group discussions six basic questions were used to guide and direct discussions. These six questions provided both general questions about breast health and breast cancer and specific questions about the Phase One result and improvement ideas for subsequent test efforts.

The six questions discussed in each focus group are listed below:

1. Research shows that the mortality rate for women overall is going down for breast cancer, it is going up for African American women, however. Why do you think this is happening?

2. One of our test hypotheses was that there would be a higher response to the automated system from callers overall. In the first test, this did happen. Can you speculate on why African American women preferred an automated system? Would you or your friends and associates of the same race, age range and income range seek medical information from an automated messaging system over a live counselor system ? If yes, why? If no, why not?

3. If you were calling the system, how long would you stay on the system at one time? What could entice you to listen to multiple messages and stay on the system longer? What would be the reason for your hanging up? How would you change the system to get a caller to stay on the system longer?

4. The card advertised a free gift for callers, but it did not appear to affect the call rate. Nor did most callers request the gift. Why do you think the response to this was so low? Could it have been the location on the details for getting the gift?

Would you change anything about the premium? Or does it really make a difference?

5. Of the topics in the library, are there any topics that are particularly important in our listing? Or do you think that having a range of topics and providing an opportunity for callers to expand their information base at their own rate is the most critical issue related to the topics?

6. If you were trying to target outreach to a large number of callers that are difficult to reach with a topic as unappealing to some as breast cancer information, what strategies would you use along with or instead of a mailed postcard?

Although all six questions are important to the general BHIP research efforts, Question 2 is of greater pertinence to providing a validity check for the Phase One test results. The responses to this question from each of the five focus groups are summarized in **Table 19,** on page 47.

There are some very clear similarities in responses to Question 2. Generally, the focus groups accepted the findings and seemed to easily justify why the automated responses were significantly higher. Comments like convenience, more control over time and choices, an opportunity to build knowledge base if you don't know and the ability to move specificity if needed were discussed across most groups. There seem to be no major differences by race nor income levels. For example, both the low to moderate income African Americans and the upper to middle income white focus group members talked about the convenience to call at the time of day convenient to them.

Although nearly all groups supported the automated information system by a vast majority, there was no unanimity of support. It appeared that generally those who preferred the live counselor were older and more financially stable, although there were even individual differences here as well.

When the more favorable justifications and comments about preference for an automated health information system are compared from the group discussions with the pre-questionnaire some slight difference are noted. Individual responses showed more of a mixed review in preference, although skewed toward the automated system. Also, age differences were more apparent in the individual comments.

In general, the discussion group comments seem to come more from the perspective of the individuals rather than including the opinions of friends and associates, although some members specifically referenced others.

The focus group information did not provide validity to the test results, however, did provide further insight to understand the findings and call patterns that were observed.

A more detailed report on the focus group assessments is provided in **Appendix J, Phase One Test Focus Group Reactions.**

Table 19: Summary of Focus Group Responses to Question Two

"One of our test hypotheses was that there would be a higher response to the automated system from callers overall. In the first test, this did happen. Can you speculate on why African American women preferred an automated system? Would you or your friends and associates of the same race, age range and income range seek medical information from an automated messaging system over a live counselor system ? If yes, why? If no, why not?"					
Focus Groups	Speculate, Why Higher?	Would You & Prefer Automated?	Why, if Yes?	Why, If not?	General Comments
#1*-AALM & AAMU	Gives confidence, It's a machine society	General responses were yes, a few differed	See column one comments	Older person could be intimidated. Some like to talk to people	Although some older callers could be intimidated, if you don't know, it gives you knowledge.
#2- AAMU	Convenience, provides basic knowledge, Its a part of life.	All responded yes, except for one older participant.	See column one comments	Self initiation by caller would increase acceptance	It's very hard to start a conversation if you don't know what to ask. In the very beginning, let a person know they can talk to a live counselor.
#3**- WLM & WMU	Anonymity, in control	Mixed response, all yes, except two (one older)	See column one comments	May have more than one question, counselors have training	To some people anonymity is important. The control I have with an automated system allows me to hang up when I want to. It also allow me to call the live system as a follow-up for more specificity.
#4- WMU	Caller control, time control.	Mixed responses	See column one comments	A live counselor is much more personal.	All would call in the evenings. It goes back to education, if you know it, you wouldn't use automated systems
#5***- AALM	More privacy and choices	All responded yes, except the one white group member	See column one comments	Clarity can be obtained from a counselor.	With an automated system you can choose what you want. Calling in the evening is great.

* Group 1 Included one white group member. Also the pre-questionnaire showed group representation to include a mixture of low to moderate and middle-to upper income members.

**Group 3 Included a mixture of low to moderate and middle to upper income group members.

***Group 5 Included one white group member.

Strategy Abbreviaitons:AA=African American Census Area; W=white Census Area:; LM=Low to Moderate Income Group; MU=Middle to Upper Income Group

III. CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The viability of using automated telecommunication systems to reach African Americans and whites has been reaffirmed through the results obtained from the Breast Health Information Project (BHIP) Phase One Test. *The basic hypothesis of this research was that the informationally hard-to-reach would show a preference for the use of automated information systems compared to telephoning live information counselors.* The research findings showed that callers from both African American and white low income groups had a statistically significant preference for accessing the automated information system in seeking information about breast health and breast cancer. However, the belief that there would be a racial difference in caller preferences was not confirmed.

The findings are as follows:

- ***Overall- callers showed a statistically significant preference for using the automated telephone information system compared to the live counselor telephone system.*** Caller preference was observed across income levels and for both racial groups.

- ***By Race- no statistically significant differences in caller preference were demonstrated between racial groupings.*** A similar number of callers from African American and white households responded to the mailing and showed a preference for the automated information system.

- ***By Income Level- statistically significant differences were observed in caller preference between income groupings.*** A greater number of callers from lower to moderate income groupings responded to the mailing than representatives from the middle to upper income. Likewise these low income callers showed a statistically significant preference for the automated information system.

The basic beliefs in support of the confirmed *hypothesis* is that low income callers seek information in an environment where the day to day challenges compete with their ability and even interest in addressing health problems from a preventive perspective. Basically, the urgency and multiplicity of needs faced by many low income families are such that preventive health becomes a low priority. For many, health issues are addressed as they become a problem or as they increase in urgency, hence the severity of breast cancer conditions could probably be correlated with income levels as well as genetic and other high correlation factors.

As the income level of the individual declines, it is highly probable that insurance is not available or the individual is underinsured. As the income level goes down, more and more of the individual's resources are spent on basic needs, such as food, shelter and day to day necessities like commuting to work. Futuristic issues like early detection of breast cancer becomes less pressing until there is a problem. This contention was discussed repeatedly in different ways by different low income focus group participants, regardless of race.

In all discussions with focus group participants some members repeatedly spoke of a dislike for automated messaging. Yet everyone felt a level of acceptance for this technology and

displayed an attitude of " it's the way things are and the way things will be". While there were some who felt automated messaging technologies facilitated their communication efforts, there were others, particularly older participants who felt that regardless of convenience, they want to talk to a live person primarily their doctor.

Two comments were repeatedly identified as the reason for preferring the automated information system. The first was convenience, basically the convenience of accessing information whenever they wanted. In addition, it was repeatedly pointed out that if they're not sure of what question to ask, the automated information system offered a way to obtain a basic knowledge level before discussions with a live counselor. The automated system was perceived as a pre-education tool.

Behavior Levels Assessed -The BHIP research had anticipated examining three behavior types during the Phase One Test: Behavior Levels 1, 2 and 3. These behavior levels are described in the body of this report and defined in **Appendix A, Research Definitions**. The Behavior Level 1, frequency of calls to the information system, was easily captured for both the automated and the live counselor systems. Overall callers showed a statistically significant preference for the automated system. This preference pattern was repeated for each treatment group, by race and income level. *As stated earlier, the hypotheses assumed differences in preference by race and income group. Instead, the results showed more similarity in preferences.*

Both low to moderate and middle to upper income census groups preferred the automatic information system. Likewise, both racial groups preferred the automated system. The hypotheses assumed both an income difference and a racial difference. It was assumed that low to moderate income groups would have a greater preference for the automated system compared to the live counselor system. This difference was confirmed and was statistically validated. It was also assumed that African Americans would show a greater preference for the automated information system compared to the live counselor system. This difference was not found to be statistically significant. Although both racial groups preferred the automated system, the pattern of preference was similar.

Discussions with focus group participants from middle to upper income white representative targeted populations shed some light on these findings. Participants pointed out the following reasons: In an automated information system the caller is in control . The caller can determine if needs are satisfied or if a follow-up for more specificity is needed. In addition, the caller is in control of timing of calls: evenings or weekends are much easier for some with work and community activities. Basically, for different reasons other than the common reason of "convenience", it appears that some middle to upper income white women are just as likely to telephone a well marketed automated information messaging system as are low to moderate income African American women.

Callers from the African American census areas were more active users of different functions on the automated system. For example, of the few callers using the profile functions, to get assistance on suggested messages, more were callers from African American census areas. Also, of those callers accessing messages and accessing multiple messages in a single call, usage was skewed toward the callers from the African American census areas. Future assessments of this technology should address increased utilization to be able to evaluate any statistically significant patterns in this area. Is there more saturation of breast health and breast cancer information in certain groups? This factor may play a role, particularly in middle to upper income white groups. Message saturation might also explain why the level of call responses to both the automated and live counselor information systems showed no peaks during October, National Breast Cancer Awareness month.

Limitations and Research Refinements -There were a number of limitations to this research that reduced the predictability of the results and suggested issues and possible considerations for future research in this area. A few key limitations are noted as follows:

Promotion and Advertisement- This research was conducted without the normal advertisement and promotion that is used to support utilization of telecommunications information systems. The BHIP research was conducted with the intent of tight control, to be able to clearly assess differences in the observations. As a result, the response levels were lower than other telecommunications efforts. Hence the challenge for future research is how to tightly control the research to be able to categorize responses, yet at the same time maximize responses. This will improve the ability to assess calling patterns within each treatment group for information systems about breast health or breast cancer. *The BHIP research staff are examining a number of possibilities to be incorporated into a Fall 1996 test effort.*

Identification of Respondents- The research was conducted with a very rigorous identification and verification of the targeted census areas. The process provided a high level of assurance that the respondents met the income and the race requirements targeted for BHIP. This acceptance range ran from a low of 55.53% to a high of 83.68%, density for qualifying homes in selected census block groups. Hence, some mailing areas had a greater concentration of the target population than others, but no area had less than 55.53% density.

For example, the mailings to the low to moderate income African Americans in Baltimore had density levels of 71.77% (lowest) and 82.27% (highest) in Anne Arundel County, Maryland (Reference Table 2). Yet, the households actually receiving the postcards could have been up to 18.23% or 17.73% non African American or non low to moderate in income.

While high density levels exist for the low to moderate income African Americans and middle to upper income white households, the density levels for low to moderate income white and middle to upper income African Americans ranged from 55.53% (lowest) to 83.68% (highest) and 61.93%- 70-55%, respectively. The majority of the census areas for both of these latter groups were at density levels in the 60% range, hence, 40% of the households in the targeted areas were not from the targeted groups. Since the call responses are based on the mailing, *it is recommended that subsequent tests should increase the level of concentration by targeting areas with higher density concentration.*

Related to this issue, subsequent test efforts are also being examined to address the income differences that were found in the Phase One test by conducting greater refinements to the census areas. Under consideration is the issue of targeting groups by income quintiles, where possible, rather than grouped quintiles. As a result of such refinement, we would be able to de-couple the income classification of low to moderate income (a household income range of $0-$24,999) and examine call pattern differences within these two quintile levels. As a consequence, call patterns could be examined for callers from census areas with household income in the first quintile ($0-$14,999) versus household income in the second quintile ($15,000 -$24,999).

For example, closer examination of the Baltimore census areas show that a total of 46,759 households were identified at the density level used in defining the low to moderate income ($0-$24,999) for the African American targeted groups. Further refinement of the census data shows that this population group is broken down into 34,872 households at the $0-$14,999 level (1st quintile) and 11,887 households at the $15,000 to $24,999 level (2nd quintile). Our findings from the Phase One Test are reported based on the call pattern of callers from low to moderate income level ($0- $24,999). ***Clearly, this refined examination of the census areas shows that 75% of the households receiving mail within this target group were probably at the lowest income levels.***

The BHIP researchers believe that the automated information system has a high probability of reaching the lowest income segments of the population. The refined examination of the Baltimore census areas support this contention. Yet we are unable to say with assurance that more or fewer callers came from one income quintile or the others. Being able to assess the results at this refined level is of great importance since it would provide more definitive information on how people at various income levels within a category (e.g. low to moderate or middle to upper) prefer to access health information about breast health or breast cancer. More refined census analyses are currently being examined related to this issue. *The focus on refined income level assessments is under discussion and consideration for those target groups in the subsequent test that are large enough to accommodate such detailed analyses.*

Marketing and Outreach- The issue of marketing is a critical consideration in presenting and positioning a telecommunication information system. Advertising and marketing are key to getting the attention of callers and increasing caller interest. The BHIP information systems were tested without the normal marketing efforts in order to maintain precise control over the data collection and assessment of results. The basic issue to be addressed in subsequent tests is whether marketing will enhance caller response and what marketing effort is appropriate for different target groups. This issue is particularly challenging for the BHIP research because of a basic interest in identifying racial and income differences, with a particular focus on what telecommunication strategies are more effective for which target group. *The issues of enhancing mass outreach in a controlled research study is currently under deliberation and will be incorporated into the subsequent BHIP assessments.*

Currently the BHIP researchers are conducting a cursory examination of accessing various methods for accessing breast health and breast cancer resources through the use of computer information on-line and telephone information on-line systems for low income housing communities. Basically African Americans in low income housing communities are being

briefly exposed to both technologies to obtain reactions, preferences and insights related to outreach issues. Although this cursory assessment is not completed, one pattern is very clear: the familiarity of the telephone seems to generate usage. However, the lack of familiarity of the computer creates a demanding learning curve to develop familiarity with computers. Moreover, as was clearly found in the Phase One Test, the issues of convenience makes the placement and use of computers as important an issue as is training. The issue of using the computer as a motivational tool to enhance outreach is questionable at this point but will be examined for further insight. *The decision on modifying the outreach strategies for subsequent tests will be a major consideration for the subsequent BHIP tests.*

Combining the mailed postcard with radio, community postings, notices in and through community based organizations are just a few of the ideas under consideration. The basic intent of subsequent research efforts is to examine the viability of the findings from the Phase One Test in a manner that provides tight controls through expanded outreach efforts and refined assessment measures like income areas. In some ways conflicting principles are at work. The greater the promotion, the greater the response. However, more promotion in general responses, the less precision in identifying the caller.

System Throughput -Throughput is a major issue to be addressed in the BHIP research. What message preferences exist within the racial and income groups? What system functions were preferred by system callers? Which type of callers transferred to live counselors to obtain more information? Reporting on these questions and others that reflect Behavior Level 2 actions were anticipated as a part of the BHIP research. Although some information was captured related to these questions, the information is limited because of response size. The issue to be addressed is how to increase caller throughput in the use of the system and capture data levels for appropriate comparisons and assessments.

Very little academic and research information is available that addresses the issues of throughput related to telecommunication applications. Experienced professionals in these areas point to basically three measures of throughput that are of interest. These include the number of sales or closures related to an application, the number of hang-ups and the number of callers to a system. Although there are few applications with direct measure available to assess the number of sales or closures related to application, most assessments are based on the call volume to a system. The BHIP research is examining throughput through the level of activity related to Behavior Level 2.

Three issues should be noted as related to throughput in the BHIP research. First is the issue of basic call pattern, which shows a greater interest in calling an automated information system to seek health information. The second is how to sustain the interest level once the caller has accessed the system. Discussions and speculations relate to addressing the "opening" for an information system and building on the level of curiosity and interest that generated the initial call. In addition, the issues of broadening message appeal across different age groups has been suggested. This would include increasing message appeal with topics that are age specific, such as: " breast health and menopause" and "what younger women should know about breast health". Most feedback suggested the topics used in the automated information system were broad enough to support general interest. Yet callers in focus groups who indicated they

would not call an automated information system about breast health indicated that they would call for general information if topics were more targeted .

Based on these points we believe the topics like "breast cancer and African American women", and "men, you can get breast cancer too" are particularly beneficial in attracting the attention of hard to reach audiences.

We believe the third issue to be addressed is the issue of throughput, which relates to the introduction and the initial interaction the caller has with the system, as well as the message length. While it is true that messages that are appropriately presented in terms of tone and voice are extremely important, what the caller hears when they first access an automated system is just as important.

One can speculate on all the reasons why individuals call an automated system. Beyond the issues of convenience, anonymity, and caller control for a person seeking health information, a caller's basic curiosity might be at work. What is this really about? Will it help me? Is it boring or will it be interesting? Basically a caller to an automated information system is generating some level of interest . *The issue then becomes how to improve and capture the caller's interest during the introductory stages and increase caller throughput. This issue will be further addressed in the subsequent test effort.* This need is particularly critical in examining racial patterns related to the BHIP callers that are discussed below.

Racial Patterns- Our initial belief was that the automated system would provide the background information that would support a level of comfort and result in greater utilization of the live counselor and/or greater utilization of the automated system through repeat calls. This contention was not fully tested. There was no utilization resulting in transfers to the live counselor. Yet some callers to the automated system showed greater utilization of various functions of the automated system that required them to be active in seeking out information. Although these utilization patterns were small in number and are insufficient to provide statistical analyses, they did indicate differences by racial groups.

No statistically significant racial differences were found in the call pattern in the Phase One Test. In fact the call volumes were similar by racial group. This finding does not confirm a supporting hypothesis that assumed there would be racial differences. The caller preference were basically the same for each racial group, although for both groups the preference was for the automated information system. This preference will be examined again in the Fall 1996 subsequent test effort.

Clear patterns related to callers' use of this system are summarized in **Table 16, Summary of Behavior Level Two Actions**. Callers from African American census areas showed a much greater utilization of the system's functions on the automated system, although their call volume was about the same as that for callers from white census areas. Among other areas African Americans showed more than twice the utilization for the profile features and more than three times the utilization in frequency of listening to multiple messages, and in agreeing to participate in follow up surveys or completing evaluation surveys on line. Moreover, about the same number of callers from African American census areas called the automated system. Yet callers from African American census areas listened to more than twice as many messages than callers from white census areas. More significant is the fact that African Americans made 43 of the 48 telephone calls to the category of messages "all about mammograms". Does this suggest a possible over saturation of information in some communities or an under-saturation or lack of access in others?

Discussions with the focus groups point to maybe two information access problems facing the African American community. One is the issue of income; this matter was discussed earlier in this section. The other is a psychological or systemic barrier. The BHIP researchers believe that these barriers were represented by a fear associated with addressing the issue of breast cancer or a sense of "what will be will be". While these information barriers differ for individuals, they were discussed more frequently in both African American income groups. These issues suggest that communication systems to reach the informationally hard to reach must address not only the content and the system but the less tangible issues as well.

Tracking Subsequent Behaviors -Another challenging issue to address in the BHIP research is assessing the impact of the telecommunication systems on the subsequent behavior of the caller-- Behavior Level 3. Due to the feedback process structured to obtain this information, we were not successful in obtaining any statistically meaningful evaluation in this area. Those callers completing the evaluation survey on-line indicated plans to continue or start proactive steps in early detection. This same confirmation was obtained from people participating in the follow-up surveys. Was this just a rote positive response or did behavior changes actually occur from these self reports? The number of volunteers participating in this component were insufficient. *Strategies to increase voluntary participation on this issue is a current part of the BHIP reassessment and refinement for subsequent tests.*

Although there are many challenges yet to be addressed by the BHIP research as well as research limitations and constraints, ***it is encouraging to note the significant findings in these initial indicators from the Phase One Test results show that multimedia automated information systems can enhance outreach to low income populations.*** These issues continue to be a part of the research refinements and many will be reassessed and examined in subsequent test efforts.

Refinements to the research design have helped shaped the BHIP research. The subsequent test effort will examine comparative information across regions, racial groups, and income levels. In addition, this test will incorporate findings from the Phase One Test results, including more refined income level assessments. The subsequent test efforts will also support examination and comparison of different outreach strategies across the same variables.

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V. APPENDICES

A. Research Definitions

B. Sample Scripts

C. Available Hardcopy Information Documents (By Fax or Mail)

D. Phase One Postcard Treatment A (Live Counselor System)

E. Phase One Postcard Treatment B (Automated Information System)

F. Call Flow for Automated Information System

G. Call Flow for Live Information System

H. Pretest Summary Results

I. Phase One Data Report (Summary)

J. Phase One Test Focus Group Reactions (Summary)
and Pre-Questionnaire

Appendix A: Research Definitions

Definitions Statement

Update: October 18, 1995

Purpose: Research on the Army Health Project has pointed up the need to clarify and better define terms used. As such, this glossary is a guide to provide common meaning to terminology used for Army Health and other active projects.

Glossary

Informationally Hard-to-Reach (I H-T-R):

Populations not currently being reached well by traditional information dissemination and outreach media methods including live health calltaker telephone systems. Sources: Staff meeting on 9/27/94 and updates.

I H-T-R Barriers:

Impediments which prevent information from reaching target populations.

- **distribution barriers** - situations where the target population has no access to receivers for media distribution mediums, eg., no modem, computer, radio, mailbox, or phone (or no DTMF touchtone on phone).

- **reception barriers** - situations where the target population has limited ability to receive information because of such things as poor language skills, illiteracy, physical or mental disability, etc.

Behavior Response Levels:

The extent to which a target population participant is prompted to act based on the provided media stimulus. In the case of Army Health the stimulus was a promotional direct mail card sent to target persons. Three behavior response levels are defined.

- Behavior Response Level 1: The person responds to the distribution medium. In Army Health, the participants makes a phone call as a result of receiving the direct mail piece.

- Behavior Response Level 2: The caller moves beyond an introduction to get involved with the information program. In Army Health, it means moving beyond the main menu on the automated system and engaging or seeking to engage a live counselor.

- Behavior Response Level 3: The caller has taken a health maintenance or healthcare action following receipt of the information. In Army Health this action will be discerned by calling volunteer respondents 60 to 120 days after using the information resource.

Socio Economic Status (SES):

Social and income status of participants in various study strategies

- Lower and moderate SES (LM): In Army Health this refers to lower to moderate income households which are in the lower two of the five U.S. census income quintiles.

- Middle and Upper SES (MU): In Army Health this refers to middle and upper income households which are in the upper three of the five U.S. census income quintiles.

Cultural I H-T-R:

Groups whose cultural belief systems and actions reduce the impact of traditional marketing and outreach channels for a subject body of information.

Minority Community:

A subset of cultural I H-T-R which includes traditional minorities (African Americans, Hispanic Americans, Native Americans, Asian Americans and Pacific Islanders).

- The minority community is a presumptive I H-T-R Group.

- The African American community is a presumptively I H-T-R subset of the minority community.

Body of Information:

A coherent, interrelated grouping of information as perceived by traditional users of that information (eg., about baseball, about business start-up, about health maintenance, about preventing breast cancer)

Audiotex (information-on-demand):

Telephone audio libraries accessible by a plain old telephone.

FAX Retrieval (FAX-information on-demand):

FAX transmission generated by automated telephone system and retrieved by caller.

TTY:

Adaptation of voice processing technology (teletypewriter) to implement two-way communication between voice processing system and telecommunications devices for the deaf (TDD's) which are transmitted via Baudot TTY signals.

Automated Attendance System:

Automated telephone answering and call transfer system (like a receptionist)

Voice Processing System:

Computer base telecommunications technology that digitizes voice sounds so they can be recorded, stored, manipulated and retrieved. The major applications of the system are:

- automated attendant
- voice mail
- audiotex (audio information-on-demand)
- interactive voice processing
- outbound dialing
- transaction processing

Note: On newer systems, most of these applications also have a similar FAX function which can be integrated into the system.

Grunt Detect:

Sound activated capability of voice processing system to provide caller limited switching capability.

Premium (for using voice or automated system):

Coupon for discounted service or product redeemable by caller which can be sent to caller by FAX or mail.

Caller (or System Caller):

Individual who calls the system. (Behavior Response, Level 1)

Dial "1" Callers:

Callers using a touchtone phone to access the systems who responds that they have touchtone service by pressing "1" when instructed.

Active Callers for the Automated System:

Callers who select any of the touchtone options at the Main Menu. (Behavior Response, Level 2) **Note: Rotary callers are not considered active callers.**

Active Callers for Live System:

Callers who listen to the Welcome message and press "1" if a touchtone phone user or stay on the line to be transferred to the live counselor. (Behavior Response, Level 2) **Note: Rotary callers are considered active callers if they stay on the line.**

Dial Out Caller:

Any caller who selects to be transferred to a number external to the audiotex system; e.g.
Army Health - caller is transferred from the system to live counselor at Cancer Information Service or American Cancer Society.
Rural Tourism - caller is transferred from the system to County Visitors' Bureaus.

TeleBox:

A distinct numbered box designated on the call flow for a specific audiotex system application function.

Prompt:

Recorded instruction to the caller on how to use the system, usually brief.

Message:

Any communication written or oral sent between persons or available on demand from an online system. Messages are either static (unchanging) for dynamic (changing regularly).

Topic:

A subject for discussion. In Army Health it's the same as a message.

Category:

A class or division of information. In Army Health it's a grouping of multiple messages under a common theme.

SES : Social Economic Status

BHIP : Breast Health Information Project

1990 U.S. Census Quintiles

	lower limit	upper limit
lst quintile	$0	$12,499
2nd quintile	12,500	23,661
3rd quintile	23,662	36,199
4th quintile	36,200	55,204
5th quintile	55,205	or more

BHIP lower to moderate income range

$0 to $24,999

BHIP middle to upper income range

$25,000 or more

Appendix B: Sample Scripts

1. There is Life after Breast Cancer
2. What African American Women Need to Know About Breast Cancer

CANCER INFORMATION PROJECT

SCRIPT #: 13
DRAFT DATE: 3/29/95
EST. RECORDING TIME: 1.25 MINUTES
VOICE: FEMALE

THERE IS LIFE AFTER BREAST CANCER

THE TITLE OF THIS MESSAGE IS, " THERE IS LIFE AFTER BREAST CANCER."

THERE **IS** LIFE AFTER ANY KIND OF BREAST CANCER. EVEN IF YOU HAVE JUST BEEN DIAGNOSED WITH BREAST CANCER OR IF YOU ARE UNDERGOING TREATMENT FOR IT, IF YOU HAVE BREAST CANCER OR SOMEONE CLOSE TO YOU DOES, YOU'LL FIND THAT IT IS ALL THE MORE IMPORTANT TO CONTINUE LIFE WITH A POSITIVE OUTLOOK.

LIFE DOESN'T STOP BECAUSE CANCER ENTERS IN TO IT. LIVING BECOMES A **MUST** IN THE PROCESS OF OVERCOMING CANCER.

HERE ARE SOME HELPFUL HINTS TO MAKE LIFE MORE LIVABLE WHEN FACING BREAST CANCER: JOIN A SUPPORT GROUP. THERE ARE MANY SUPPORT GROUPS AVAILABLE THAT HELP BREAST CANCER PATIENTS AND THEIR FAMILIES DEAL WITH PROBLEMS AND EMOTIONS THAT NEED TO BE EXPRESSED.

BE EXPRESSIVE. RELEASE WHATEVER EMOTIONS YOU MIGHT HAVE WITH YOURSELF AND YOUR FAMILY. ALL EMOTIONS ARE EXPECTED AND NORMAL.

CONTINUE TO WORK. YOUR WORK CAN BE USED AS SOMETHING TO KEEP YOUR MIND FOCUSED ON OTHER THINGS, BESIDES YOUR MEDICAL CHALLENGES.

THERE IS ANOTHER IMPORTANT FACT TO REMEMBER: YOU CAN STILL HAVE A HEALTHY SEX LIFE. THERE ARE MANY SUPPORT GROUPS THAT HELP AND ENCOURAGE WOMEN TO CONTINUE TO FEEL CONFIDENT IN THEIR SEXUALITY. SO BE HOPEFUL, NOT HOPELESS, AND BE FEARLESS, NOT FEARFUL BECAUSE YOU CAN SURVIVE.

JUANITA IS A 18 YEAR BREAST CANCER SURVIVOR, WHO HAS HAD CANCER 3 TIMES. SHE LIVES A FULL AND ACTIVE LIFE. SHE WORKS AND IS INVOLVED IN many COMMUNITY ACTIVITIES INCLUDING EFFORTS TO START A SUPPORT GROUP FOR BREAST CANCER SURVIVORS. INSTEAD SHE IS A LIVING TESTAMENT TO THE FACT THAT THERE IS LIFE AFTER BREAST CANCER. SHE IS THE EPITOME OF POSITIVE THINKING AND YOU CAN BE TOO. SHE HAS BEEN IN REMISSION FOR 13 YEARS AND STILL THINKS LIFE IS WONDERFUL.

WHATEVER YOUR WORRY OR CONCERN MAY BE, LIFE WILL CONTINUE TO GO ON. CHOOSING TO PARTICIPATE IN IT COULD BE THE SAVING GRACE YOU'VE BEEN LOOKING FOR. BREAST CANCER IS JUST LIKE ANY OTHER OBSTACLE. WE MUST DEAL WITH IT FROM DAY TO DAY AND MOVE ON. LIFE AWAITS. **(STOP)**

FOR MORE INFORMATION ABOUT SUPPORT GROUPS IN YOUR AREA, CALL MESSAGE 14 IN THIS LIBRARY.

END OF SCRIPT

SOURCES:

1. UNDERSTANDING BREAST CANCER RISK

2. THE RACE IS RUN ONE STEP AT A TIME

3. FACING FORWARD: A GUIDE FOR CANCER SURVIVORS

CANCER INFORMATION PROJECT

SCRIPT # 5
DRAFT DATE: 8/24/95
ESTIMATED READING TIME: 3 MINUTES
VOICE: AFRICAN AMERICAN FEMALE

WHAT AFRICAN AMERICAN WOMEN NEED TO KNOW ABOUT BREAST CANCER

THE TITLE OF THIS MESSAGE IS, WHAT AFRICAN AMERICAN WOMEN NEED TO KNOW ABOUT BREAST CANCER.

IF YOU ARE AN AFRICAN AMERICAN WOMAN YOU MAY HAVE HEARD THAT YOU'RE AT GREATER RISK FOR GETTING BREAST CANCER. WELL, THAT'S NOT ENTIRELY TRUE. IN FACT, AFRICAN AMERICANS HAVE LESS OF A CHANCE OF GETTING BREAST CANCER THAN WHITE WOMEN DO. (1)

BUT DON'T THINK YOU'RE OFF THE HOOK. WOMEN -- AFRICAN AMERICAN OR WHITE -- ARE AT RISK FOR GETTING BREAST CANCER -- EVEN THOSE WITH NO FAMILY HISTORY OF THE DISEASE. THERE ARE MORE NEW CASES OF BREAST CANCER EACH YEAR THAN OF ANY OTHER KIND OF CANCER -- AND THIRTY PERCENT MORE CASES NOW THAN IN THE 1970'S? THAT'S NOT GOOD! (2)

BESIDES, EVEN THOUGH AFRICAN AMERICAN WOMEN ARE AT LOWER RISK FOR GETTING BREAST CANCER, ONCE WE DO GET IT ... THE STATISTICS SHOW WE DON'T SURVIVE AS WELL AS OTHER WOMEN. IN FACT OUR SURVIVAL RATE DROPPED BY FOURTEEN PERCENT IN THE 1980S, WHILE SURVIVAL FOR WHITE WOMEN GOT BETTER! (3)

BREAST CANCER IS THE LEADING CAUSE OF CANCER DEATH FOR AFRICAN AMERICAN WOMEN. AND THIS IS A TRAGEDY, BECAUSE BREAST CANCER IS SO CURABLE IF CAUGHT EARLY.

WHY ARE AFRICAN AMERICAN WOMEN DYING OF BREAST CANCER IN SUCH HIGH NUMBERS?

WELL, FIRST, WE'RE ARE NOT FINDING IT EARLY ENOUGH. SEVENTY PERCENT OF ALL AFRICAN AMERICAN WOMEN HAVE NEVER EVEN HAD A SIMPLE MAMMOGRAM: WHICH IS AN X-RAY OF THE BREAST. (4) MAMMOGRAMS CAN FIND CANCER MUCH SOONER THAN SELF-EXAMINATION -- UP TO TWO YEARS BEFORE A LUMP IS FELT.(5)

SECOND, AFRICAN AMERICAN WOMEN ARE NOT GETTING YEARLY MEDICAL CHECK-UPS OR OTHER HEALTH CARE WHERE BREAST CANCER MIGHT BE FOUND EARLY.

THIRD, ONCE HAVING BEEN TREATED FOR BREAST CANCER, SOME AFRICAN AMERICAN WOMEN DON'T GET FOLLOWUP TREATMENT OR CHECKUPS.

THERE ARE DIFFERENT REASONS FOR DELAYING ACTIONS. SOME AFRICAN AMERICAN WOMEN SIMPLY CAN'T AFFORD TO GO TO THE DOCTOR AND CAN'T AFFORD MAMMOGRAMS. AND IF WE DON'T HAVE HEALTH INSURANCE, WE MAY NOT GET ANY LONG-TERM FOLLOWUP TREATMENT AFTER OUR FIRST TREATMENTS.(6) EVEN SOME WHO CAN AFFORD IT, GO FOR HELP ONLY WHEN OUR CANCER HAS SPREAD. BY THEN, MORE TREATMENT IS NEEDED, AND OUR CHANCES OF RECOVERY NOT AS GOOD. FOR SOME, IT MIGHT BE OUR BELIEF SYSTEM, OR POSSIBLY FEAR.

SO WHAT CAN WE DO TO CHANGE THOSE ODDS? WELL, WE HAVE TO TAKE CHARGE OF OUR LIVES AND OUR HEALTH. WE MUST DO THIS FOR OURSELVES, OUR FAMILIES AND OUR LOVED ONES. BEGIN BY DOING A BREAST SELF-EXAM EVERY MONTH. GET ANNUAL PHYSICAL BREAST EXAMS.

IF YOU HAVE A PERSONAL HISTORY OF BREAST CANCER, YOU SHOULD GET A MAMMOGRAM EVERY YEAR. IF YOU ARE IN YOUR 40'S YOU SHOULD DISCUSS WITH YOUR DOCTOR WHEN TO BEGIN HAVING MAMMOGRAM SCREENINGS. STARTING AT AGE 50, MAMMOGRAMS ARE RECOMMENDED EVERY ONE OR TWO YEARS. YOUR PERSONAL HISTORY AND MEDICAL PROFESSIONAL WILL HELP YOU WITH THESE DECISIONS.

NO EXCUSE ACCEPTED. IF YOU CAN'T AFFORD A MEDICAL CHECKUP OR MAMMOGRAM, HELP IS AVAILABLE.

PLEASE CALL MESSAGE 10 FOR THE LOCATION OF LOW-COST MEDICAL HELP IN YOUR COMMUNITY. YOU CAN TAKE CHARGE OF YOUR BREAST HEALTH NOW AND CONTROL YOUR DESTINY. (STOP)

END OF SCRIPT

1. FACTS ABOUT BREAST CANCER AND BLACK AMERICAN WOMEN(NCI PUB)
2. BREAST CANCER - A COMPLETE GUIDE, HIRSHAUT AND PRESSMAN, P. 242
3. IBID
4. IBID
5. FACTS ABOUT BREAST CANCER AND BLACK AMERICAN WOMEN
6. BREAST CANCER - A COMPLETE GUIDE, P. 242
7. FACTS ABOUT...AND BLACK AMERICAN WOMEN

Appendix C: Available Hardcopy Information Documents (by fax or mail)

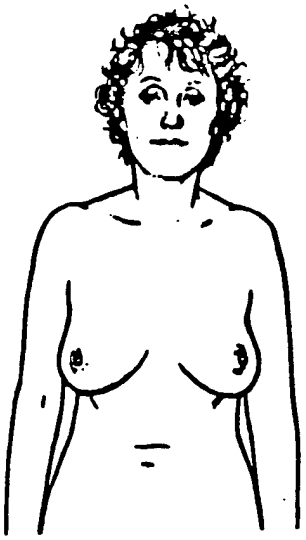
1. Breast Self-Examination (BSE)
2. Breast Cancer Support Groups
3. Free or Low Cost Mammogram Services

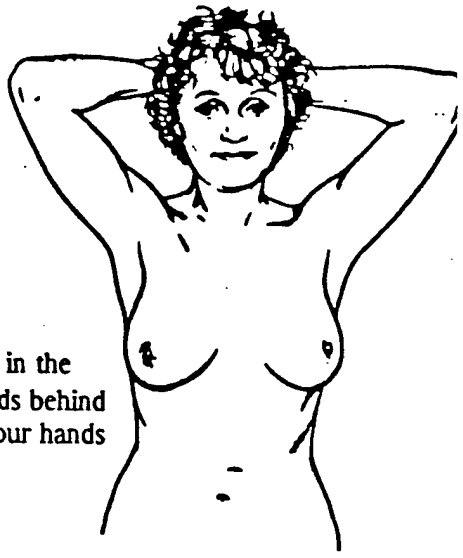
Breast Self-Examination (BSE)

Here is one way to do a BSE:

1 ☐ Stand before a mirror. Check both breasts for anything unusual. Look for a discharge from the nipples, puckering, dimpling, or scaling of the skin.

The next two steps are done to check for any change in the shape or contour of your breasts. A you do them, you should be able to feel your chest muscles tighten.

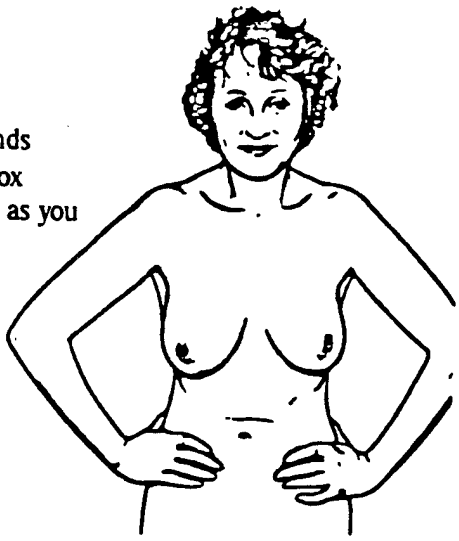




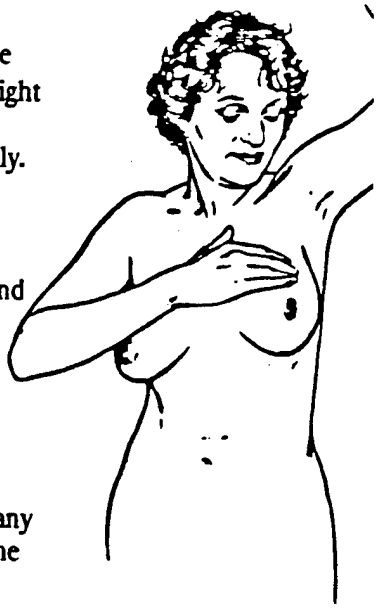
2 ☐ Watching closely in the mirror, clasp your hands behind your head and press your hands forward.

3 ☐ Next, press your hands firmly on your hips and box slightly toward the mirror as you pull your shoulders and elbows forward.

Some women do the next part of the exam in the shower. Your fingers will glide easily over soapy skin, so you can concentrate on feeling for changes inside the breast.

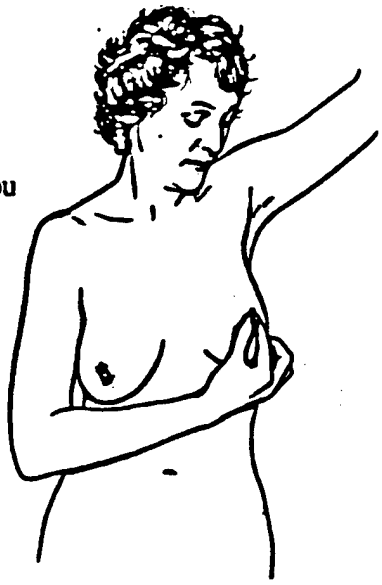


4 ☐ Raise your left arm. Use three or four fingers of your right hand to feel your left breast firmly, carefully, and thoroughly. Beginning at the outer edge, press the flat part of your fingers in small circles, moving the circles slowly around the breast. Gradually work toward the nipple. Be sure to cover the whole breast. Pay special attention to the area between the breast and the underarm, including the underarm are itself. Feel for any unusual lump or mass under the skin.

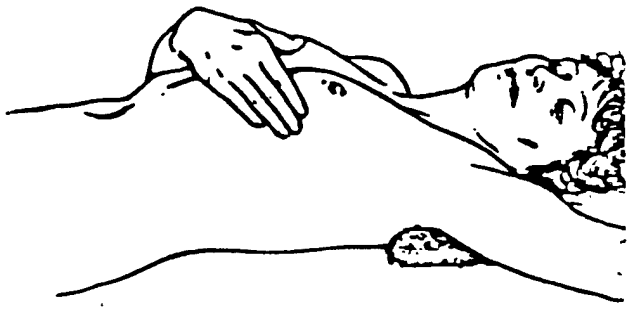


Brest Self-Examination (BSE) - Continued

5 ☐ Gently squeeze the nipple and look for a discharge. (If you have any discharge during the month – whether or not it is during BSE – see your doctor.) Repeat the exam on your right breast.



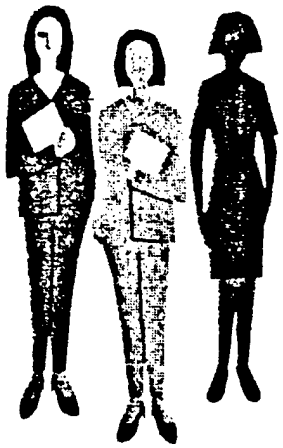
6 ☐ Steps 4 and 5 should be repeated lying down. Lie flat on your back, with your left arm over your head and a pillow or folded towel under your left shoulder. This position flattens the breast and makes it easier to check it. Use the same circular motion described above. Repeat on your right breast.



Breast Self Examination Chart
U.S. Department of Health and Human Services

NATIONAL INSTITUTES OF HEALTH

BREAST CANCER SUPPORT GROUPS



•ANNE ARUNDEL COUNTY

American Cancer Society
(410) 721-4304

Breast Cancer Sharing Group
North Arundel Hospital
301 Hospital Drive
6th Floor
Glen Burnie MD 21061
Second Tuesday of the month, 7:30 - 8:30 PM

Breast Cancer Support Group
Anne Arundel Medical System
Oncology Center
140 Jennifer Road
Annapolis MD 21401
Second and Fourth Wednesday of the month, 7:30 - 8:00 PM

Cancer Resource and Support Center (CARES)
8055 Ritchie Highway
Suite 101
Patriot's Plaza
Pasadena MD 21122
(410) 760-CARE

Breast Cancer Survivors Series
Second Monday of the month, 7:00 - 8:30 PM

Breast Cancer Support Group
Fourth Monday of the month, 7:30 - 9:00 PM

•BALTIMORE CITY AND COUNTY

Arm-in-Arm
(410) 494-0083

Greater Baltimore Medical Center
Women's Resource Center
6569 N. Charles Street
(410) 828-3301
Second Tuesdays and Third Wednesdays, 7:00 PM
First Tuesday of the month, 7:00 PM (Advanced Stage)

Johns Hopkins Hospital
Hackerman Patz House
1909 McElderberry Street
Second Monday of the month, 12:00 noon.

St. Agnes Hospital Cancer Center
Waiting/Reception Area
(410) 368-2962
Fourth Thursday of the month, 7:00 PM

Sinai Hospital
Weinberg Bldg., Room 206
(410) 578-5640
First Monday of the month, 7:00 PM

Sisters Surviving
Liberty Medical Center
West Bldg.
2600 Liberty Heights Avenue
(410) 566-5000
Second Tuesday of the month, 6:00 - 8:00 PM

The Wellness Community of Baltimore
901 Delaney Valley Road
Suite 710
Baltimore MD 21204
(410) 832-2719
Breast Cancer Networking Group
Center Hours:Monday - Friday
9:00 AM - 5:00 PM and some evenings

•CARROLL COUNTY

Wings (General Cancer)
95 Carroll Street
Westminster MD 21157
Contact:Susan Hannon
(410) 857-1838

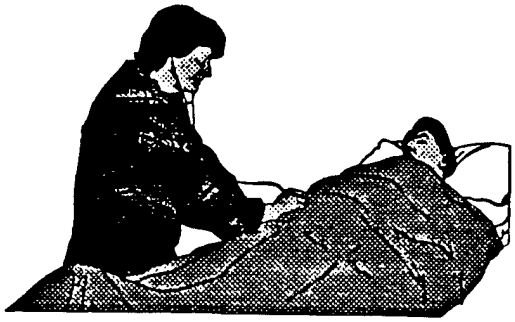
•HARFORD COUNTY

YWCA
Encore Plus Program
United Methodist Church
21 Linwood Avenue
BelAir MD
(410) 838-5181
First Tuesday of the month, 7:30 PM

•HOWARD COUNTY

Breast Cancer Support Group
Contact:Nancy Wintworth
(410) 730-5372
Meets once a month in different locations

FREE OR LOW COST MAMMOGRAM SERVICES



•ANNE ARUNDEL COUNTY

Anne Arundel County Health Department
3 Harry S. Truman Parkway
Annapolis MD 21401
(410) 222-7023

Anne Arundel Medical System
Annapolis MD 21401
(410) 224-5770

North Arundel Hospital
Glen Burnie MD 21061
(410) 787-4370

•BALTIMORE CITY

Franklin Square Hospital
9000 Franklin Square Drive
Baltimore MD 21237
(410) 682-7406

Griffin Radiology Associates
Garwyn Medical Center
2300 Garrison Blvd., Ste. 150
Baltimore MD 21216
(410) 624-5700

Harbor Hospital Center
3001 S. Hanover Street
Baltimore MD 21225
(410) 347-3383

Johns Hopkins Breast Clinic
600 N. Wolfe Street
Baltimore MD 21287
(410) 955-4851

•BALTIMORE CITY

University of Maryland Hospital
22 S. Greene Street
Baltimore MD 21201
(410) 328-5196

•BALTIMORE COUNTY

Franklin Square Hospital
9000 Franklin Square Drive
Baltimore MD 21237
(410) 682-7406

Greater Baltimore Medical Center
6701 N. Charles Street
Baltimore MD 21204
(410) 828-3706

Northwest Hospital Center
5401 Old Court Road
Randallstown MD 21133
(410) 521-2200

St. Agnes Hospital
900 Caton Avenue
Baltimore MD 21229
(410) 368-3456

Women's Cancer Protection Program
Investment Building
1 Investment Place
Towson MD 21204
(410) 887-3432

•CARROLL COUNTY

Carroll County Health Department
Breast and Cervical Program
540 Washington Road
Westminster MD 21158
(410) 876-4423

•HARFORD COUNTY

Hartford County Health Department
Breast and Cervical Program
119 Hays Street
BelAir MD 21014-0797
(410) 838-1500

•HOWARD COUNTY

Howard County Health Department
Breast and Cervical Program
10630 Little Patuxent Parkway
Columbia MD 21044
(410) 313-7500

Appendix D: Phase One Postcard Treatment A (Live Counselor System)


Don't Gamble
with
Breast Cancer
FREE GIFT AVAILABLE FOR CALLING

Why Gamble -- It's 90% Curable
When Detected & Treated Early

BULK RATE
U.S. POSTAGE
PAID
Permit #273
Annapolis, MD
21401

Address Correction Requested

Do *You* Have Questions About Breast Cancer ?

Talk to a live, trained person to get valuable information, resources, and referrals. You can get the answers.

- Prevention
- Detection & Early Treatment
- Low Cost Mammography Referrals
- Causes & Risk Factors
- Free Publications Mailed to You
- Get Answers To Your Questions

All calls are handled individually and confidentially.
Available Monday - Friday, 9.00 AM - 7.00 PM.

By Calling Now, You Can Receive A Free Gift

Invest In Your Health

Sponsored by TeleSonic in collaboration with a panel of cancer experts and the U.S. Army, grant # DAMD17-94-J-4282. Content does not necessarily reflect the position or policy of the government, and no official endorsement should be inferred.

Breast Health Information Program: 1-800-521-8972

Appendix E: Phase One Postcard Treatment B (Automated Information System)

You can Lower Your Risk of Breast Cancer

3 Easy Steps

To Access the Breast Health Information Library

A 24 Hour Information Service on Breast Cancer Prevention, Detection, and Treatment. You can listen to any message in the library at any time from any Touch-Tone Phone.

Step 1 Call 1-800-521-8996

Step 2 Press 2 to reach the message library
or
Press 1 *or* 3 for assistance.

Step 3 Press a number (1-15) to listen to that message.

Msg#	Message
1	*What Is Breast Cancer?*
2	*Put Fear Aside-Breast Cancer Is Curable.*
3	*Breast Cancer Myths*
4	*Every Breast Lump Or Pain Is Not Cancer.*
5	*Breast Cancer And African American Woman*
6	*Men, You Can Get Breast Cancer Too*
7	*Are You At Risk For Getting Breast Cancer?*
8	*How To Lower Your Risk For Getting Breast Cancer*
9	* *Breast Examination*
10	* *All About Mammograms*
11	*Where Do I Get More Information About Breast Cancer ?*
12	*How Can Breast Cancer Be Treated?*
13	*There Is A Life After Breast Cancer.*
14	* *Community Bulletin Board*
15	*How Should I Support A Friend Or Relative With Breast Cancer?*

* Fax or mailed material available following this message. Example with message #10: "All About Mammograms" - List of Free or Low Cost Mammogram Services will be faxed or mailed to you.

Why Gamble -- It's 90% Curable
When Detected & Treated Early

BULK RATE
U.S. POSTAGE
PAID
Permit #273
Annapolis, MD
21401

Address Correction Requested

Call Now for valuable recorded information on breast cancer prevention, detection, and treatment.

The **Breast Health Information Program** library contains information including:

- Breast Cancer:What You Need To Know
- Breast Cancer Risk Factors
- Breast Health
- Treatment Options
- Recovery/Follow-up Care

Conveniently Available 24 hours, 7 days a week from any telephone.

☛ Open the postcard for a complete listing of messages in the library and instructions.

By Calling Now, You Can Receive A Free Gift

Invest In Your Health

Sponsored by TeleSonic in collaboration with a panel of cancer experts and the U.S. Army, grant # DAMD17-94-J-4282. Content does not necessarily reflect the position or policy of the government, and no official endorsement should be inferred.

Breast Health Information Program: 1-800-521-8996

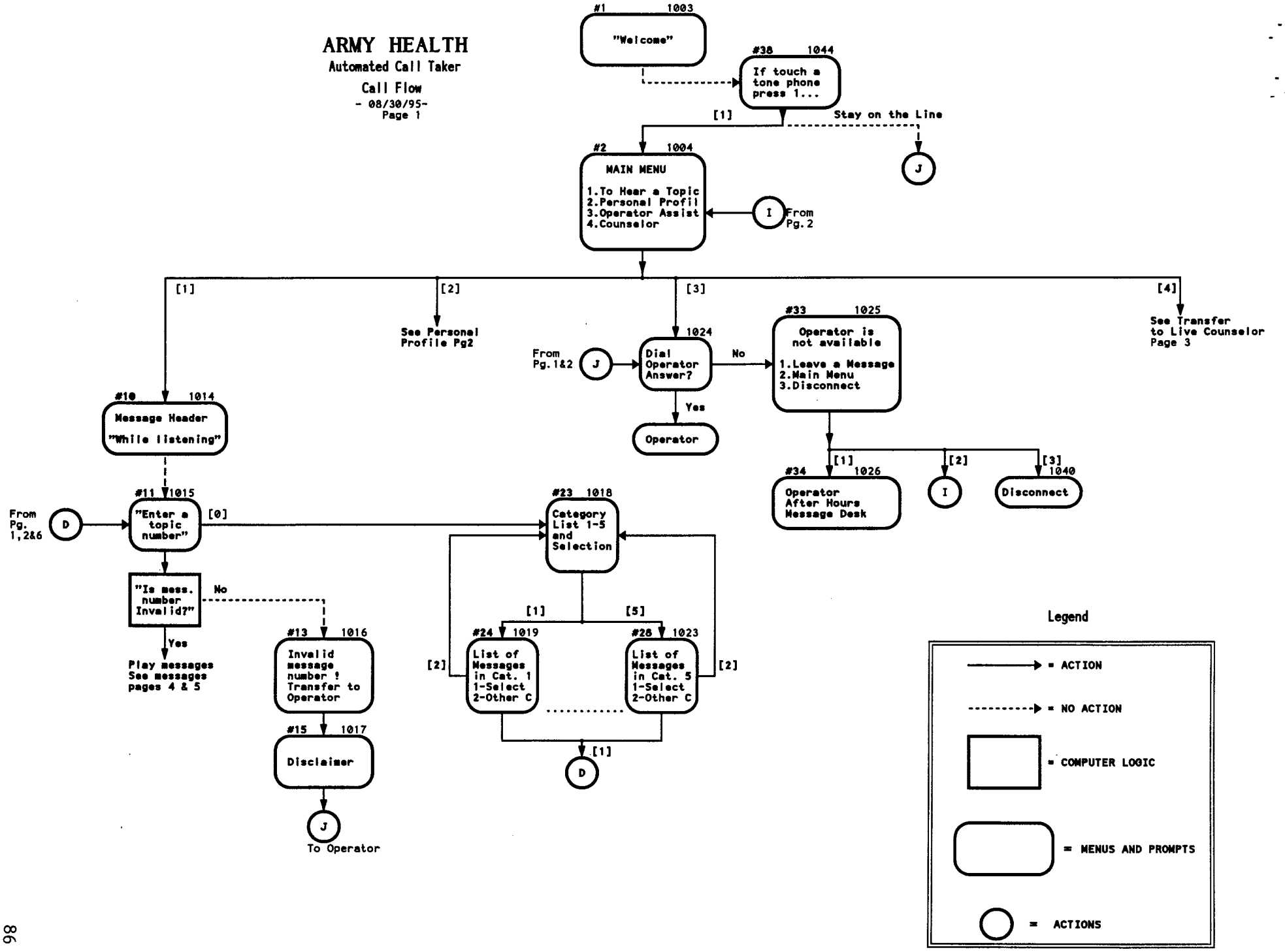
Appendix F: Call Flow for Automated Information System

ARMY HEALTH

Automated Call Taker

Call Flow

- 08/30/95-
Page 1

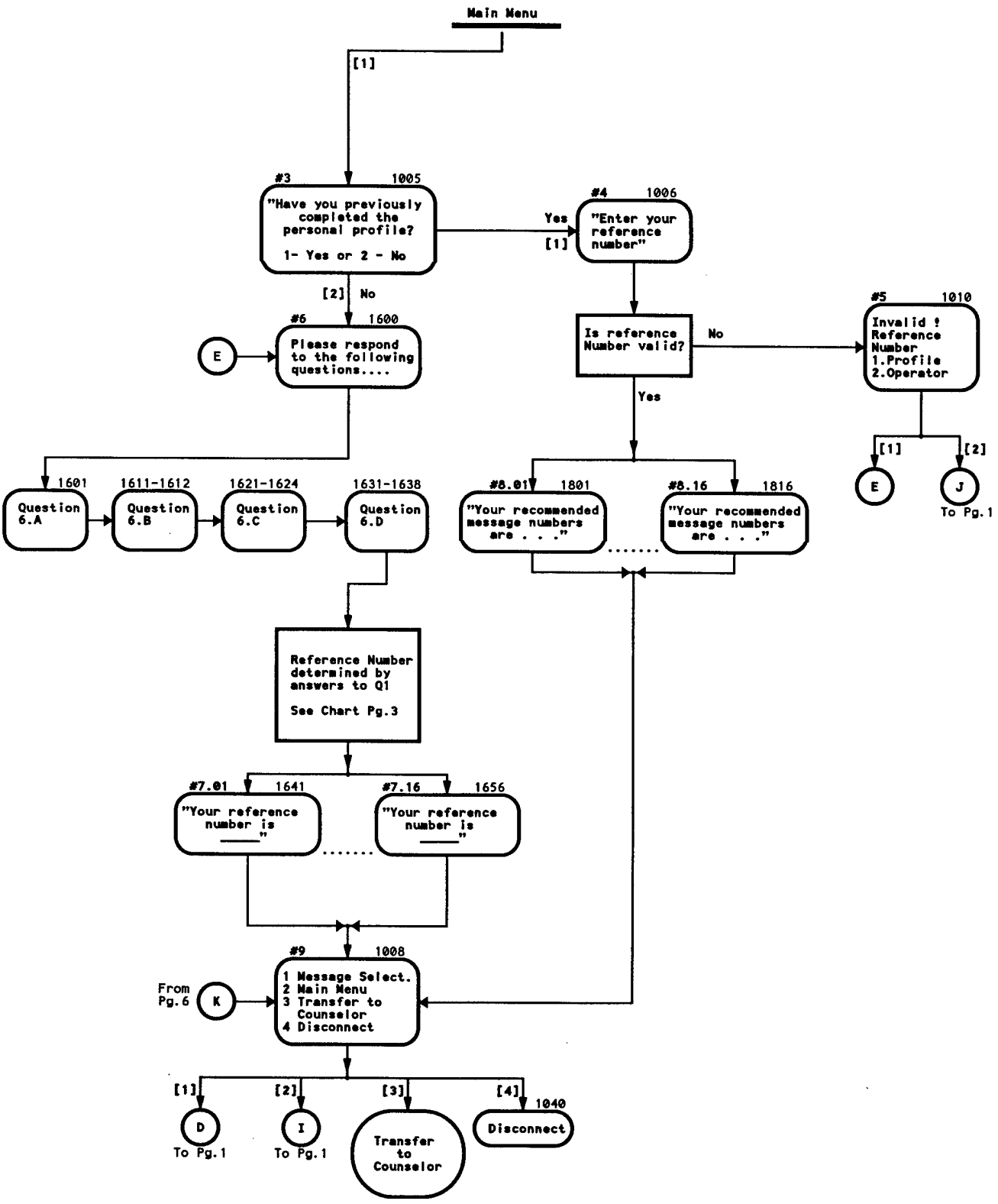


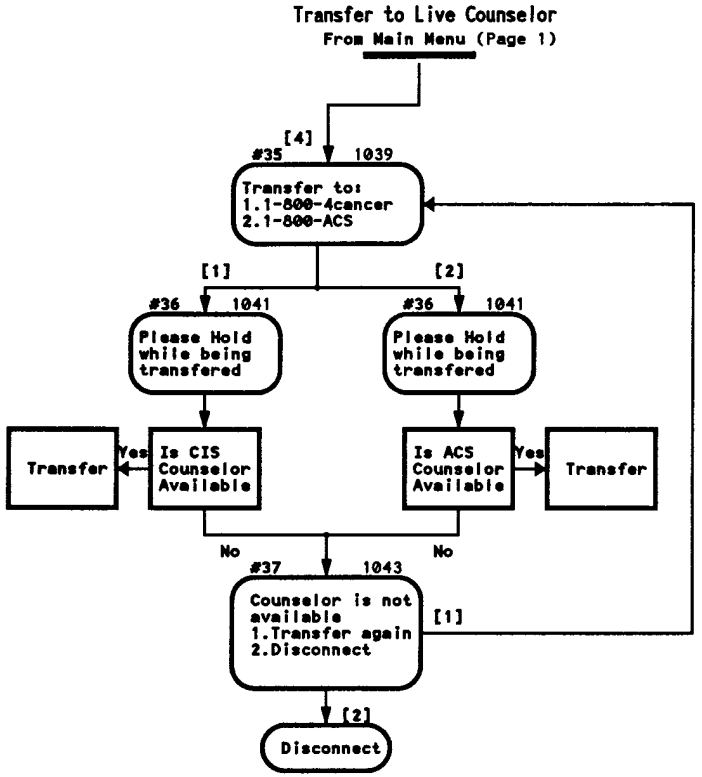
ARMY HEALTH

Automated Call Taker

Call Flow

08/30/95





Personal Profile Module with Reference Number (R. N.) Identification

Question # 1 Are you a Female? Profile(P) Box:1601 Survey(S) Box: 1701															
Female Profile(P) Box:1611 Survey(S) Box: 1711								No Female Profile(P) Box:1612 Survey(S) Box: 1712							
Family History of Cancer P.Box:1621 S. Box: 1721				No Family History of Cancer P.Box:1622 S. Box: 1722				Family History of Cancer P.Box:1623 S. Box: 1723				No Family History of Cancer P.Box:1624 S. Box: 1724			
Breast Exam P.Box:1631 S.Box:1731		No Breast Exam P.Box:1632 S.Box:1732		Breast Exam P.Box:1633 S.Box:1733		No Breast Exam P.Box:1634 S.Box:1734		Breast Exam P.Box:1635 S.Box:1735		No Breast Exam P.Box:1636 S.Box:1736		Breast Exam P.Box:1637 S.Box:1737		No Breast Exam P.Box:1638 S.Box:1738	
Cancer P.B:1641 S.B:1741	No Cancer P.B:1642 S.B:1742	Cancer P.B:1643 S.B:1743	No Cancer P.B:1644 S.B:1744	Cancer P.B:1645 S.B:1745	No Cancer P.B:1646 S.B:1746	Cancer P.B:1647 S.B:1747	No Cancer P.B:1648 S.B:1748	Cancer P.B:1649 S.B:1749	No Cancer P.B:1650 S.B:1750	Cancer P.B:1651 S.B:1751	No Cancer P.B:1652 S.B:1752	Cancer P.B:1653 S.B:1753	No Cancer P.B:1654 S.B:1754	Cancer P.B:1655 S.B:1755	No Cancer P.B:1656 S.B:1756
R.N.1	R.N.2	R.N.3	R.N.4	R.N.5	R.N.6	R.N.7	R.N.8	R.N.9	R.N.10	R.N.11	R.N.12	R.N.13	R.N.14	R.N.15	R.N.16

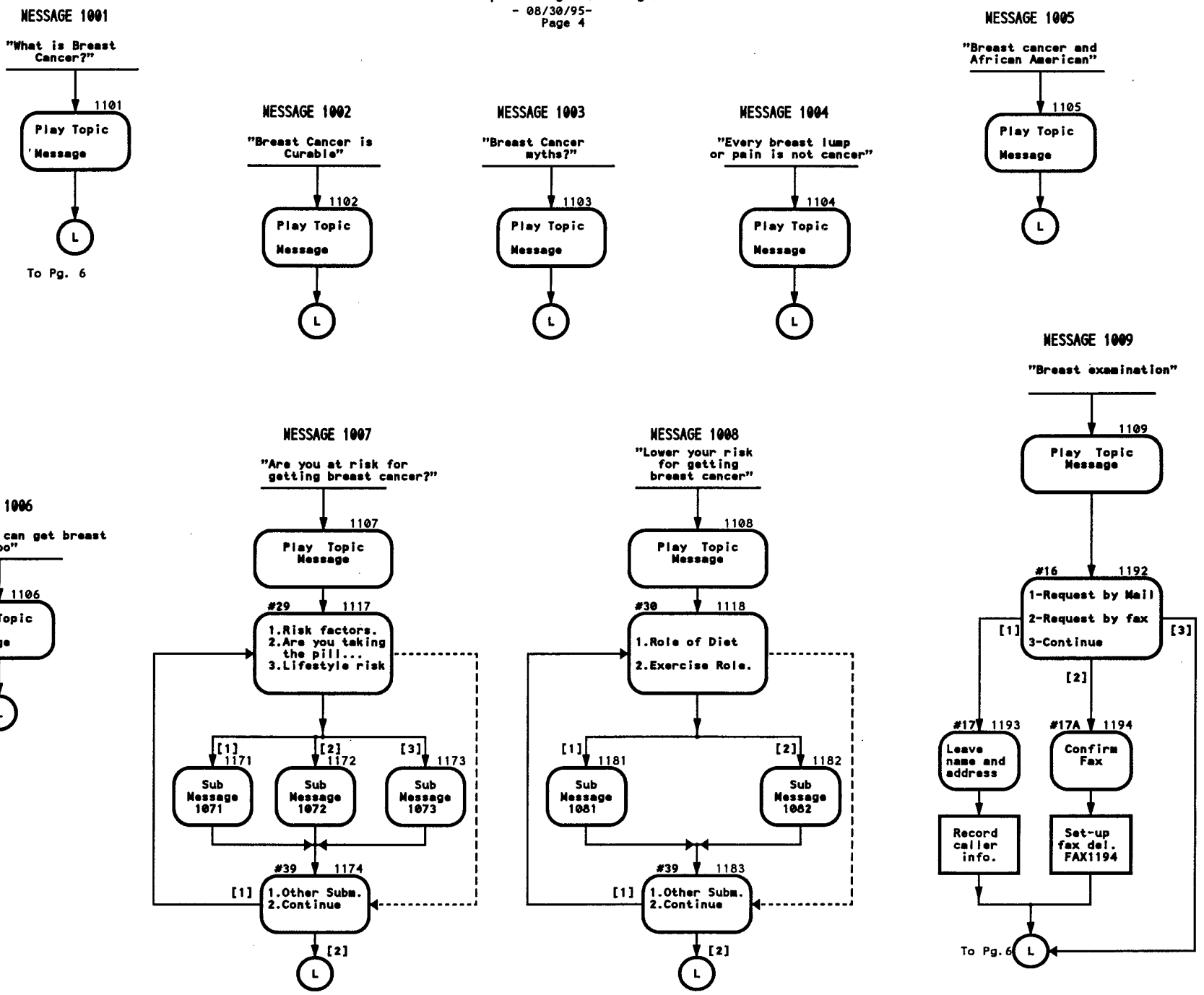
ARMY HEALTH

Automated Call Taker

Call Flow

Topic Messages (From Pg1)

- 08/30/95-
Page 4



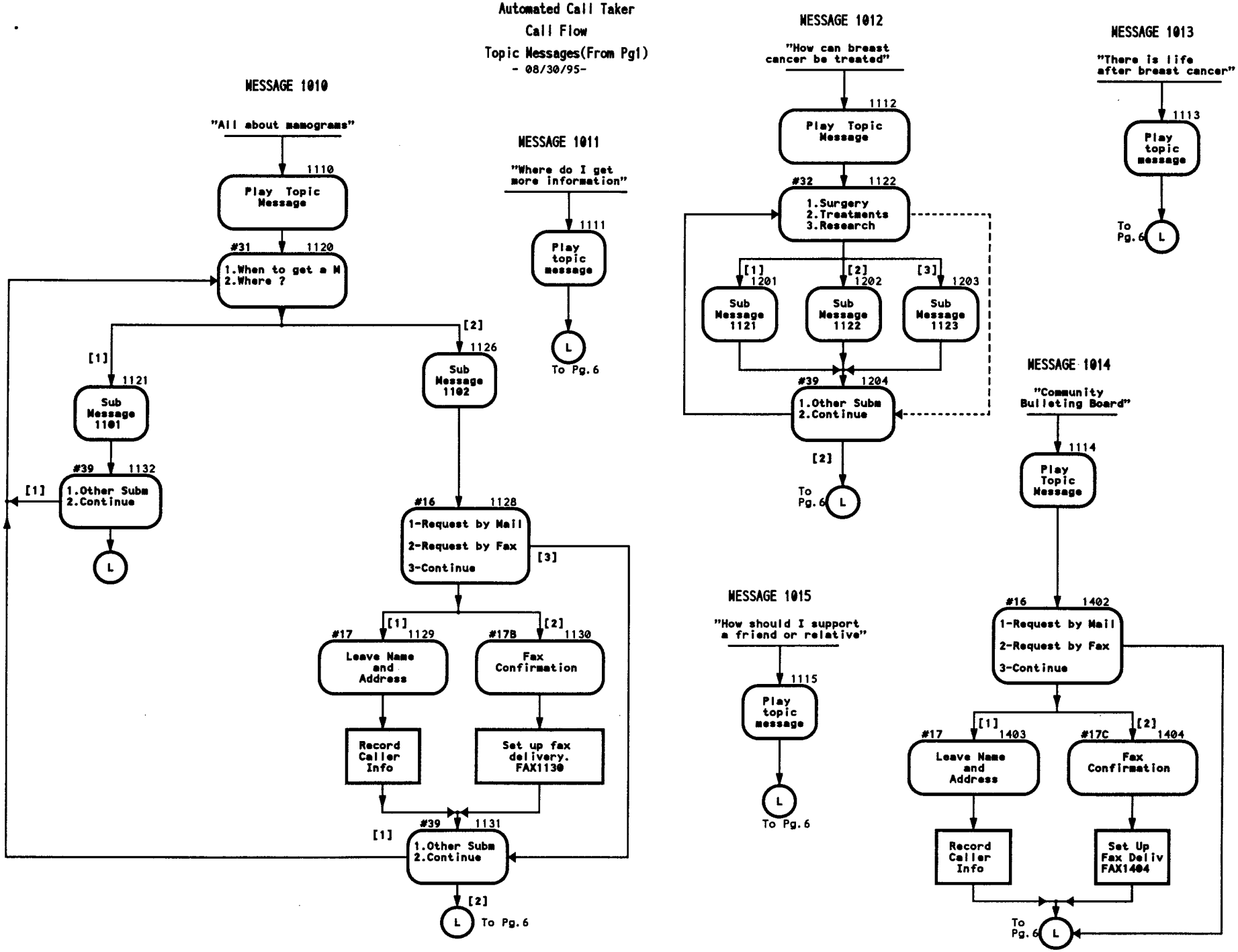
ARMY HEALTH

Automated Call Taker

Call Flow

Topic Messages(From Pg1)

- 08/30/95-

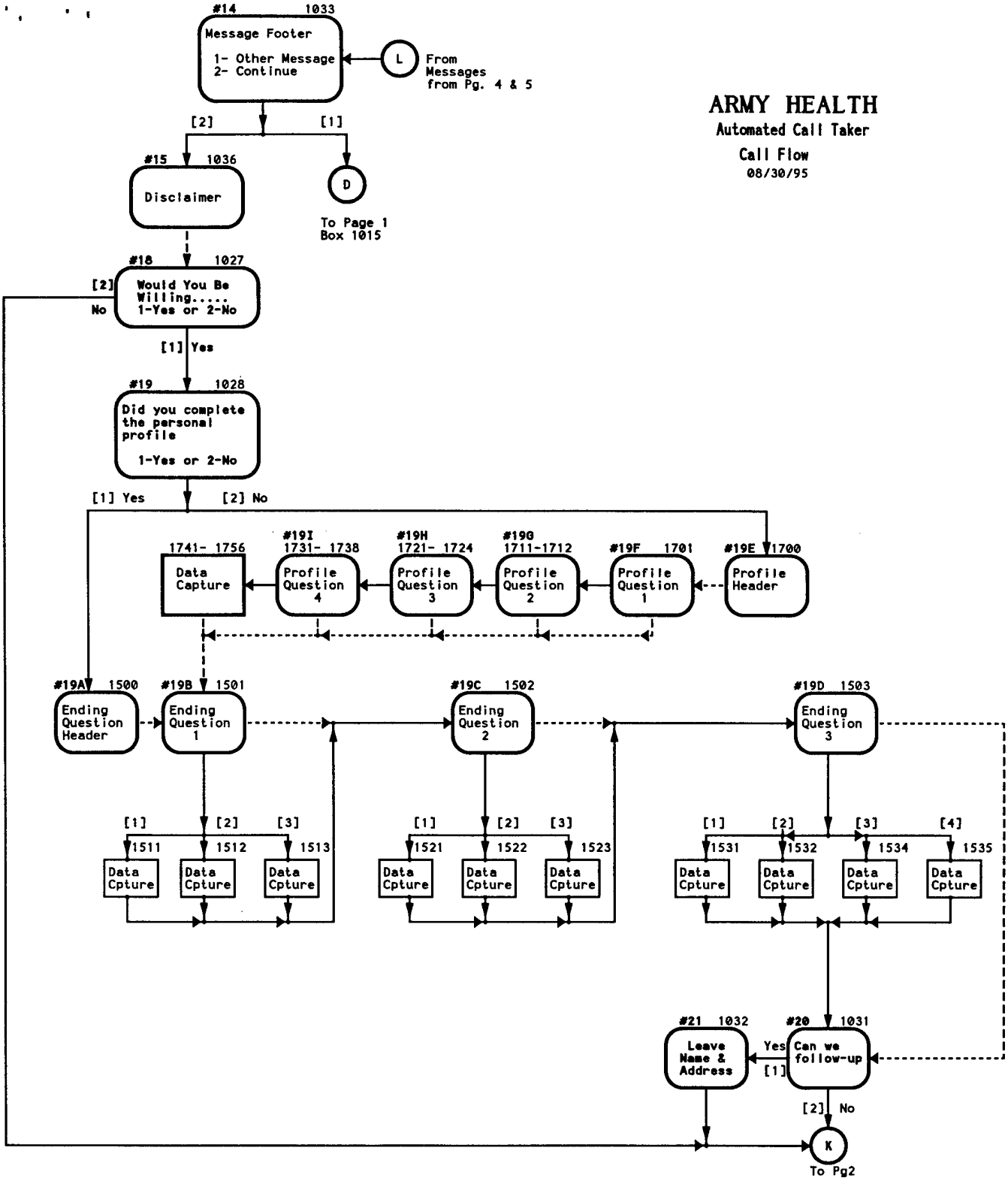


ARMY HEALTH

Automated Call Taker

Call Flow

08/30/95

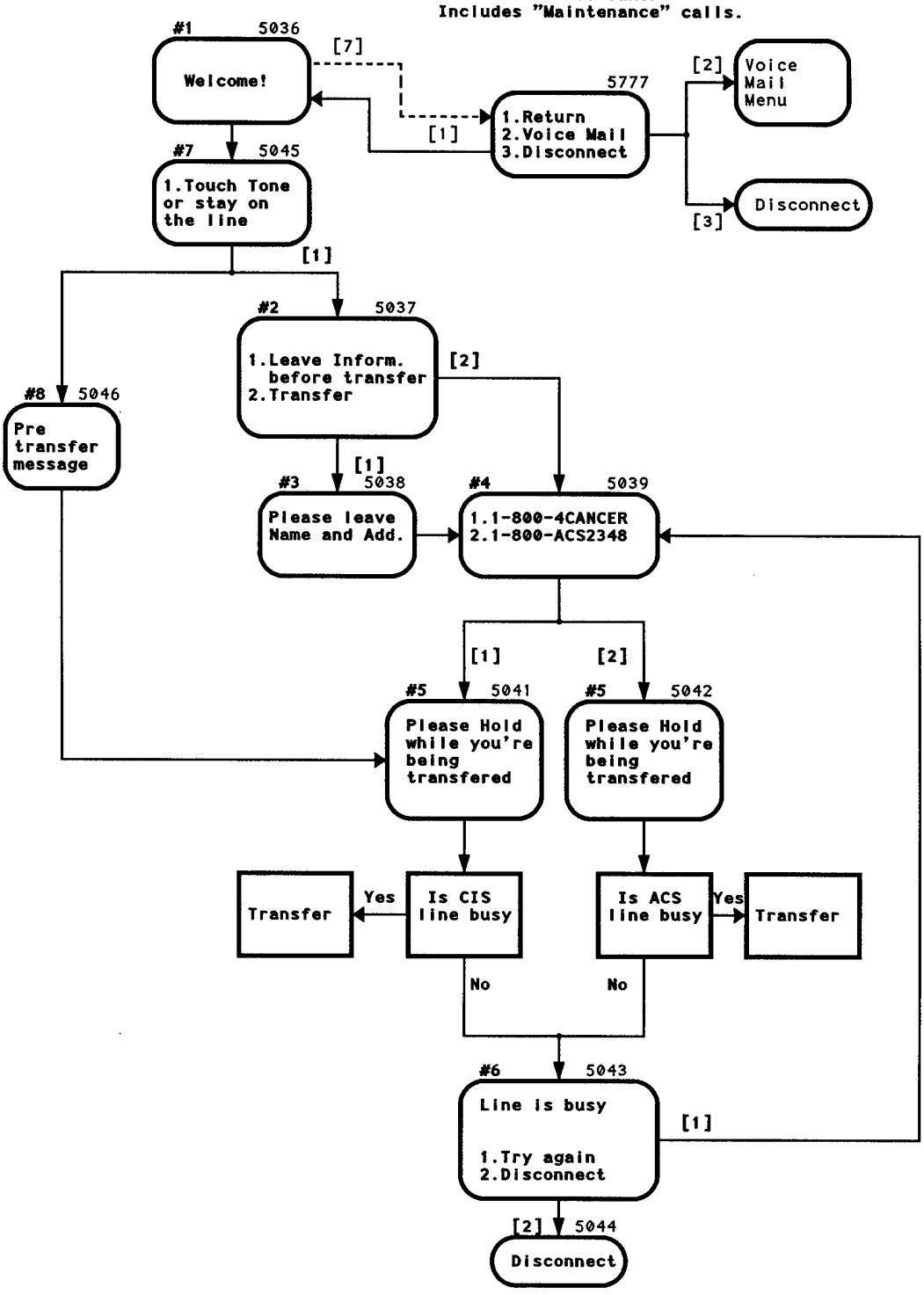


Appendix G: Call Flow for Live Information System

Army Health

Call Flow 06/27/95

Live Call Taker
Includes "Maintenance" calls.



Appendix H: Pretest Summary Results

BREAST HEALTH INFORMATION PROJECT
HIGHLIGHTS OF PRETEST RESULTS
JUNE 15-AUGUST 28, 1995

Background

The Breast Health Information project is designed to research the efficacy of using different caller information systems and outreach strategies as a basis for reaching the informationally-hard-to-reach (defined for this research study as African Americans and low income women) with information about breast cancer. The specific focus of this effort is to determine caller preference for information by examining response patterns to an automated information system and a live counseling system.

The research is being conducted over a three year period using a three-test research protocol:

Test 1- Mailing to 20,000 households in central Maryland-- September-November, 1995 **(See attachment B for population research schemata)**

Test 2- Mailing to 20,000 households in the Washington D.C. metropolitan area-- Spring,1996

Test 3- Radio broadcast into the same areas noted in Test 1 and 2

Each test will be conducted with households across four different census areas:(1) African American low to moderate income, (2) African American middle and upper income, (3) White low to moderate income, and (4) White middle and upper income.

The three tests will be preceded by a pretest during the summer of 1995. This pretest is designed to determine the exact numbers of mailings needed for the response size necessary to ensure analysis of statistical significance. The summary tables included in this report highlight the results from the pretest.

Summary

The pretest was conducted over a two and one half month period, from June 15 - August 28, 1995. The test included 4,000 mailings to households in the same census areas noted in Test 1 (See Attachment B for population research schemata).

Mailings were implemented for two different periods:

(1) Pretest 1, 2000 mailings for June 15-July 19
(2) Pretest 2, 2000 mailings for July 20-August 28

Two different mailings were used to ensure verification of results and to overcome the lag problem generally experienced in clearing 800 telephone numbers which have been reissued. This lag problem reflects the tendency for 800 usage reports to include persons who are seeking the previously assigned 800 service. Hence, the second mailing was designed to add additional time to the calling period to help clear calls from the previous 800 user and consequently to aid in verifying response pattern results.

In addition, the second mailing incorporated changes to the introduction and reduced the time delays, to expedite the callers time in reaching system content. These changes were designed to increase caller through-put on the information systems.

Caller Response Pattern

The response pattern results for each mailing is reflected in Tables 1-3c, included as Attachment A.

The mailing size anticipated for Test 1 and Test 2 assumed an overall response rate of 7.5% for the live counselor information system and 10% for the automated information system. The pretest was designed to see if the response rate would be generated or if a different mailing size would be necessary for the major tests.

Overall both pretest mailings showed a consistent response pattern in those areas necessary to determine the size of the mailing for the first test. Calls to the live counselor system had a response rate for pretest periods 1 and 2 of 21.5% and 15.4%, respectively and an overall response rate of 18.5%. Hence the minimum anticipated response rates were exceeded.

Similarly, calls to the automated information system were met with response rates of 29.7% and 20.1% for each of the two periods, and an overall response rate of 24.9%. The detailed results for the response rates are presented in Tables 3-3a. Summary information is provided in tables 1 and 2.(See Attachment A).

In addition to examining the response pattern, the pretest also provided invaluable information that suggested changes to the information system to improve the testing effort for Test 1. Although insufficient through-put was generated to conduct statistical analysis on the caller listening pattern, some clear indices and differences between respondents within the census groups were generated. These differences will be examined and analyzed closely during the subsequent tests, starting with Test 1.

Returned Postcards

It is significant to note that of the 4000 postcards mailed, only 62 or 1.5% were undeliverable. The postcards were mailed bulk rate, but include an address correction label, to monitor delivery patterns across census areas. Because of the low return rate, there is confidence in the process used to generate the census areas and the mailing list for Test 1.

Note

Advisory members or other recipients of this summary are urged to contact the project office to discuss this report in more detail and to obtain information about the results from Test 1, which will include mailings through November.

Information can be obtained by telephoning (410) 841-6920 and asking for Toni Shumate or Patsy Baker Blackshear, Ph.D.

BREAST HEALTH INFORMATION PROGRAM
SUMMARY RESULTS FROM PRE-TEST
JUNE 15, 1995 - AUGUST 28, 1995

ATTACHMENT A

Table 1

CHARACTERISTIC	PERIOD 1	PERIOD 2	TOTAL
1) Number of Mailings	2000	2000	4000
Automated	1000	1000	2000
Live	1000	1000	2000
2) Response Rates to Mailings			
(See Table 2 and 3 for details)			
Number	512	355	867
Percentage	25.6%	17.8%	21.7%
3) Response Rate to Automated System			
(See Tables 3a and 3b for details of strategy, income level and race for automated responses)			
Number	297	201	498
Percentage	29.7%	20.1%	24.9%
4) Response Rate to Live System			
(See Tables 3a and 3c for details of strategy, income level and race for live responses)			
Number	215	154	369
Percentage	21.5%	15.4%	18.5%
5) Response by Race			
(See Table 3 for income levels with race and race within income levels)			
African American			
Number	233	152	385
Percentage	23.3%	15.2%	19.3%
White			
Number	279	203	482
Percentage	27.9%	20.3%	24.1%
6) Response by Income Level			
(See Table 3 for income levels with race and race within income levels)			
Low-Moderate			
Number	266	181	447
Percentage	26.6%	18.1%	22.4%
Middle-Upper			
Number	246	17	420
Percentage	24.6%	17.4%	21.0%

Breast Health Information Program
Results from Pre-Test
June 15, 1995 - August 28, 1995

Table 2
Number of Calls

	PERIOD 1			PERIOD 2			TOTAL		
Exposure	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Response Rate**
Automated	1000	297	29.7%	1000	201	20.1%	2000	498	24.9%
Live	1000	215	21.5%	1000	154	15.4%	2000	369	18.5%
X^2	17.7 (p=.000)			7.6 (p=0.01)					
Total	2000	512	25.6%	2000	355	17.8%	4000	867	21.7%

Period 1: June 15, 1995 - July 19, 1995
Period 2: July 20, 1995 - August 28, 1995
Statistically significant areas are shaded

Table 3
Number of Callers to the Automated and Live Systems by Census Area

	PERIOD 1			PERIOD 2			TOTAL		
Exposure	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Response Rate**
a. By Race									
African American	1000	233	23.3%	1000	152	15.2%	2000	385	19.3%
White	1000	279	27.9%	1000	203	20.3%	2000	482	24.1%
X^2	5.6 (p=0.02)			8.9 (p=0.003)					
b. By Income Level									
Low-Moderate	1000	266	26.6%	1000	181	18.1%	2000	447	22.4%
Middle-Upper	1000	246	24.6%	1000	174	17.4%	2000	420	21.0%
X^2	1.1 (p=0.31)			0.17 (p=0.68)					
c. By Income Level within Race									
African American									
Low-Moderate	500	115	23.0%	500	90	18.0%	1000	205	20.5%
Middle-Upper	500	118	23.6%	500	62	12.4%	1000	180	18.0%
X^2	0.05 (p=0.62)			5.6 (p=0.01)					
White									
Low-Moderate	500	151	30.2%	500	91	18.2%	1000	242	24.2%
Middle-Upper	500	128	25.6%	500	112	22.4%	1000	240	24.0%
X^2	2.8 (p=0.11)			2.7(p=0.10)					
d. By Race within Income Level									
Low-Moderate									
African American	500	115	23.0%	500	90	18.0%	1000	205	20.5%
White	500	151	30.2%	500	91	18.2%	1000	242	24.2%
X^2	6.6 (p=0.01)			0.01 (p=0.94)					
Middle-Upper									
African American	500	118	23.6%	500	62	12.4%	1000	180	18.0%
White	500	128	25.5%	500	112	22.4%	1000	240	24.0%
X^2	0.54 (p=0.48)			17.4(p=0.000)					

Statistically significant areas are shaded

Table 3a
Automated Calls vs Live Calls by Exposure and Characteristic

Exposure	PERIOD 1			PERIOD 2			TOTAL		
	Mailings	Calls	Response Rate	Mailings	Calls	Response Rate	Mailings	Calls	Response Rate
a. By Strategy within Race									
African American									
Automated	500	145	29.0%	500	106	21.2%	1000	251	25.1%
Live	500	88	17.6%	500	46	9.2%	1000	134	13.4%
X^2	18.2 (p=0.000)			27.9(p=0.000)					
White									
Automated	500	152	30.4%	500	95	19.0%	1000	247	24.7%
Live	500	127	25.4%	500	108	21.6%	1000	235	23.5%
X^2	3.1 (p=0.08)			1.1 (p=0.31)					
b. By Strategy within Income Level									
Low-Moderate									
Automated	500	167	33.4%	500	101	20.2%	1000	268	26.8%
Live	500	99	19.8%	500	80	16.0%	1000	179	17.9%
X^2	23.7 (p=0.000)			3.0 (p=0.09)					
Middle-Upper									
Automated	500	130	26.0%	500	100	20.0%	1000	230	23.0%
Live	500	116	23.2%	500	74	14.8%	1000	190	19.0%
X^2	1.1 (p=0.30)			4.7 (p=0.03)					
c. By Strategy and Race within Income Level									
Low-Moderate									
African-American									
Automated									
Live	250	70	28.0%	250	57	22.8%	500	127	25.4%
	250	45	18.6%	250	33	13.2%	500	78	15.6%
X^2	7.1 (p=0.008)			7.8 (p=0.005)					
White									
Automated	250	97	38.8%	250	44	17.6%	500	141	28.8%
Live	250	54	21.6%	250	47	18.8%	500	101	20.2%
X_2	17.5 (p=0.000)			0.12 (p=0.73)					
Middle-Upper									
African American									
Automated	250	75	30.0%	250	49	19.6%	500	124	24.8%
Live	250	43	17.2%	250	13	5.2%	500	56	11.2%
X^2	11.4 (p=0.001)			23.9 (p=0.000)					
White									
Automated	250	55	22.0%	250	51	20.4%	500	106	21.2%
Live	250	73	29.2%	250	61	24.4%	500	134	26.8%
X^2	3.4 (p=0.07)			1.2 (p=0.28)					
Total	2000	512	25.6%	2000	355	17.8%	4000	867	21.7

Statistically significant areas are shaded

Table 3b
Automated Calls Only by Characteristic

	PERIOD 1			PERIOD 2			TOTAL		
Exposure	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Resp. Rate**
a. By Race									
African American	500	145	29.0%	500	106	21.2%	1000	251	25.1%
White	500	152	30.4%	500	95	19.0%	1000	247	24.7%
X^2	0.24 (p=0.63)			0.75 (p=0.39)					
b. By Income Level									
Low-Moderate	500	167	33.4%	500	101	20.2%	1000	268	26.8%
Middle-Upper	500	130	26.0%	500	100	20.0%	1000	230	23.0%
X^2	6.6 (p=0.01)			0.01 (p=0.94)					
c. By Race within Income Level									
Low-Moderate									
African American	250	70	28.0%	250	57	22.8%	500	127	25.4%
White	250	97	38.8%	250	44	17.6%	500	141	28.2%
X^2	6.6 (p=0.01)			2.1 (p=0.15)					
Middle-Upper									
African American	250	75	30.0%	250	49	19.6%	500	124	24.8%
White	250	55	22.0%	250	51	20.4%	500	106	21.2%
X^2	4.2 (p=0.04)			0.05 (p=0.82)					
d. Income Level within Race									
African American									
Low-Moderate	250	70	28.0%	250	57	22.8%	500	127	25.4%
Middle-Upper	250	75	30.0%	250	49	19.6%	500	124	24.8%
X^2	0.24 (p=0.62)			0.76 (p=0.38)					
White									
Low-Moderate	250	97	38.8%	250	44	17.6%	500	141	28.2%
Middle-Upper	250	55	22.0%	250	51	20.4%	500	106	21.2%
X^2	16.7 (p=0.000)			0.64 (p=0.43)					
Total	2000	512	25.6%	2000	355	17.8%	4000	867	21.7%

Statistically significant areas are shaded

Table 3c
Live Calls Only by Characteristic

	PERIOD 1			PERIOD 2			TOTAL		
Exposure	**Mailings**	**Calls**	**Response Rate**	**Mailings**	**Calls**	**Resp. Rate**	**Mailings**	**Calls**	**Resp. Rate**
a. By Race									
African American	500	88	17.6%	500	46	9.2%	1000	134	26.8%
White	500	127	25.4%	500	108	21.6%	1000	235	47.0%
X^2	9.0 (=0.003)			29.5 (p=0.000)					
b. By Income Level									
Low-Moderate	500	99	19.8%	500	80	16.0%	1000	179	17.9%
Middle-Upper	500	116	23.2%	500	74	14.8%	1000	190	19.0%
X^2	1.7 (p=0.19)			0.28 (p=0.60)					
c. By Race within Income Level									
Low-Moderate									
African American	250	45	18.0%	250	33	13.2%	500	78	15.6%
White	250	54	21.6%	250	47	18.8%	500	101	20.2%
X^2	1.0 (p=0.31)			2.9 (p=0.09)					
Middle-Upper									
African American	250	43	17.2%	250	13	5.2%	500	56	11.2%
White	250	73	29.2%	250	61	24.4%	500	134	26.8%
X^2	10.1 (p=0.001)			36.5 (p=0.000)					
d. By Income Level within Race									
African American									
Low-Moderate	250	45	18.0%	250	33	13.2%	500	78	15.6%
Middle-Upper	250	43	17.2%	250	13	5.2%	500	56	11.2%
X^2	0.06 (p=0.81)			9.6 (p=0.002)					
White									
Low-Moderate	250	54	21.6%	250	47	18.8%	500	101	20.2%
Middle-Upper	250	73	29.2%	250	61	24.4%	500	134	26.8%
X^2	3.8 (p=0.051)			2.3 (p=0.13)					
Total	2000	512	25.6%	2000	355	17.8%	4000	867	21.7%

Statistically significant areas are shaded

Appendix I: Phase One Data Report (Summary)

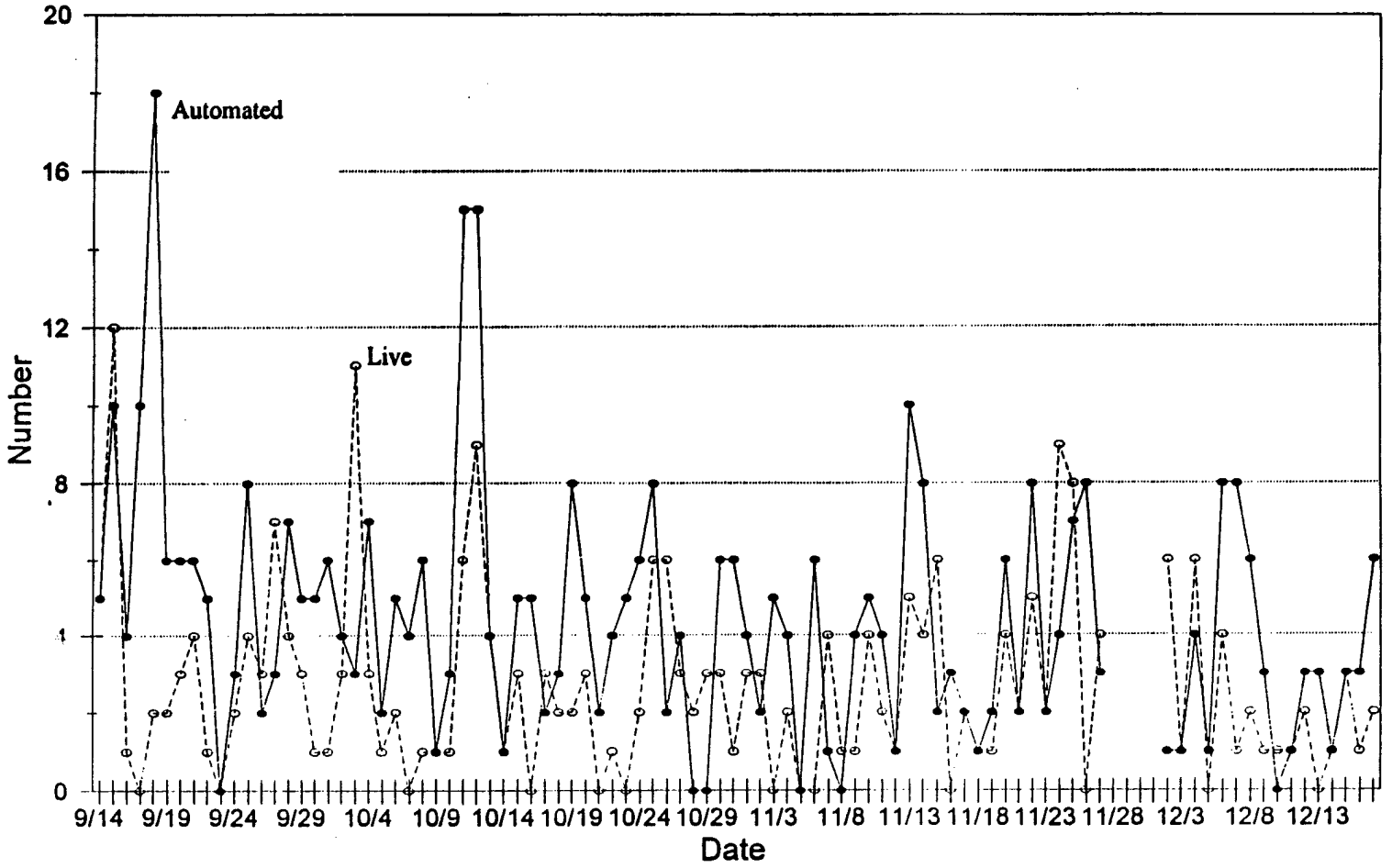
1. Graphic Report
2. Statistical Analysis
3. Data Analysis - General
4. Call Volume Report
5. Data Analysis Summary

Graphic Report

Breast Health Information Project

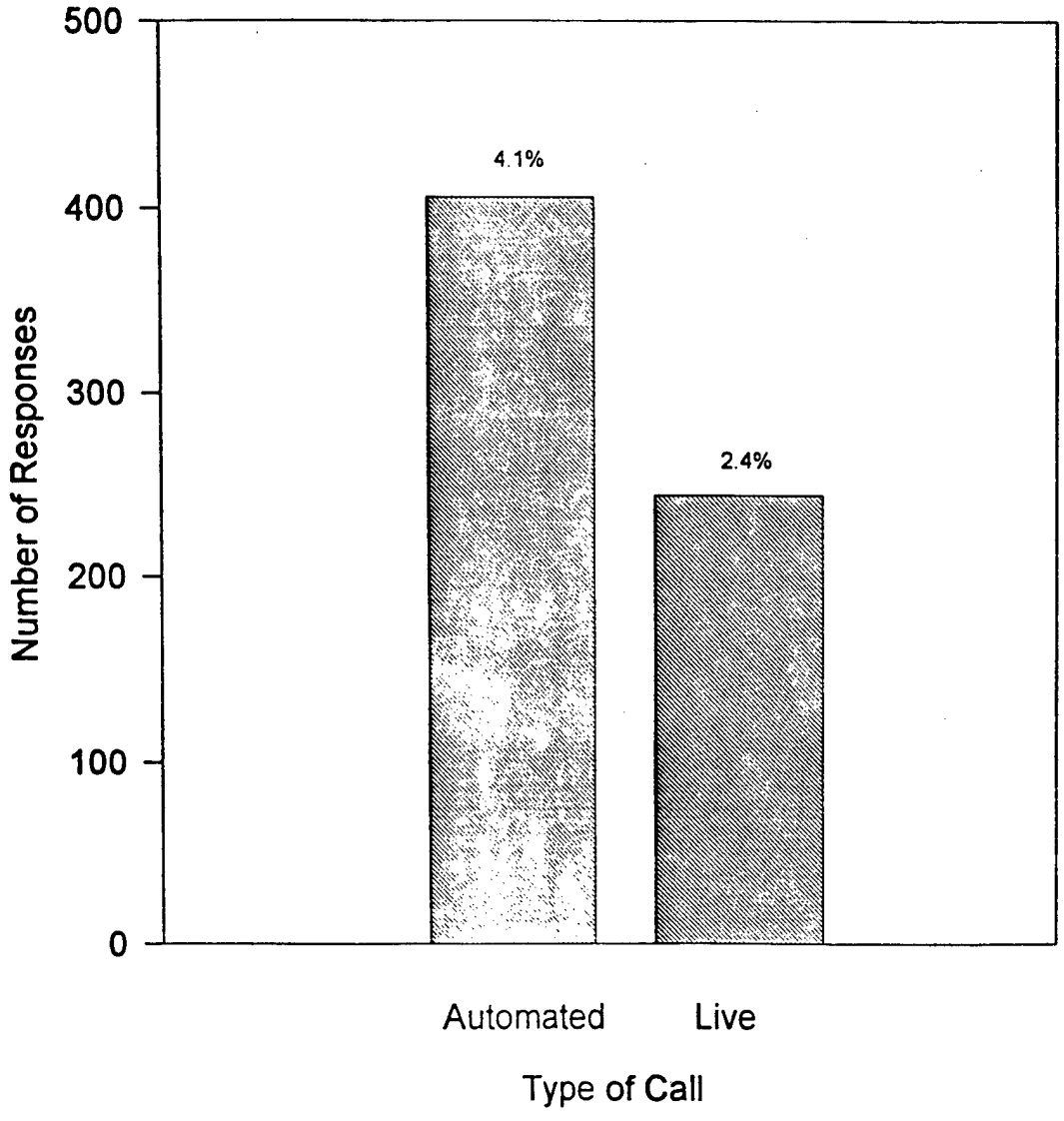
Volume of Calls

September 14 - December 17, 1995



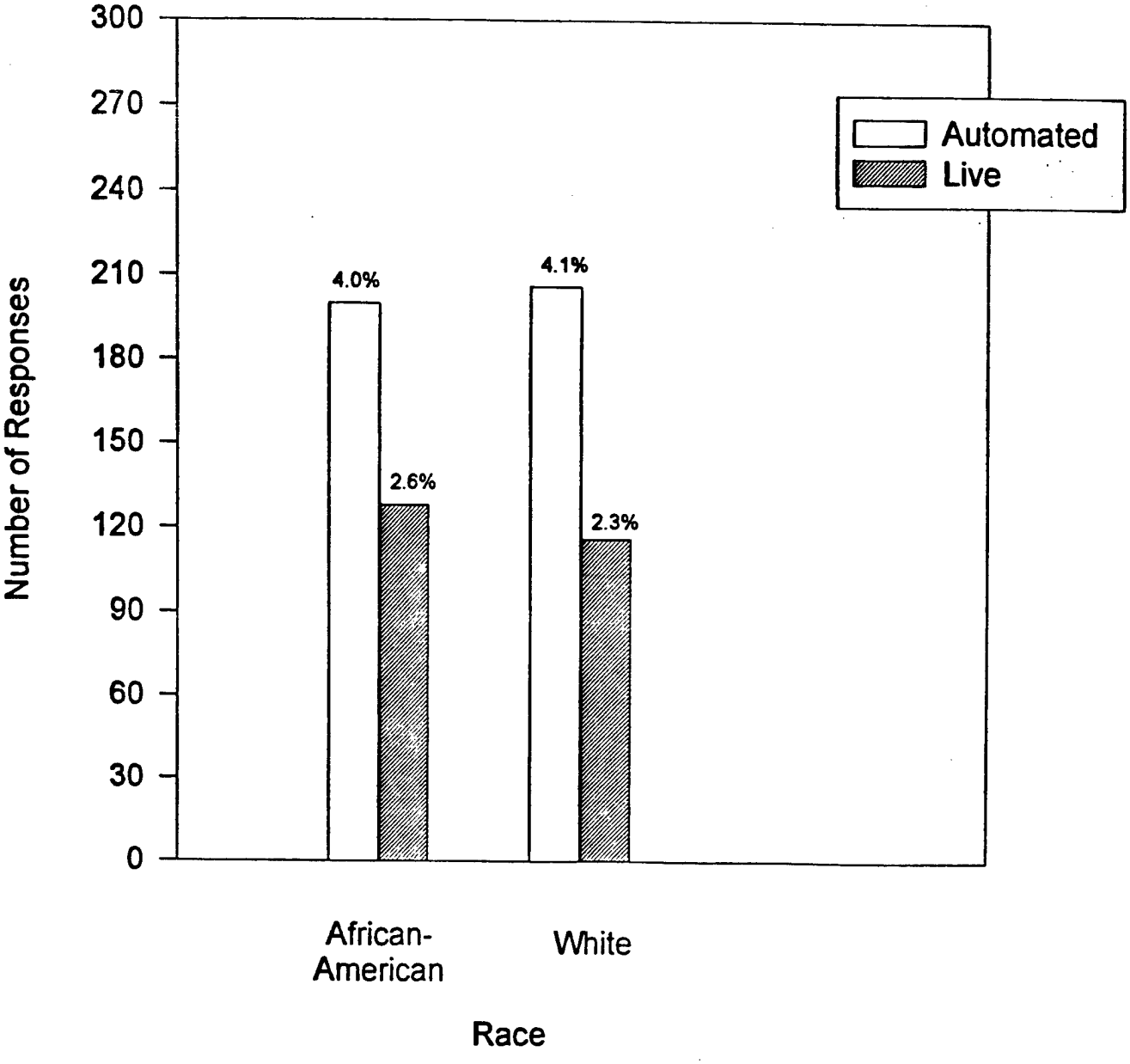
Data for 11-28 to 12-1 are missing.

Breast Health Information Project
Number of Calls
September 14 - December 17, 1995*



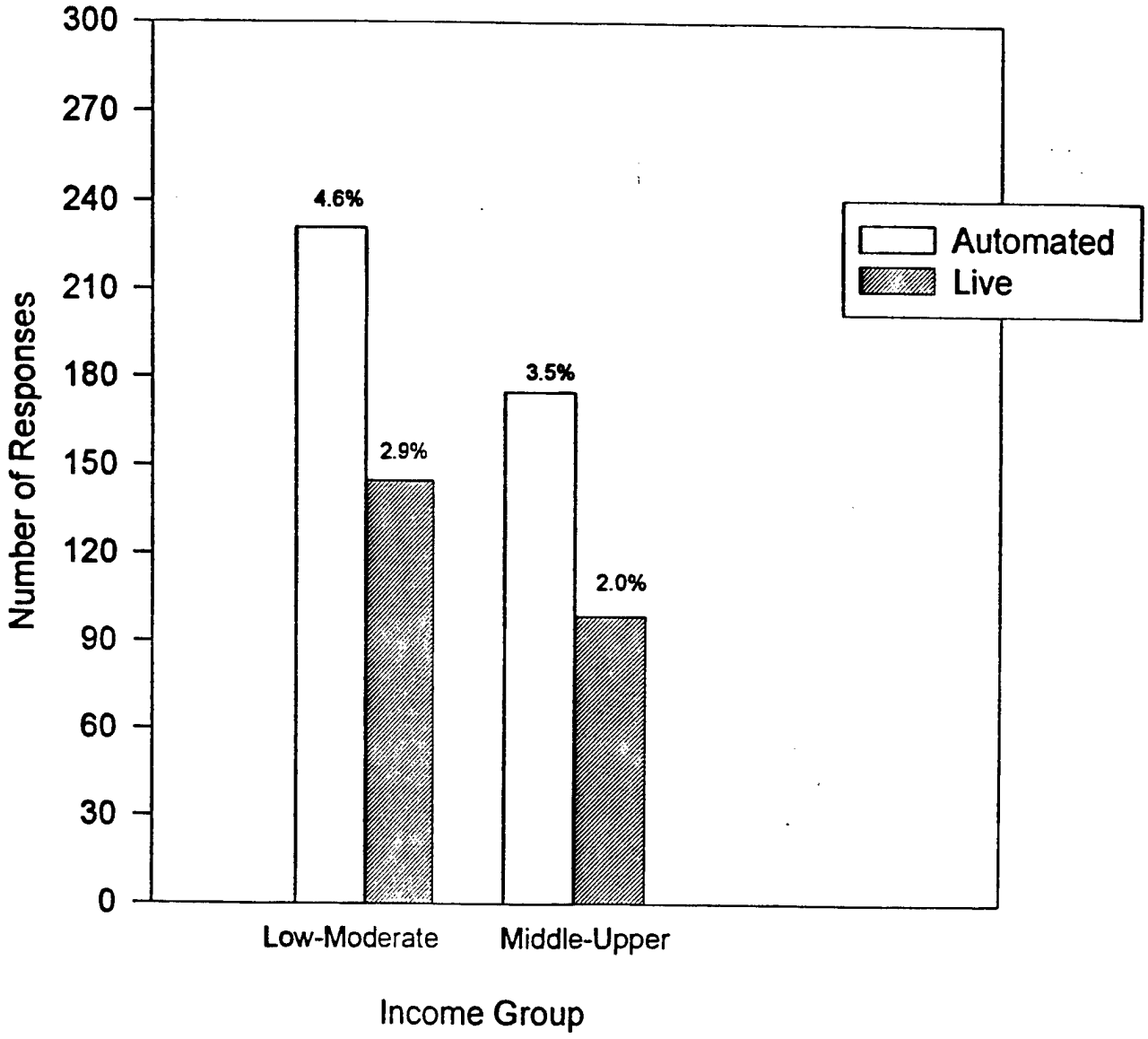
The response rate is shown above each bar.
Missing data 11-28 to 12 -1-95

Breast Health Information Project
Automated vs Live Calls by Race
September 14 - December 17, 1995*



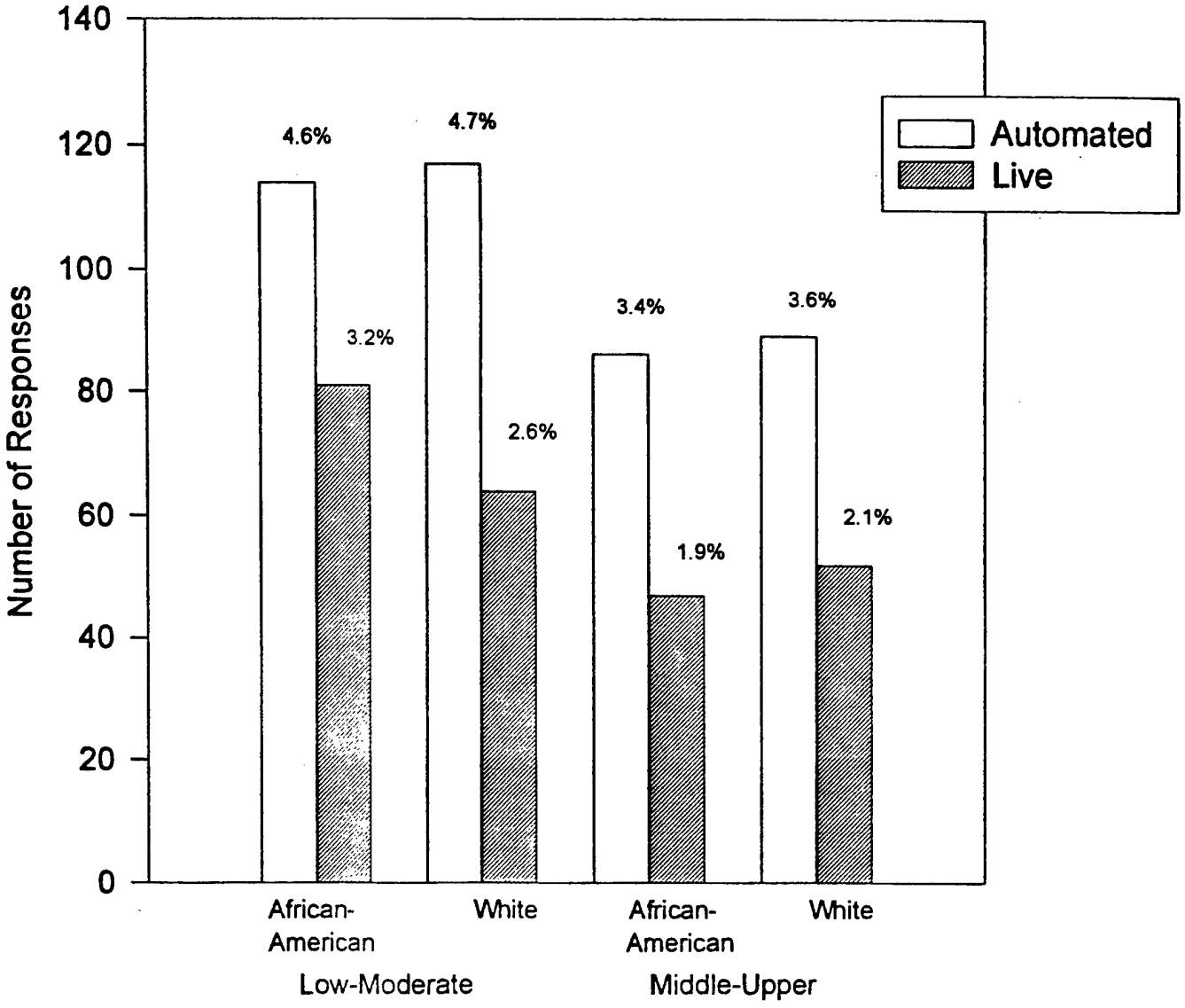
The response rate is shown above each bar.
Missing data 11-28 to 12-1-95

Breast Health Information Project
Automated vs Live Calls by Income Group
September 14 - December 17, 1995*



The response rate is shown above each bar.
Missing data 11-28 to 12-1-95.

Automated vs Live Calls
by Race and Income Group
September 14 - December 17, 1995*



The response rate is shown above each bar.

Missing data for 11-28 to 12-1-95

Statistical Analysis

Breast Health Information Program
Results:September 14 - December 17, 1995

Table 1
Number of Calls

	Mailings	Calls	Response	χ^2 (p-value)
Exposure				
Automated	10000	406	4.1%	41.7 (p=0.000)
Live	10000	244	2.4%	
Total	20000	650	3.3%	

Breast Health Information Program
Results:September 14 - December 17, 1995

Table 2a
Number of Callers to the Automated and Live Systems by Census Area

	Mailings	Calls	Response	χ^2 (p-value)
Exposure				
African-American	10000	328	3.3%	0.057 (p=0.811)
White	10000	322	3.2%	
Low-Moderate	10000	376	3.8%	16.5 (p=0.000)
Middle-Upper	10000	274	2.7%	
African - American				
Low - Moderate	5000	195	3.9%	12.1 (p=0.000)
Middle - Upper	5000	133	2.7%	
White				
Low - Moderate	5000	181	3.6%	5.1 (p=0.02)
Middle - Upper	5000	141	2.8%	
Low-Moderate				
African-American	5000	195	3.9%	0.542 (p=0.462)
White	5000	181	3.6%	
Middle-Upper				
African-American	5000	133	2.7%	0.24 (p=0.624)
White	5000	141	2.8%	

Breast Health Information Program
Results:September 14 - December 17, 1995

Table 3a
Automated Calls vs Live Calls by Exposure and Characteristic

	Mailings	Calls	Response	χ^2 (p-value)
Exposure				
African-American				
Automated	5000	200	4.0%	16.3 (p=0.000)
Live	5000	128	2.6%	
White				
Automated	5000	206	4.1%	26.0 (p=0.000)
Live	5000	116	2.3%	
Low - Moderate				
Automated	5000	231	4.6%	20.4 (p=0.000)
Live	5000	145	2.9%	
Middle - Upper				
Automated	5000	175	3.5%	21.7 (p=0.000)
Live	5000	99	2.0%	
Low - Moderate				
African-American				
Automated	2500	114	4.6%	5.81 (p=0.016)
Live	2500	81	3.2%	
White				
Automated	2500	117	4.7%	16.1 (p=0.000)
Live	2500	64	2.6%	
Middle - Upper				
African-American				
Automated	2500	86	3.4%	11.7 (p=0.001)
Live	2500	47	1.9%	
White				
Automated	2500	89	3.6%	9.99 (p=0.002)
Live	2500	52	2.1%	

Table 3b
Automated Calls Only by Characteristic

	Mailings	Calls	Response	χ^2 (p-value)
Exposure				
African-American	5000	200	4.0%	0.09 (p=0.761)
White	5000	206	4.1%	
Low - Moderate	5000	231	4.6%	8.05 (p=0.005)
Middle - Upper	5000	175	3.5%	
Low - Moderate				
African-American	2500	114	4.6%	0.041 (p=0.84)
White	2500	117	4.7%	
Middle - Upper				
African-American	2500	86	3.4%	0.053 (p=0.817)
White	2500	89	3.6%	
African-American				
Low - Moderate	2500	114	4.6%	4.08 (p=0.043)
Middle - Upper	2500	86	3.4%	
White				
Low - Moderate	2500	117	4.7%	3.97 (p=0.046)
Middle - Upper	2500	89	3.6%	

Table 3c
Live Calls Only by Characteristic

	Mailings	Calls	Response	χ^2 (p-value)
Exposure				
African-American	5000	128	2.6%	0.605(p=0.437)
White	5000	116	2.3%	
Low - Moderate	5000	145	2.9%	8.89 (p=0.003)
Middle - Upper	5000	99	2.0%	
Low - Moderate				
African-American	2500	81	3.2%	2.05 (p=0.152)
White	2500	64	2.6%	
Middle - Upper				
African-American	2500	47	1.9%	0.258 (p=0.612)
White	2500	52	2.1%	
African-American				
Low-Moderate	2500	81	3.2%	9.27 (p=0.002)
Middle-Upper	2500	47	1.9%	
White				
Low - Moderate	2500	64	2.6%	1.27 (p=0.26)
Middle - Upper	2500	52	2.1%	

Data Analysis General

Strategy	Automated System													Live Call taker System										Project Totals									
	# Total by Strategy	# Dial 1 Callers (Main Menu)	%	# Active Callers (1)	%	# Hangups at Welcome	%	# Callers utilizing the Operator before using the system	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A	# Callers Utilizing Directory by Category	%A	# Total by Strategy	# Dial 1 Callers	%	# Active Callers (2)	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A	# Total Incoming Calls	# Dial 1 Callers	%	# Active Callers	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A
A.A. L/M (G.1&5)	114	37	32%	32	28%	65	57%	4	4%	0	0%	3	9%	81	30	37%	42	52%	34	42%	10	24%	195	67	34%	74	38%	99	51%	10	14%
Length of Call	2.54	7.40		8.42										0.76	1.47		1.31						1.80	4.75		4.38						
A.A. M/U (G.2&6)	86	27	31%	27	31%	52	60%	5	6%	0	0%	1	4%	47	14	30%	19	40%	21	45%	10	53%	133	41	31%	46	35%	73	55%	10	22%
Length of Call	19.28	60.92		60.92										0.63	1.35		1.30						12.69	40.58		36.29						
Sub-total AA.	200	64	32%	59	30%	117	59%	9	5%	0	0%	4	7%	128	44	34%	61	48%	55	43%	20	33%	328	108	33%	120	37%	172	52%	20	17%
Length of Call	9.74	29.98		32.44										0.71	1.43		1.68						6.22	18.35		16.80						

L/M Lower/Medium Income
M/U Medium/Upper Income

% % of All Calls
%A Percent of Active Calls

(1) Callers that made a selection after Main menu
(2) Dial 1 callers and Rotary callers that stay on the line

Rev.1/24/96

Strategy	Automated System													Live Call taker System										Project Totals									
	# Total by Strategy	# Dial 1 Callers (Main Menu)	%	# Active Callers (1)	%	# Hangups at Welcome	%	# Callers utilizing the Operator before using the system	%	# Callers Utilizing the Dial out Option to request transfer to counselor	%A	# Callers Utilizing Directory by Category	%A	# Total by Strategy	# Dial 1 Callers	%	# Active Callers (2)	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A	# Total Incoming Calls	# Dial 1 Callers	%	# Active Callers	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A
White L/M (G.4&8)	117	24	21%	21	18%	83	71%	5	4%	0	0%	2	10%	64	14	22%	19	30%	41	64%	3	16%	181	38	21%	40	22%	124	69%	3	8%
Length of Call	1.24	5.27		5.90										0.42	1.19		1.12						0.95	3.76		3.63					
White M/U (G.3&7)	89	17	19%	16	18%	60	67%	2	2%	0	0%	1	6%	52	8	15%	8	15%	34	65%	2	25%	141	25	18%	24	17%	94	67%	2	8%
Length of Call	1.95	9.38		9.93										0.36	0.90		0.90						1.36	6.67		6.92					
Sub-total White	206	41	20%	37	18%	143	69%	7	3%	0	0%	3	8%	116	22	19%	27	23%	75	65%	5	19%	322	63	20%	64	20%	218	68%	5	8%
Length of Call	1.55	6.97		7.64										0.39	1.08		1.05						1.13	4.92		4.86					

L/M Lower/Medium Income
M/U Medium/Upper Income

% % of All Calls
%A Percent of Active Calls

(1) Callers that made a selection after Main menu
(2) Dial 1 callers and Rotary callers that stay on the line

Rev.1/24/96

Strategy	Automated System													Live Call taker System										Project Totals									
	# Total by Strategy	# Dial 1 Callers (Main Menu)	%	# Active Callers (1)	%	# Hangups at Welcome	%	# Callers utilizing the Operator before using the system	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A	# Callers Utilizing Directory by Category	%A	# Total by Strategy	# Dial 1 Callers	%	# Active Callers (2)	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A	# Total Incoming Calls	# Dial 1 Callers	%	# Active Callers	%	# Hangups at Welcome	%	# Callers Utilizing the Dial-out Option to request transfer to counselor	%A
Totals	406	105	26%	96	24%	260	64%	16	4%	0	0%	7	7%	244	66	27%	88	36%	130	53%	25	28%	650	171	26%	184	28%	390	60%	25	14%
Length of Call	5.58	21.00		22.88										0.56	1.32		1.49						3.70	13.40							
Sub-Total L/M	231	61	26%	53	23%	148	64%	9	4%	0	0%	5	9%	145	44	30%	61	42%	75	52%	13	21%	376	105	28%	114	30%	223	59%	13	11%
Length of Call	1.88	6.563		7.42										0.61	1.38		1.25						1.394	4.39							
Sub-totals M/U	175	44	25%	43	25%	112	64%	7	4%	0	0%	2	5%	99	22	22%	27	27%	55	56%	12	44%	274	66	24%	70	26%	167	61%	12	17%
Length of Call	10.46	41.00		41.94										0.49	1.19		1.18						6.86	27.73							

L/M Lower/Medium Income
M/U Medium/Upper Income

% % of All Calls
%A Percent of Active Calls

(1) Callers that made a selection after Main menu
(2) Dial 1 callers and Rotary callers that stay on the line

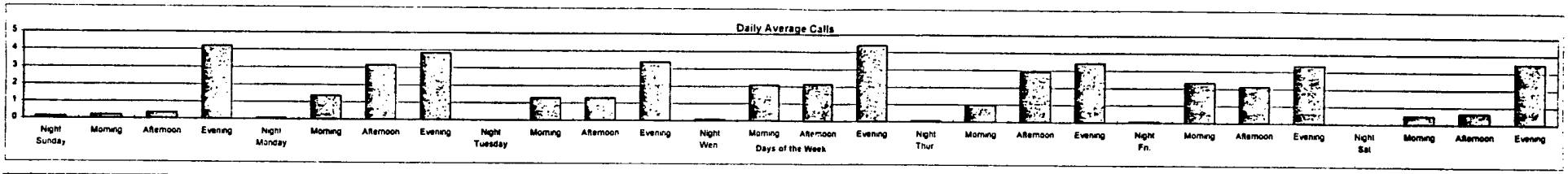
Rev.1/24/96

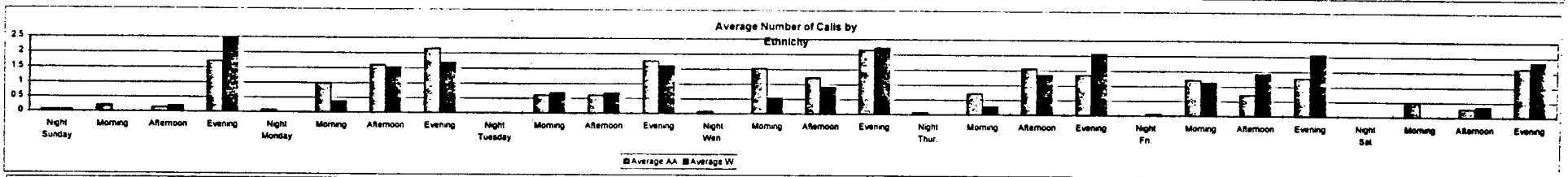
Call Volume Report

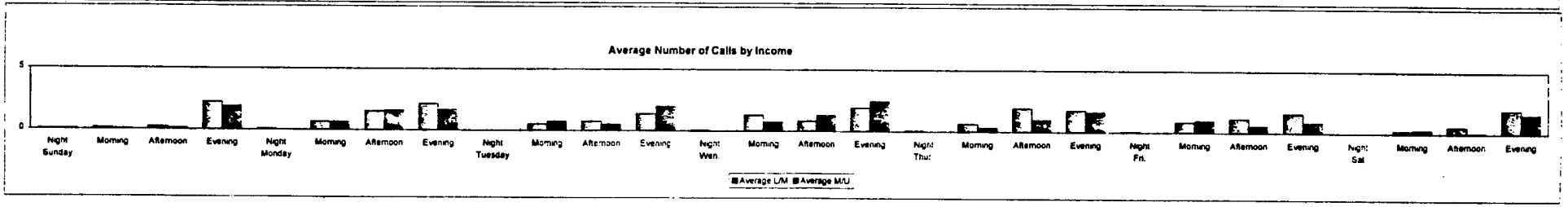
Army Health

Call Volume Report

From : 09/14/95 To: 12/17/95







Night from 12:00 am to 6:00 am
Morning: from 6:00 am to 12:00pm
Afternoon: from 12:00pm to 5:00pm
Evening: from 5:00pm to 12:00am

Rev. 1/24/96, 2:05 PM

AH Data

Call Volume Report

From :09/14/95 To: 12/17/95

	Sunday				Monday				Tuesday				Wen				Thur				Fri				Sat				Totals
	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	
AA L/M G1 Auto	0	2	1	12	0	4	11	13	0	3	2	5	1	7	5	10	1	2	7	4	0	3	2	6	0	2	1	10	114
AA M/U G2 Auto	0	1	0	7	0	5	3	6	0	1	1	10	0	1	6	14	0	1	4	6	0	1	4	8	0	1	1	5	86
W M/U G4 Auto	0	0	2	14	0	2	14	11	0	2	6	6	0	4	3	5	0	2	6	11	0	6	3	13	0	0	0	7	117
W L/M G3 Auto	0	0	1	12	0	2	3	3	0	2	0	5	0	2	3	6	0	1	10	10	1	0	4	12	0	0	0	12	89
AA L/M G5 Live	0	0	1	3	1	3	5	8	0	0	5	4	0	7	2	2	0	6	10	6	0	6	3	3	0	1	2	3	81
AA M/U G6 Live	1	0	0	2	0	1	2	1	0	4	0	4	0	5	3	2	0	1	1	3	0	7	1	1	0	3	0	5	47
W M/U G8 Live	0	0	0	4	0	1	2	4	0	3	0	6	0	0	5	11	0	1	3	3	0	7	6	3	0	0	0	5	64
W L/M G7 Live	1	0	0	5	0	0	1	4	0	2	3	4	0	1	1	7	0	0	0	5	0	3	7	1	0	0	5	2	52

	Sunday				Monday				Tuesday				Wen				Thur				Fri				Sat				Total
	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	
Totals	2	3	5	59	1	18	41	50	0	17	17	44	1	27	28	57	1	14	41	48	1	33	30	47	0	7	9	49	650

	Sunday				Monday				Tuesday				Wen				Thur				Fri				Sat				Total
	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	
Totals AA	1	3	2	24	1	13	21	28	0	8	8	23	1	20	16	28	1	10	22	19	0	17	10	18	0	7	4	23	328
Totals W	1	0	3	35	0	5	20	22	0	9	9	21	0	7	12	29	0	4	19	29	1	16	20	29	0	0	5	26	322

	Sunday				Monda,				Tuesday				Wen				Thur				Fri				Sat				Total
	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	
Totals Auto	0	3	4	45	0	13	31	33	0	8	9	26	1	14	17	35	1	6	27	31	1	10	13	39	0	3	2	34	406
Totals Live	2	0	1	14	1	5	10	17	0	9	8	18	0	13	11	22	0	8	14	17	0	23	17	8	0	4	7	15	244

	Sunday				Monday				Tuesday				Wen				Thur				Fri				Sat				Total
	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	Night	Morning	Afternoon	Evening	
Totals L/U	1	2	3	32	1	9	20	28	0	7	10	18	1	17	11	25	1	9	27	25	1	12	16	22	0	3	8	27	336
Totals M/U	1	1	2	27	0	9	21	22	0	10	7	26	0	10	17	32	0	5	14	23	0	21	14	25	0	4	1	22	314

Rev. 1/24/96 , 2:03 PM

Data Analysis Summary

ARMY HEALTH DATA ANALYSIS SUMMARY -- TEST I
TEST PERIOD: Sept. 14 through Dec. 17, 1995
Excluded Dates: Nov. 28, 29, 30 & Dec. 1
Total Number of Days in Test Period = 91 Days
Report Date: January 25, 1996

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
TOTAL CALL VOLUME									
1. Total Call Volume - Overall	195	133	181	141	328	322	376	274	650
2. Total Call Volume - Automated	114	86	117	89	200	206	231	175	406
3. Total Call Volume - Live	81	47	64	52	128	116	145	99	244
4. Total # of Active Callers	74	46	40	24	120	64	114	70	184
5. Caller Preference (Auto vs. Live)	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto
HIGH/LOW CALLING PERIODS									
6. Call Volume Peak[1] - Overall	Mon. Eve.	Wed. Eve.	Sun. Eve.	Sun. Eve.	Mon. & Wed. Eve.	Sun. Eve.	Sun. Eve.	Wed. Eve.	Sun. Eve.
7. Lowest Call Volume - Overall	Night	Night	Night	Night	Tues., Fri., & Sat. Night	Night & Sun. Morn.	Tues. & Sat. Night	Night	Tues. & Sat. Night

[1] Definition of Time Periods: Morning = 6A to 12P; Afternoon = 12P to 6P; Evening = 6P to 12A; Night = 12A to 6A.

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
HIGH/LOW CALLING PERIODS (Cont'd.)									
8. Call Volume Peak - Auto	Mon. Eve.	Wed. Eve.	Sun., Fri., & Sat. Eves.	Sun. Eve. & Mon. Aft.	Wed. Eve.	Sun. Eve. & Mon. Aft.	Sun. Eve.	Sun. & Fri. Eves.	Sun. Eve.
9. Call Volume Peak - Live	Thurs. Aft.	Wed. Eve.	Wed. Eve./ Fri. Aft.	Wed. Eve.	Fri. Morn.	Wed. Eve.	Mon. Eve.	Fri. Morn	Wed. Eve.
10. Lowest Call Volume - Auto	Night	Night	Night	Night	Night	Night	Night	Night	Night
11. Lowest Call Volume - Live	Night	Night	Night	Night	Night	Night	Night	Night	Night
AVERAGE DAILY CALL VOLUME									
12. Average Daily Call Level[2] - Overall	2.14	1.46	1.99	1.55	3.60	3.54	4.13	3.01	7.14
13. Average Daily Call Level - Auto	1.25	.95	1.29	.98	2.20	2.26	2.54	1.92	4.46
14. Average Daily Call Level - Live	.89	.52	.70	.57	1.41	1.27	1.59	1.09	2.68

[2] Total call volume (1) divided by 91 days.

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
AUTOMATED PERSONAL PROFILE QUIZ									
15. Gender of Callers (F/M)	10 F 1 M	7 F 0 M	6 F 2 M	1 F 0 M	17 F 1 M	7 F 2 M	16 F 3 M	8 F 0 M	24 F 3 M
16. Family Cancer History (Y/N)	2 Y 9 N	3 Y 4 N	0 Y 8 N	0 Y 1 N	5 Y 13 N	0 Y 9 N	2 Y 17 N	3 Y 5 N	5 Y 22 N
17. Breast Exam (Y/N)	6 Y 5 N	4 Y 3 N	1 Y 7 N	1 Y 0 N	10 Y 8 N	2 Y 7 N	7 Y 12 N	5 Y 3 N	12 Y 15 N
18. Personal History of Cancer (Y/N)	1 Y 10 N	0 Y 7 N	0 Y 8 N	0 Y 1 N	1 Y 17 N	0 Y 9 N	1 Y 18 N	0 Y 8 N	1 Y 26 N
19. # of Callers Completing Profile	7	7	8	1	14	9	15	8	23
a. % of Active Callers Completing Profile[3]	9.46%	15.22%	20%	4.17%	11.7%	14.1 %	13.2%	11.4 %	12.5%
b. % of Total Callers Completing Profile[4]	3.5%	5.26%	4.42%	.71%	4.27%	2.8%	3.99%	2.92 %	3.54%

[3] Callers completing profile (19) divided by # of active callers (4).

[4] Callers completing profile (19) divided by total # of callers (1).

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
REAL-TIME AUTOMATED SURVEY									
20. # of Callers Completing Survey	9	4	2	0	13	2	11	4	15
a. % of Active Callers[5]	12.2%	8.70%	5%	0%	10.8%	3.1%	9.65%	5.7%	8.15%
b. % of Total Callers[6]	4.62	3.01%	1.1%	0%	3.96%	.62%	2.93%	1.5%	2.31%
21. Age of Respondents									
a. Between 20 and 39	4	4	4	0	8	4	8	4	12
b. Between 40 and 59	3	0	0	0	3	0	3	0	3
c. Age 60 or Older	0	0	0	0	0	0	0	0	0
22. Source of Info. About Res. Project									
a. Postcard	6	4	4	0	10	4	10	4	14
b. Friend or relative	0	0	0	0	0	0	0	0	0
c. Other	1	0	0	0	1	0	1	0	1
23. Subsequent Actions to Take									
a. Breast Exam	4	0	1	0	4	1	5	0	5
b. Mammogram	3	3	0	0	6	0	3	3	6
c. Doctor Appt.	2	1	1	0	3	1	3	1	4
d. None of Above	0	0	0	0	0	0	0	0	0

[5] Callers completing automated survey (20) divided by # of active callers (4).

[6] Callers completing automated survey (20) divided by total number of callers (1).

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
MESSAGE POPULARITY									
24. Average # of Messages Accessed	1.8	2.4	1	2.6	2.1	1.7	1.52	3.26	1.9
25. Most Frequent Message Accessed[7]	10	5, 10	1,7	1, 4, 7.3, 8	10	1	10	5	10
26. Messages Accessed Zero Times	7.1, 8.2, 12, 13,	7.2, 8.2, 12.1, 12.3	5, 6, 8.1, 8.2, 10.2, 11, 12, 13, 14	7.1, 10.1, 10.2, 11, 14	8.2, 12.1, 12.3	10.2, 11, 14	8.2, 12.1, 12.2, 12.3, 13	N/A	N/A
HARDCOPY REQUEST									
27. Most Frequent Hardcopy Request - Overall (Mail + Fax)	10.2	10.2	N/A	9	10.2	9	10.2	10.2	10.2
28. No Request for Hardcopy - Overall (Mail + Fax)	9, 14	9	9, 10.2, 14	10.2, 14	9	10.2, 14	9, 14	N/A	N/A
29. Most Frequent Request for Fax[8]	N/A	10.2	N/A	N/A	10.2	N/A	N/A	10.2	10.2
30. No Request for Fax	9, 10.2, 14	9, 14	9, 10.2, 14	9, 10.2, 14	9, 14	9, 10.2, 14	9, 10.2, 14	9, 14	9, 14

[7] List of message numbers and titles attached.

[8] Fax available for messages 9, 10.2, and 14 only.

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
HARDCOPY REQUEST (Cont'd.)									
31. Most Frequent Request for Mail Copy[9]	10.2	10.2, 14	N/A	9	10.2	9	10.2	9, 10.2, 14	10.2
32. No Request for Mail Copy	9, 14	9	9, 10.2, 14	10.2, 14	9, 14	10.2, 14	9, 14	N/A	N/A
RETURNED POSTCARDS									
33. Number of Postcards Returned from 10,000-piece Mailing -- **Automated System** (2,500 per strategy)	78	46	114	57	124	171	192	103	295
34. Percentage of Postcards Returned from 10,000-piece Mailing -- **Automated System** (2,500 per strategy)	3.12%	1.84%	4.56%	2.28%	2.48%	3.42 %	3.84%	2.06 %	2.95%
33. Number of Postcards Returned from 10,000-piece Mailing -- **Live System** (2500 per strategy)	70	52	144	51	122	195	214	103	317
34. Percentage of Postcards Returned from 10,000-piece Mailing -- **Live System** (2500 per strategy)	2.80%	2.08%	5.76%	2.04%	2.44%	3.90 %	4.28%	2.06 %	3.17%

[9] Mail copy available for messages 9, 10.2, and 14 only.

DATA CATEGORY	STRATEGY				ETHNICITY		INCOME LEVEL		OVER-ALL
	AA LM	AA MU	W LM	W MU	AA	W	LM	MU	
RETURNED POSTCARDS (Cont'd.)									
35. Total Number of Postcards Returned from 20,000-piece Mailing (5,000 per strategy)	148	98	258	108	246	366	406	206	612
36. Percentage of Total Postcards Returned from 20,000-piece Mailing -- (5,000 per strategy)	2.96%	1.96%	5.16%	2.16%	2.46%	3.66 %	4.06%	2.06 %	3.06%

ARMY HEALTH -- TEST I
LIST OF AVAILABLE MESSAGES

Message Number	Message Title
1	What is Breast Cancer?
2	Put Fear Aside--Breast Cancer is Curable
3	Breast Cancer Myths
4	Every Breast Lump or Pain Is Not Cancer
5	Breast Cancer and African American Women
6	Men, You Can Get Breast Cancer Too
7	Are You at Risk for Getting Breast Cancer?
7.1	Risk Factors
7.2	The Pill
7.3	Lifestyle
8	How to Lower Your Risk for Getting Breast Cancer
8.1	The Role of Diet
8.2	The Role of Exercise
9*	Breast Examination
10	All About Mammograms
10.1*	When to get a Mammogram
10.2*	Where to Get a Mammogram
11	Where Do I Get More Information About Breast Cancer?
12	How Can Breast Cancer Be Treated?
12.1	Surgery
12.2	Treatments
12.3	Research
13	There Is a Life After Breast Cancer
14*	Community Bulletin Board
15	How Should I Support a Friend or Relative with Breast Cancer?

* Fax or mailed material is available following this message.

SUMMARY OF LIVE FOLLOW-UP TELEPHONE SURVEY

I. COMPLETED FOLLOW-UP SURVEY DEMOGRAPHIC DATA[1]

Survey Respondent	Sex	Race	Age	Box #	Auto vs. Live	Strategy
Respondent 1	Female	Black	39 - 45	1032	Auto	AALM
Respondent 2	Female	Black	29	5038	Live	AALM
Respondent 3	Female	Black	44	5038	Live	AALM
Respondent 4	Female	White	43	5038	Live	AALM
Respondent 5	Female	White	30	2032	Auto	AAMU
Respondent 6	Female	White	25	1032	Auto	AALM
Respondent 7	Female	White	38	4032	Auto	WLM
Respondent 8	Female	White	27	4032	Auto	WLM

Totals:

- **Auto vs. Live:** According to TeleSonic phone records, 5 persons called the automated system and 3 persons called the live system. However, telephone survey results indicate that 7 persons phoned the automated system and one person phoned the live system.
- **Income:** According to TeleSonic phone records, 7 respondents were lower moderate income level, and one respondent was middle upper income level.
- **Race:** According to TeleSonic phone records, 6 respondents were from African American census areas, and 2 respondents were from white census areas. However, survey responses indicate that 3 respondents were African American and 5 were white.
- **Age:** Respondents ranged in age from 25 to 45.

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[1] 14 persons agreed to participate in the follow-up survey. Of these 14, 8 surveys were completed, 4 surveys are still in process, and 2 had invalid or non-working telephone numbers.

Appendix J: Phase One Test Focus Group Reactions (Summary) and Pre-Questionnaire

1. Focus Group Reaction (Summary)
2. Pre-Questionnaire

Focus Group Reactions (Summary)

BREAST HEALTH INFORMATION PROJECT
ASSESSMENT OF TEST ONE DATA:
FOCUS GROUP STUDY

Purpose of Focus Group Study

The Breast Health Information Project is a three-year research effort being conducted by TeleSonic and the U.S. Department of the Army. The research is designed to determine if automated voice information systems are an easy, effective way to communicate information about breast cancer prevention. As part of this study, we are examining user preferences for an automated system versus a live counselor system, and determining if there are any statistically significant differences among racial and income groups.

Recently, TeleSonic completed the first large-scale test of this information system and we have gathered some preliminary findings. Through this focus group study, we seek insight into the statistical findings from our first test and to gather feedback that can be incorporated into our second test.

Structure of the Focus Group Study

In order to determine the validity of the test results by racial lines and income levels, five separate focus group sessions were conducted. Each session targeted a specific racial and/or income group. The five groups represented in the study were as follows:

- **FOCUS GROUP #1**: African American Lower Moderate Income Level (Anne Arundel Dept. of the Aging -- Older Group)
- **FOCUS GROUP #2**: African American Middle Upper Income Level (Various Professional Women)
- **FOCUS GROUP #3**: White Lower Moderate and Middle Upper Income Levels (Anne Arundel National Organization for Women)
- **FOCUS GROUP #4**: White Middle Upper Income Level (Anne Arundel League of Women Voters)
- **FOCUS GROUP #5**: African American and White Lower Moderate Income Level (Anne Arundel Business and Workforce Development Center - Younger Group)

To help us gain insight about the Test One results, the following research questions were addressed in the focus group sessions:

1. Why the mortality rate for breast cancer is decreasing overall, but increasing for African American women.
2. Why there was a higher response rate for the automated system than the live counselor system, and why a person would call an automated system versus a live counselor system.
3. What would entice a person to stay on the system longer and listen to multiple messages.
4. Why the "free gift" offer appears to have had little or no impact on the call rate.
5. Which topics in the listing were particularly important, was the topic range sufficient, and/or were any critical topics missing.
6. What strategies should be used to reach large numbers of persons with an unappealing topic such as breast cancer.
7. Any additional comments or feedback.

Factors Tested and Evaluated in Test One

Test One was conducted in the Baltimore metropolitan area. In order to determine racial and income level preferences for an automated versus live counselor information system, target groups were divided into four main categories by race and income. A total of 20,000 postcards were mailed (5,000 to each of the four target groups) to households within census areas that met pre-determined criteria for race and income level. Each of the four target groups were divided in half, so that half the group received information about an automated information system, and half received information about a live counselor system. Based on call volumes into the live and automated systems, as well as caller activity within those systems, we were able to determine some preliminary caller preferences by time of day, race, and income level.

Preliminary Findings from Test One

Overall, *callers preferred using an automated information system over a live counselor system.* In addition, the following preliminary findings were determined.

By Time of Day:

- Callers across all race and income lines preferred using the automated system in the evenings, from 6PM to 12AM.

By Race:

- A similar number of African American and White persons responded to the mailing by calling either the automated or live counselor systems.
- A similar number of African Americans and Whites called the automated system.
- A similar number of African Americans and Whites called the live counselor system.
- African Americans callers spent more time using the automated system than Whites.

By Income Level:

- A greater number of lower to moderate income level persons responded to the mailing than middle to upper level income persons.
- A greater number of lower to moderate income level persons called the automated system than middle to upper income persons.
- Lower to moderate income level persons spent more time using the automated system than middle to upper income level persons.

Assessment of Test One Data: Results of the Focus Group Study

Overall, the focus group results supported the preliminary findings from Test One, as follows:

- Groups preferred the convenience and confidentiality of a 24-hour automated system. This supports the even call volumes that were received by the automated system across racial lines during Test One.

- Groups preferred to call during the evening hours when they had less distractions. This supports the Test One result that the greatest call volume to the system came between the hours of 6PM to 12 AM.

- Group responses suggested that white women had greater awareness of health issues and about where to get information than African American women. This point supports why African American women spent more time on line during Test One than white women.

- Group responses suggested that middle/upper income women had greater awareness of health issues and about where to get information than lower/moderate income women. This point supports the Test One result that more lower/moderate income women called the system than middle/upper income women.

- Within each group, there was a more favorable support for the automated system, although some members preferred live counselors and the personalization gained from human involvement.

Groups members provided consistent responses and opinions on the following issues:

- Members from all five groups stated they preferred to call when it was convenient for them, usually in the evening.

- Members from all groups cited the convenience of the automated system. They liked the fact that could do other things while on the phone, as well as gather preliminary information, educate themselves, and increase their confidence levels before talking to a live counselor.

- Members from all groups expressed their hesitancy of talking to a live counselor without understanding some of the issues and without assurances of confidentiality.

- Members from all groups felt that the free gift sounded like a marketing gimmick, and that it diminished the importance of the subject matter.

The groups were divided along racial and income lines on the following issues:

- How to make the introduction for the automated system more enticing so as to increase the time on line. Most African American women believed that using children to make an emotional appeal to their mother/sister/grandmother would motivate them to listen further. Most white women felt that an emotional appeal using children would turn them off, and stated that message content would be more motivating to them.

- Why African American women's mortality rate is increasing. African American women, especially those in the lower income groups, cited financial and insurance concerns as a primary reason they don't seek care. They also cited lack of knowledge and fear to learn as other reasons. Most white women, on the other hand, believed that there is a greater than ever awareness today about breast cancer, and that information is readily available in many different forms and places.

Specific results associated with the seven research questions were as follows:

1. **Increase in the African American Mortality Rate**. Most responses to this issue varied by both race and income. Insurance and financial issues were a big concern for lower income groups as they apply to access to care. African American groups believed there is no consistent information on breast cancer, while white women thought there is greater than ever access to information and greater awareness.

2. **Automated vs. Live Counselor Response Rate**. All groups provided consistent responses on this issue. Overwhelmingly, all groups stated that they would use an automated system for general information, and a live counselor for more specific questions. Older persons stated that they would go straight to their doctor for information. All groups cited confidentiality and the convenience of a 24-hour system as major advantages to an automated system.

3. **Increasing the Time on Line**. Most responses were consistent across racial and income lines, such as caller interest in topic, quality of recording, menu simplicity, and message content. Groups differed on the issue of the automated system introduction. African American women suggested suing children as an emotional appeal, while white women felt that they would not like using children as an object in the introduction.

4. **Free Gift**. Responses on this issue were consistent across all racial and income lines. All groups believed that the free gift sounded like a marketing "gimmick", and that it diminished the importance of the subject matter. All groups thought the free gift involved some kind of "catch".

5. **Topics in Message Library**. Most responses were consistent across racial and income lines. The groups all believed that the range of topics was good, and all groups made similar suggestions for including age, menopause, and pregnancy-related topics.

6. **Outreach Strategies**. Responses on this issue varied across racial and income lines. Responses ranged from using commercials to doctors to churches and community outreach to newspapers. Groups were split on the issue of using radio versus television.

7. **Other Comments**. Issues identified were specific to the particular racial and income group, including education of senior population in using automated systems and concern about message length and mailers.

Pre-Questionnaire

BREAST HEALTH INFORMATION "ON-LINE" PROJECT
PRE- QUESTIONNAIRE

Please Take 5 Minutes or so And Complete The Questions Below:

1. **Date :**_____ 2. **Gender:**_____Male _____Female

3. **Race:** ___African American ___White _____Other

4. **Age:** ____ Under 30 Yr. ___30-40 Yr. ____41-50 Yr. ____51-60 Yr. ___ 61 Or Older

5.**Currently I Get Medical Information From: (Check All Sources Used)**
____a friend ____radio ad ____ mail pieces ____church
____newspaper ____magazine ____doctor ____other

6. **I Have Called A Live Counselor For Information About A Medical Issue (Information (Systems Like "ask a doctor" or "ask a nurse").** _____**Yes** _____**No**

7. **I Have Called An Automated Telephone Message System For Information About A Medical Issue.** _____Yes _____No

8. **I Would Seek Medical Information From An Automated Telephone System IF:**

_____

_____

9. **My Attitude Toward Any Information About Breast Cancer Is (check all that apply):**
____fear or I get scared! ____Don't want to know ____Want to know more

10. **I Have Had Some Training On Computers.**_____**Yes** _____**No**

11. **I Use A Computer At My Job.** _____**Yes** _____**No**

12. **I Use A Computer In My Home.** _____**Yes** _____**No**

13. **I *Would* Use A Computer To Get Medical Information IF:**

_____

14. **I *Would not* Use A Computer to Get Medical Information, Because:**

_____

15. **I would use A telephone to get information *before* I would use a computer**___**Yes**___**No**

16. **My Choices For How I Get most medical Information Include: (Check All Sources Used)**
____a friend ____radio ad ____mail pieces ____church
____newspaper ____magazine ____doctor ____computer
____telephone ____live counselor ____books ____other