CALIFORNIA STATE UNIVERSITY, NORTH RIDGE

A CANCER EDUCATION PROGRAM FOR
BUSINESS AND INDUSTRY

A thesis submitted in partial satisfaction
of the requirement for the degree of

Master of Public Health

by

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ABSTRACT

A CANCER EDUCATION PROGRAM FOR
BUSINESS AND INDUSTRY

by
Rosemarie Hanisch

A cancer education program was developed and two pilot programs implemented in two branches of a major department store chain in the Los Angeles area. Attendance was voluntary as was participation in the evaluation of the program. A total of 104 people participated in eight identical sessions which utilized the small-group lecture and discussion method. The program covered in a general rather than specific way skin, lung, colon-rectum, breast, uterine, and oral cancer together with the safeguards and warning signals of cancer.

The purpose of this project was two-fold: to reduce cancer mortality rates in the target population by affecting a change in knowledge and behavior, and to develop a cancer education program which could be utilized successfully in similar settings.

Statistical evaluation of the program was based on knowledge and behavior criteria. Data were obtained from identical pretest, posttest, and post-posttest paper and pencil questionnaires. The answers for each item on these questionnaires were evaluated with a chi-square test to determine if the differences between the before and after scores were statistically significant. Over-all comparisons
involving mean ratios of correct or desirable responses before and after the program were made.

While individual item analysis resulted in some unexpected findings, the overall outcome was not surprising. It was found that the program was to a large extent effective in the augmentation of knowledge but only slightly effective in influencing behavior change.

It was possible on the basis of this program to establish guidelines and make recommendations for further study in this field.
Chapter 1

INTRODUCTION

The great challenge is to find ways of weaving the discoveries of science into the fabric of daily living.
Benjamin D. Paul, 1955

Health education in the last two decades has become an ever-increasing component of all programs designed to influence health-directed behavior. As such it has advanced from the dispersion of general health information via the mass media to highly specific information and methods conveyed on a one-to-one basis. Health education techniques have been evaluated and refined and the goals of health education have significantly expanded to include diseases and health problems which only one decade ago did not exist, or were not recognized as such.

The field of health education has widened from the formal, instructional school setting to hospitals, public health agencies, and voluntary health organizations.

Impetus for these changes lies in the advancement of medical science, engineering, economics, and social changes which occurred. Despite giant steps which were taken in these areas, however, large segments of the population still lack some of the basic prerequisites for health, such as good nutrition, adequate housing and sanitation, and relative economic security. Others whose basic needs are satisfied are still far from the ideal state of health centering around health
Despite advances in communication techniques it is still difficult to reach large segments of the population because physical, psychological, and social barriers exist which prevent people from accepting new ideas and translate knowledge acquired into new practices.

In cancer education these barriers are especially pronounced. Cancer still is a progressive disease for which only limited preventive measures exist. In the area of treatment, many techniques are used alone or in combination. But even physicians are often reluctant to name "cures," preferring the terms "remission" or "arrest" of disease instead. Some of these misgivings together with high cancer death rates (f:11-12) for specific types of cancer are probably inducive to the fearful attitude which seems to prevail wherever the subject is mentioned.

The word "cancer" itself seems to be used only by the defiant or the daring, the rest prefer such euphemisms as tumor, malignancy, growth, or lump, unable or unwilling to admit the truth. For many people today cancer has become equal to certain, agonizing demise.

Cancer statistics show that one in every six deaths from all causes is due to cancer (5:3). Estimates for 1973 show that 665,000 new cases will be diagnosed and 350,000 people will die from cancer that year (5:3). These statistics seem to justify a fearful attitude toward this disease, but they also point out the direction toward which health education has to proceed to affect change in
behavior related to this dreaded disease.

It is not enough to continue to use commonly accepted approaches of health education. New techniques have to be developed to reach more and more people. Cancer is a disease which strikes most frequently in older age groups (5;3) and it has an estimated medical bill of well over 200 million dollars per year (36:11). With a work force of 85 million people, health education programs in business and industry could greatly influence both incidence and mortality statistics by reaching a large percentage of those most likely to contract this disease. Both company and individual expenses arising from prolonged disabling illness could be reduced.

The health education program investigated in this study was developed with these considerations in mind.

Purpose of the Program

A health education program was designed to increase existing levels of knowledge regarding cancer in a selected group of department store employees. Further, the education program was designed to bring about a change in behavior relating to this disease.

Application and Limitation of the Program

Due to the very general subject matter covered, this program could be successfully carried out in many industrial settings and used for male and female employees.

The vocabulary has been pretested and was found to be suitable for people with varying educational backgrounds.
For those with a high degree of knowledge concerning cancer, the discussion period at the end of the program might be most informative. It was speculated that those with a limited to good general education background might benefit most.

It was hoped that the program might help to dispel the negative attitudes toward cancer which the target population was expected to have although this feature was not included in the evaluation.

Definition of Terms

In order to avoid misunderstandings which might occur as a result of misinterpretation of terms used in this program, the following definitions are offered.

**Health Education.** That part of a health program which has as its goal the change of individual and group behavior toward health promotion, disease prevention, treatment, and rehabilitation.

**Industry.** Any site where few or many people assemble on a regular basis to carry out work (13).

**Pap Test.** Examination of a smear of body secretions, frequently from cervix or vagina, used in early detection of cancer. Named after George N. Papanicolaou, an American physician (39:1610).

**Procto-sigmoidoscopy.** Direct inspection of the lower bowel through a lighted tube (sigmoidoscope) (39:1303).
Chapter 2

REVIEW OF THE LITERATURE

In this chapter a survey of the literature relating to occupational health programs and health education in industry is given.

The History of Occupational Health

Occupational medicine is not a new discipline. References to the plight of workers can be found in ancient literature. Hippocrates cited lead as an occupational health hazard and Galen knew diseases most prevalent in miners (20). Remarks on the hard life of people who work were made in early Egyptian literature (37). But the father of occupational medicine was clearly Bernardino Ramazzini, an Italian physician. His book Diseases of Workers published in 1713 (30), revealed outstanding ability to observe, investigate, and describe occupational diseases. He listed fifty-three different occupations and their specific diseases ranging from "apothecaries" to "workers at dirty trades" and including some rather unusual occupations such as wetnurses, blacksmiths, and healers by inunction. A special section described "Diseases of Learned Men." However, Ramazzini's most important contribution to occupational medicine seems to have been the dictum to confer upon the occupation of every patient as much consideration as one would physical symptoms or complaints. There were many other men who made contributions to occupational medicine, before and
after Ramazzini, but none matched his genius and foresight.

Concern for occupational diseases was never restricted to the medical profession and with the inclusion by Ramazzini of social factors, multidimensional expansion of the field was possible.

The next great impact in occupational medicine occurred as a result of the Industrial Revolution in England. Chadwick’s "Report on the Sanitary Conditions of the Laboring Population in Great Britain" (18:93-94) attacked conditions resulting from industrial progress. Thomas Percival was instrumental in the passing of the Factory Act of 1833, the first legislation in industrial medicine (18:118).

In the United States the first limited industrial health program was instituted in Massachusetts in 1869 (20:4). The most important contribution to occupational medicine in this country was made by Dr. Alice Hamilton who combined occupational diseases and social medicine (20:4) and most directly followed in the footsteps of Ramazzini.

The Workmen's Compensation Laws initiated in 1911 still govern the practice of occupational medicine and provide a measure of protection for the labor force. They gave impetus to accident prevention and emphasis on safety in industry. Specific occupational diseases were first covered under an expanded version of the original compensation laws passed in 1930 (20:4).

World War II and a significantly reduced labor force in the United States, led to the introduction of two new concepts in occupational medicine, prevention, and rehabilitation. It became necessary
to protect the health of the worker and permit those with special handicaps into the labor force.

Components of Occupational Health Programs

As can be seen in the preceding section, occupational medicine has come a long way. In the United States three phases can be identified; the accident and safety period, the occupational disease and industrial period, and the present era of full-range preventive medicine within and outside the work environment.

These phases were not always clearly separated by time or content. During each phase one or more components were added and the already existing concept expanded. Some occupational health programs in force today may lean more heavily on components of one phase than another, some may resist progression from one phase to another, some may be all-inclusive, and others very limited.

Determinants and Scope. The health needs of any population are influenced by a variety of variables including age, sex, racial and ethnic distribution, population size, and education. In an occupational setting, specific work hazards have to be considered as do environmental problems which affect the population as a whole but which may be compounded for the worker.

Each type of business or industry faces problems which are unique for a specific work setting as well as problems which are universal. The lung cancer hazards in uranium mining, for example, or for people in frequent contact with asbestos, fluorspar, arsenic, chromium, nickel, iron, zinc, vapors of some aromatic
hydrocarbons, or derivatives of mineral oil or petrol (2), are well known. There is no question that those exposed to these hazards on a long-term, intensive basis have a much greater possibility for developing lung cancer.

In addition, it has been suggested for some time that smoking and air pollution might also contribute to the development of lung cancer (25). At work, these factors which apply to the entire population, are compounded by the specific carcinogens mentioned above. For some of the carcinogens protective measures have been found which lessen or completely eliminate their impact. This leaves the worker to contend with air pollution and/or smoking. Since the ratio or weight of these hazards in carcinogenesis has not been established, it seems logical that some consideration should be given to them as well, not just to the more definitive causative agents.

Many occupational health workers have felt that off the job illness or injuries are more costly in terms of lost time and disability than occupationally related accidents and diseases (16). For this reason the scope and function of occupational health programs has been gradually changing toward supportive, personal health maintenance, encompassing all levels of prevention. As a result, programs are being focused on both work-related and non-work-related diseases and hazards.

Unifying divergent needs. Views often differ between physician, management, and employees on what is a good occupational health program (40). A physician may be more oriented toward preventive medicine for diseases in general and thus focus
attention on some specific conditions which are known to have high incidence or mortality rates. Management is more likely to be interested in protecting the investment it has made in an employee and wants a return from any occupational health program relative to this investment. The return is usually examined in terms of reduced turnover and absenteeism, reduced mortality and morbidity, and reduced insurance rates as well as reduction in legal suits (21). The costs for an employee health program therefore have to be lower than costs for all these factors combined.

The consumer-employee of any company may have different thoughts. He may be more interested in obtaining first aid services than anything else.

A good occupational health program, obviously, is one in which all these views are represented to the satisfaction of the people involved.

Content. It must be obvious that not every company or industrial plant is able to provide its employees with all that is desirable. Approximately 30 million employees of major companies have fair to good health programs but there are close to 50 million people in small companies where little or no consideration has been given to their health needs (34).

New occupational health and safety legislation (14) should bring about a change in this area. Too, a change in the delivery of health care all over the United States will have a beneficial effect.

Until these changes come into being, employees are dependent on the largesse of management, the influence of their
unions, and their own initiative and motivation as far as health care and maintenance is concerned.

This is not to negate the existence of some good occupational health programs. The periodic executive examination (24) carried out by many companies is an excellent way to protect company investment in an individual while at the same time practicing preventive medicine. Such examinations have the added benefit of raising the level of concern an individual has for his health and well-being, as well as initiating early treatment for existing problems. It seems ironic that periodic examinations are in most instances provided for that segment of the work force best able to pay for them and most likely to obtain them on their own. Those workers concerned more with services and less with a changing philosophy in health care delivery have to settle for partial services or no services at all. For some it may be a breathmobile screening provided free of charge (9) but with follow-up to be paid for by the employee. Some companies in conjunction with local health departments or voluntary organizations such as the American Cancer Society, have established screening clinics for cervical cancer (17, 44). Other companies, recognizing that genital disease, excluding pregnancy and cancer, is second only to respiratory disease among women workers, have instituted annual pelvic examinations for their women employees (28).

Companies with a large percentage of younger employees have started drug abuse sessions for users and their families (38). Alcoholism or mental illness programs have also been developed in a number of companies (31, 38).
Many of the services and programs described have not been provided on a regular basis. Rather, they were established as the result of pressure brought on by individual workers. In some instances it seems that management used the programs as pacifiers. Companies with on-going programs are relatively few. Among them have been the Fairchild Camera and Instrument Corporation (31), the New York Telephone Company (6), and the Tennessee Valley Authority (8). These organizations have been offering complete physical examinations of specific screening tests to all employees on a voluntary basis. The system used in most instances was the highly computerized technique of Multi-Phasic Health Screening (MPHS). This technique has found increasing acceptance during the past decade and is often seen as the forerunner to, if not the method of the future, especially if it is combined with some form of health teaching.

Public health departments, too, have become more concerned with occupational health (45). In the Kansas City, Missouri area, the Clay County Health Department has instituted a health education and preventive medical services program for industries with less than two hundred employees (23). Specific problem areas covered were cancer, diabetes, visual defects, tuberculosis, and tetanus immunization.

Voluntary agencies as well are becoming interested in occupational health. Once primarily concerned with fund-raising activities, agencies like the American Cancer Society have actively participated in the development of health programs for business and industry by supplying educational materials, speakers, leaders for
smoking cessation clinics, or administrators for pap screening clinics on an on-going basis.

**Health education.** All of the health programs discussed so far have a definite health education component. In several programs this component seems accidental rather than planned, implicit rather than explicit.

The goal of health education, premeditated, individual, voluntary, preventive health behavior, was thought to be realized through changes in knowledge, attitudes, values, and beliefs. However, the effect of attitude on behavior change has been under attack for some time. Rather than attitudes changing behavior, the reverse might be true (3, 7, 19). This leaves knowledge as a possible major component influencing health behavior and it is this area which many health education programs emphasize.

The methods of health education are communication methods: individual interviews or counseling, small group communications, or mass media techniques.

A review of industrial health education programs revealed an almost complete lack of evaluation regarding methods, effects, knowledge, or behavior change (4, 10, 11, 12, 27, 29). Almost all of the programs reviewed were characterized by extensive use of mass media methods and the absence of evaluation.

The American Cancer Society has sponsored industrial health education programs nationwide (26). Most of these programs seem to have been evaluated only in terms of employee goodwill produced and assumptions as to lives and money saved. Three pilot
programs were specifically conducted by the American Cancer Society for evaluation purposes in three different geographic locations. The programs utilized a questionnaire before and after the program to determine effect. It was found that the programs had increased knowledge regarding the warning signals of cancer, but they were not effective in inducing employees to go for checkups in the absence of specific symptoms (36:12).

The Fairchild Camera and Instrument Corporation is one of the few companies which evaluated their health education program. Here 80 percent of the women were induced to routinely examine their breasts for early signs of cancer (31).

Dr. Marjorie Young (43), in an investigation of twenty-five industrial health programs in Massachusetts, where program evaluation was uniformly absent, pointed out that the lack of such practices invariably prolonged the perpetuation of errors and misconceptions. It does not seem sufficient to merely conduct a health education program without some form of evaluation. Assumptions about a program may be correct but without statistical evidence to substantiate the assumptions, the findings may be meaningless and could be dangerous.

A review of the literature has indicated that evaluation of industrial health education programs has been minimal. For this reason and with consideration for the ever-increasing cancer mortality rates in the United States, the following cancer education program for business and industry was developed, implemented, and evaluated.
The program was based on some of the recommendations made by Felton (13) which included: participation of employees in the planning and execution stages, emphasis on the small-group method, supplemental use of printed materials, consideration for the total environment of the worker, and solicitation of needs.
Chapter 3

MATERIALS AND METHODS

This chapter presents the purpose of the program, program objectives, the study population, planning stages, promotion, program design, and methods of evaluation.

Purpose of the Program

The main purpose of the program was to induce employees to adopt regular physical, dental, and breast self-examination routines, to increase specific knowledge concerning the pap test, proctosigmoidoscopy, the effects and dangers of smoking, and frequent prolonged exposure to the sun.

The plan was to present information in a non-threatening way. This was thought to be more effective in changing behavior. It was hoped that after the education program, participants would be better informed and feel secure enough to ask for specific tests if they were not offered as part of a physical examination.

Program Objectives

A good health education program should result in less illness or higher survival rates. Specific preventive measures for cancer have been formulated but there are questions as to their reliability and/or effectiveness.

In the absence of definite preventive measures, one is forced into the next level of prevention. For cancer, early diagnosis
and treatment components which may reduce mortality seem most promising in terms of success. Therefore, the primary objective for this program can be stated as follows:

There will be a significant reduction in the mortality rate from cancer among employees who participate in the cancer health education program.

Certain steps have to be taken to accomplish this goal. These steps can be formulated into secondary objectives. In this particular program the objectives involved behavioral and knowledge components and were stated as follows:

1. The program will significantly increase the proportions of employees who have regular medical and dental examinations, with or without symptoms.

2. The program will increase the proportion of women employees who practice monthly breast self-examination.

3. Employees who participate in the program will have a significant increase in knowledge of general cancer facts.

4. The proportions of those employees able to select the seven warning signals of cancer from a list of ten will increase as a result of the education program.

The Study Population

A total of 104 people from two branches of a major department store chain in the Los Angeles area participated in the program. Although the program was designed for both sexes only three of the participants were men.
Educational background varied (41) from completion of grammar school to completion of college. The age groups ranged from under twenty-one to above sixty-one. Occupations concentrated heavily on sales personnel and clerical workers, but included maintenance and cafeteria workers as well as department heads.

The population was stratified only according to sex and age. Cognizant of the fact that education might have been an important variable, it was excluded from the questionnaire because the author felt that baseline knowledge levels might be indicators of the same and be more relevant to the subject matter. A deciding factor in the exclusion of this variable was the not inconsiderable pressure by management to limit questionnaire items to the smallest number possible. Since permission for evaluation of any kind was granted only after lengthy discussions, the author was only too willing to compromise.

Random selection of participants was not possible. Attendance was voluntary as was participation in the testing. The author was aware of the possible bias introduced by participation on the basis of self-selection.

Planning the Program

The proposed health education program was confronted by difficulties in its early planning stages.

The problem began with the selection of a suitable business or industry for the program. Personnel representatives of one industrial plant favored a cancer education program but when higher officials were approached, a very negative attitude prevailed.
Statements such as "It would not work," or "If we allow one organization to come in we have to admit others," or "Nothing controversial can be presented," were not only discouraging but also began to shed doubt on the feasibility of such a program.

However, persistence was rewarded in the end. A large department store chain in the Los Angeles area wanted a cancer education program for its employees in thirteen different locations and was willing to discuss details and program content.

In discussing possible programs with representatives of the department store chain it was thought that a cancer education program could concentrate on one or two subject areas; breast cancer for women, and colon cancer for men. This would make detailed discussion possible and at the same time emphasize the hopeful side of cancer since both types have a high potential for cure if detected early. Written materials and several films on these subjects were presented to top management to illustrate this type of program.

Although very much in favor of a program at first, management at this point had many objections. One was the suitability of materials such as a film on breast self-examination for mixed audiences, since separate programs had been ruled out by that time. Despite efforts to point out that the same ends could be met by using charts and illustrations, management remained adamant (32).

Because selection of subject matter by employees was not feasible, specific subject matter acceptable to management had to be found. The issue was finally settled and a very general cancer
education program developed. It was agreed to emphasize the hopeful side of cancer by concentrating discussion on the seven safeguards and minimizing the seven warning signals of cancer. An outline of the program which was submitted and accepted is shown in the Appendix.

It was agreed that one or two pilot programs should be implemented and evaluated and the resulting revised program carried into the remaining branches of this department store chain (32).

Promotion of the Program

Promotion of the program was facilitated through posters which informed employees that a health education program was to be held. The posters included the date, time, and place of the same.

In addition, appearance of the program planners at a department head meeting resulted in an increased level of awareness of this segment of the employee group.

Spot announcements provided by the American Cancer Society were made over the public address system before the presentation. For this, management assumed responsibility.

The in-store newspaper was not used in the promotion of this program because it is published in the central office and has identical content for all branches. It was pointed out that it might be better to complete one or two programs and then set a schedule for all the other branches. This schedule, together with some of the results, might promote the program more efficiently and effectively.
**Program Design**

The program was conducted as an informal, small-group presentation of facts and figures, enlivened by visual aids that included a large poster listing the seven safeguards, two anatomical charts depicting the lymphatic system, and statistical estimates of cancer incidence and mortality for 1973.

The more formal part of the program was followed by group discussion in a question and answer period. It was hoped that in this way, special interests would become apparent and the program would assume a personalized style, more inducive to change in behavior than the relatively impersonal lecturing.

Refreshments were provided by management of the store and perhaps enhanced the informal atmosphere.

The program closed with the distribution of pamphlets for each subject area covered and referral to the American Cancer Society for any questions or problems which might arise in the future.

A total of eight such sessions were given, two each at two different branches of the department store chain in question. The author and another graduate student alternated as speakers and discussion leaders. Since a question could arise as to the qualifications of these speakers, it should be pointed out that both were Registered Nurses and had worked in cancer research for some time.

**Methods for Evaluation**

Statistical evaluation of the program centered on knowledge and behavior criteria.
Evaluation instruments consisted of a pretest, posttest, and post-posttest. The instruments were pretested on eight subjects and minor adjustments in vocabulary and sentence structure were made as they became necessary.

The pretest given just before the program was used primarily to collect baseline data against which progress or change was to be measured. The posttest given immediately after the program had the objective of measuring knowledge only since the time between the two tests, was too short to make behavior change a component. One page was added to the posttest only, since management wanted some feedback on the value of such programs to employees and the desirability of other such programs in the future. Employees were also invited to make comments and suggestions on this page.

The post-posttest was given three months after the program to determine if a change in behavior took place and if knowledge gained in the program was retained. This test had one additional question regarding participation in the health education program since evaluation of non-participants on a small scale would serve little purpose unless this were done as a control measure.

The tests were given in the form of three basically identical questionnaires with the exceptions mentioned above. The questionnaires were clearly divided into knowledge and behavior sections. Regarding behavior the choices were limited to "yes" or "no" except for one write-in answer. In the knowledge section the choice was between "true" and "false" with "don't know" added in an attempt
to eliminate guessing.

Measurement resulted in ratios of those who answered "yes" in the behavioral section and those who gave the correct answer or listed all seven warning signals as far as knowledge was concerned.

The chi-square test was used to test for statistically significant differences between before and after, correct (desirable) and incorrect (undesirable) responses.
Chapter 4

ANALYSIS AND RESULTS OF THE PROGRAM

In this chapter the statistical results of the program are presented as they relate to knowledge and behavior criteria, and an overview and discussion of these results is given.

Findings Relating to Knowledge

Results of the health education program as they relate to knowledge before and after the program are shown in Table 1. Before the program, an average of 75 percent of all answers were correct; after the program this figure rose to 90 percent, a mean increase of 15 percent.

Separate item analysis showed that most improvement occurred on the question regarding procto-sigmoidoscopy (#21) with an increase of 44 percent. Second in improvement was the question referring to protection against the sun (#23) with a 31 percent increase. These were followed by a question related to the common characteristic of all cancers (#16) and the importance of dental visits (#20), where correct responses increased by 19 percent in each case.

A decrease in correct answers was noted on the question requesting an opinion as to the curability of cancer (#17). Some change, though not statistically significant, was noted concerning the statement that all breast lumps are cancerous (#22), and the
Table 1. This table shows frequencies and percentages of correct responses before the education program (pretest), immediately after the education program (posttest), and three months after the education program (post-posttest). While change is given in percent to facilitate visual comparison of data, the statistical evaluation was made using the actual numbers of correct and incorrect responses with a chi-square test.
### Table 1

**Frequency (Percent) of Correct Responses**

**Posttest**

<table>
<thead>
<tr>
<th>Question #</th>
<th>Pretest $F_X$</th>
<th>Pretest %</th>
<th>Posttest $F_X$</th>
<th>Posttest %</th>
<th>Change Posttest %</th>
<th>Change Posttest %</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>53/73 (73)</td>
<td>94/102 (92)**</td>
<td>23/25 (92)</td>
<td>+19</td>
<td>+19</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>68/73 (93)</td>
<td>90/104 (87)</td>
<td>21/26 (81)</td>
<td>-6</td>
<td>-12</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>69/74 (99)</td>
<td>103/104 (99)</td>
<td>25/25 (100)</td>
<td>+6</td>
<td>+7</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>53/69 (77)</td>
<td>92/102 (90)*</td>
<td>23/25 (92)</td>
<td>+13</td>
<td>+15</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>46/74 (62)</td>
<td>84/104 (81)**</td>
<td>23/26 (88)*</td>
<td>+19</td>
<td>+28</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>26/70 (37)</td>
<td>83/102 (81)**</td>
<td>21/25 (84)**</td>
<td>+44</td>
<td>+47</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>69/73 (95)</td>
<td>101/104 (97)</td>
<td>26/26 (100)</td>
<td>+2</td>
<td>+5</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>46/73 (63)</td>
<td>97/103 (94)**</td>
<td>25/26 (100)**</td>
<td>+31</td>
<td>+37</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>63/74 (85)</td>
<td>98/103 (95)*</td>
<td>25/26 (96)</td>
<td>+10</td>
<td>+11</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>55/71 (77)</td>
<td>89/102 (87)</td>
<td>19/26 (73)</td>
<td>+10</td>
<td>-4</td>
<td></td>
</tr>
</tbody>
</table>

| Mean        | (75)         | (90)         | (90)         | +15        | +15               |
| Max.        | (95)         | (99)         | (100)        | +44        | +47               |
| Min.        | (37)         | (81)         | (73)         | -6         | -12               |
| Range       | (58)         | (18)         | (17)         | 50         | 59                |

$X^2$ significant at

* $p = .05$

** $p = .01$
statement inquiring about the best protection against cancer (#18). The mean increase in knowledge was still apparent three months after the program.

Age as a variable. A look at the frequency of correct responses by age (Table 2) shows that the older age group was more knowledgeable before the program than the younger group but that both groups were equal after the program with percent increases of 18 and 11 respectively.

In both age groups most improvement occurred on the item relating to procto-sigmoidoscopy (#21). In the younger group, significant improvement occurred on the question related to protection against the sun (#23) where the increase paralleled that of the older age group. Improvement in the younger group was further pronounced on the item questioning the importance of dental visits in cancer detection (#20), an increase not found in the older group. Concerning the seven warning signals of cancer (#25), the younger group showed an increase in correct answers while the older group did not.

In the older group, improvement on the item inquiring into the nature of breast lumps (#22) could not be documented. In this group a decrease occurred relating to the seven warning signals (#25).

Both groups documented a decrease in regard to the curability of cancer (#17), consistent with the total findings described in the preceding pages.
Table 2. This table shows frequencies and percentages of correct responses before and immediately after the education program, comparing two age groups ($\leq 40$, $> 40$). While change is given in percent to facilitate visual comparison of data, the statistical evaluation was made using the actual numbers of correct and incorrect responses with a chi-square test.
### Table 2

**Frequency (Percent) of Correct Responses**

(By Age)

<table>
<thead>
<tr>
<th>Question #</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;40 %</td>
<td>&gt;40 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F_X</td>
<td>F_X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>26/36 (72)</td>
<td>43/47 (91)*</td>
<td>+19</td>
</tr>
<tr>
<td>17.</td>
<td>35/36 (97)</td>
<td>43/48 (90)</td>
<td>-7</td>
</tr>
<tr>
<td>18.</td>
<td>33/36 (91)</td>
<td>47/48 (98)</td>
<td>+7</td>
</tr>
<tr>
<td>19.</td>
<td>24/35 (68)</td>
<td>40/48 (83)</td>
<td>+15</td>
</tr>
<tr>
<td>20.</td>
<td>20/36 (55)</td>
<td>42/48 (87)*</td>
<td>+32</td>
</tr>
<tr>
<td>21.</td>
<td>11/35 (31)</td>
<td>37/48 (77)**</td>
<td>+46</td>
</tr>
<tr>
<td>22.</td>
<td>34/36 (94)</td>
<td>48/48 (100)</td>
<td>+6</td>
</tr>
<tr>
<td>23.</td>
<td>22/36 (61)</td>
<td>46/48 (96)**</td>
<td>+35</td>
</tr>
<tr>
<td>24.</td>
<td>30/36 (83)</td>
<td>46/48 (96)</td>
<td>+13</td>
</tr>
<tr>
<td>25.</td>
<td>22/34 (64)</td>
<td>41/48 (85)</td>
<td>+21</td>
</tr>
</tbody>
</table>

Mean: 72 90 +18 79 90 +11
Max.: 97 100 35 95 100 +42
Min.: 31 77 -7 43 75 -5
Range: 66 23 42 52 25 47

\( x^2 \) significant at

* \( p = .05 \)

** \( p = .01 \)
Examination status as variable. Knowledge evaluated by examination status is shown in Table 3. It was found that those who saw both their physician and dentist regularly had a higher level of knowledge than those who did not visit a physician or dentist, or only visited one or the other.

Comparing mean percentage scores between these two groups it could be seen that the latter group learned more since the knowledge mean increased by 18 percent while in the former group this increase was only 11 percent.

Both groups were approximately equal in knowledge of cancer facts after the program.

Most improvement in both groups occurred on items relating to procto-sigmoidoscopy (#21) and protection against the sun (#23) consistent with prior findings. In the group with regular checkups, improvement in responses relating to a characteristic of cancer (#16) were statistically significant.

For the group without regular checkups, most improvement occurred on items inquiring into the importance of dental visits (#20) and the effects of smoking on lung cancer (#24). In this group, slight improvement was noted regarding the pap smear (#19) and annual checkups (#18).

Findings Relating to Behavior

Presumable effects of the program on behavior are illustrated in Table 4. Improvement overall was slight, only 7 percent. None of the changes were statistically significant. The findings may have occurred by chance alone. Despite the obvious need for further
Table 3. This table shows frequencies and percent of correct responses before and immediately after the education program, comparing two groups, those with regular medical and dental examinations (M+D), and those with either regular medical or regular dental examinations, or no medical and dental examinations (OTHER). While change is given in percent to facilitate visual comparison of data, the statistical evaluation was made using the actual numbers of correct and incorrect responses with a chi-square test.
<table>
<thead>
<tr>
<th>Question #</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M+D</td>
<td>Other</td>
<td>M+D</td>
<td>Other</td>
</tr>
<tr>
<td>FX %</td>
<td>FX %</td>
<td>FX %</td>
<td>FX %</td>
</tr>
<tr>
<td>16.</td>
<td>25/35 (71)</td>
<td>28/38 (70)</td>
<td>56/60 (93)*</td>
</tr>
<tr>
<td>17.</td>
<td>34/35 (97)</td>
<td>34/37 (92)</td>
<td>52/62 (84)</td>
</tr>
<tr>
<td>18.</td>
<td>36/36 (100)</td>
<td>34/38 (89)</td>
<td>62/62 (100)</td>
</tr>
<tr>
<td>19.</td>
<td>27/34 (79)</td>
<td>26/36 (72)</td>
<td>53/60 (88)</td>
</tr>
<tr>
<td>20.</td>
<td>26/36 (72)</td>
<td>20/38 (53)</td>
<td>49/62 (79)</td>
</tr>
<tr>
<td>21.</td>
<td>14/35 (40)</td>
<td>12/35 (34)</td>
<td>49/61 (80)**</td>
</tr>
<tr>
<td>22.</td>
<td>36/36 (100)</td>
<td>33/37 (89)</td>
<td>59/62 (95)</td>
</tr>
<tr>
<td>23.</td>
<td>22/35 (63)</td>
<td>23/38 (61)</td>
<td>59/61 (97)**</td>
</tr>
<tr>
<td>24.</td>
<td>34/36 (94)</td>
<td>29/38 (76)</td>
<td>60/62 (97)</td>
</tr>
<tr>
<td>25.</td>
<td>25/35 (71)</td>
<td>28/35 (80)</td>
<td>53/60 (88)</td>
</tr>
</tbody>
</table>

Mean: 79  72  90  90  +11  +18  
Max.: 100  92  100  98  +40  +46  
Min.: 40  34  79  80  -13  -2  
Range: 60  58  21  18  53  48  

X² significant at.
* p = .05
** p = .01
Table 3. (Cont.) This table shows frequencies and percent of correct responses before and three months after the education program, comparing two groups; those with regular medical and dental examinations (M+D), and those with either regular medical or dental examinations, or no medical and dental examinations (OTHER). While change is given in percent to facilitate visual comparison of data, the statistical evaluation was made using the actual numbers of correct and incorrect responses with a chi-square test.
Table 3 (Cont.)
Frequency (Percent) of Correct Responses
By Examination Status

<table>
<thead>
<tr>
<th>Question #</th>
<th>Pretest M&amp;D</th>
<th>Other Fx</th>
<th>Posttest M&amp;D</th>
<th>Other Fx</th>
<th>Change M&amp;D</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FX%</td>
<td>Fx%</td>
<td>FX%</td>
<td>Fx%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>25/35 (71)</td>
<td>28/38 (74)</td>
<td>12/14 (86)</td>
<td>11/11 (100)</td>
<td>+15</td>
<td>+26</td>
</tr>
<tr>
<td>17.</td>
<td>34/35 (97)</td>
<td>34/37 (92)</td>
<td>13/15 (87)</td>
<td>8/11 (72)</td>
<td>-10</td>
<td>-20</td>
</tr>
<tr>
<td>18.</td>
<td>36/36 (100)</td>
<td>34/38 (89)</td>
<td>15/15 (100)</td>
<td>10/10 (100)</td>
<td>0</td>
<td>+11</td>
</tr>
<tr>
<td>19.</td>
<td>27/34 (79)</td>
<td>26/36 (72)</td>
<td>13/15 (87)</td>
<td>10/10 (100)</td>
<td>+8</td>
<td>+23</td>
</tr>
<tr>
<td>20.</td>
<td>26/36 (72)</td>
<td>20/38 (53)</td>
<td>14/14 (93)</td>
<td>10/11 (91)</td>
<td>+21</td>
<td>+38</td>
</tr>
<tr>
<td>22.</td>
<td>36/36 (100)</td>
<td>33/37 (89)</td>
<td>15/15 (100)</td>
<td>11/11 (100)</td>
<td>0</td>
<td>+11</td>
</tr>
<tr>
<td>23.</td>
<td>22/35 (63)</td>
<td>23/38 (61)</td>
<td>15/15 (100)*</td>
<td>11/11 (100)*</td>
<td>+37</td>
<td>+39</td>
</tr>
<tr>
<td>24.</td>
<td>34/36 (94)</td>
<td>29/38 (76)</td>
<td>14/15 (93)</td>
<td>11/11 (100)</td>
<td>-1</td>
<td>+24</td>
</tr>
<tr>
<td>25.</td>
<td>25/35 (71)</td>
<td>28/35 (80)</td>
<td>10/15 (67)</td>
<td>9/11 (82)</td>
<td>-4</td>
<td>+2</td>
</tr>
<tr>
<td>Mean</td>
<td>79</td>
<td>72</td>
<td>89</td>
<td>95</td>
<td>+10</td>
<td>+23</td>
</tr>
<tr>
<td>Max.</td>
<td>100</td>
<td>92</td>
<td>100</td>
<td>100</td>
<td>+39</td>
<td>+66</td>
</tr>
<tr>
<td>Min.</td>
<td>40</td>
<td>34</td>
<td>67</td>
<td>72</td>
<td>-10</td>
<td>-20</td>
</tr>
<tr>
<td>Range</td>
<td>60</td>
<td>58</td>
<td>33</td>
<td>28</td>
<td>49</td>
<td>86</td>
</tr>
</tbody>
</table>

X² significant at:
* p = .05
** p = .01
tests with larger sample size, the following findings stand out.

Most improvement occurred on the item relating to the use of the pap test (#11). This was followed by an increase of 13 percent in the use of sun-screen lotions (#12) and having a proctosigmoidoscopy (#7). Improvement of 12 percent was noted on regular use of the pap test (#10) which, together with an increase in recent use of this diagnostic tool as indicated (#11) may be important. An increase of 11 percent each was noted among those who had a recent medical checkup (#4) and among those who are engaged in regular self-examination of the breast (#6).

The downward trend on questions concerning dental visits (#8, #9) was noted with alarm as was an apparent increase in smoking (#13). No improvement occurred in membership of smoking cessation clinics.

**Overview and Discussion of Results**

In summation, the effect of the program on behavior change was limited while the effect on knowledge was pronounced.

As was expected, those who had regular physical and dental examinations knew more as did the older age group, a group more likely to get cancer.

Overall, the target group seems to have been well informed before the program was started while perhaps lacking knowledge in some specific subject areas. Well over 50 percent of the women indicated that they have regular medical checkups, slightly more dental than physical examinations. It was hoped that most improvement might occur in regard to regular self-examination of the breast.
Table 4. This table shows frequencies and percent of desirable behavior before and three months after the education program. While change is given in percent to facilitate visual comparison of data, the statistical evaluation was made using the actual numbers of those who exhibited the desirable behavior and those who did not, using the chi-square test.
<table>
<thead>
<tr>
<th>Question #</th>
<th>Pretest FX %</th>
<th>Posttest FX %</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 47/74</td>
<td>(64)</td>
<td>17/25 (68)</td>
<td>+8</td>
</tr>
<tr>
<td>4. 49/74</td>
<td>(66)</td>
<td>20/26 (77)</td>
<td>+11</td>
</tr>
<tr>
<td>5. 35/61</td>
<td>(57)</td>
<td>17/26 (65)</td>
<td>+8</td>
</tr>
<tr>
<td>6. 37/72</td>
<td>(51)</td>
<td>16/26 (62)</td>
<td>+11</td>
</tr>
<tr>
<td>7. 16/74</td>
<td>(22)</td>
<td>9/26 (35)</td>
<td>+13</td>
</tr>
<tr>
<td>8. 56/74</td>
<td>(76)</td>
<td>17/26 (65)</td>
<td>-11</td>
</tr>
<tr>
<td>9. 55/73</td>
<td>(75)</td>
<td>17/26 (65)</td>
<td>-10</td>
</tr>
<tr>
<td>10. 47/73</td>
<td>(64)</td>
<td>19/25 (76)</td>
<td>+12</td>
</tr>
<tr>
<td>11. 48/74</td>
<td>(65)</td>
<td>20/25 (80)</td>
<td>+15</td>
</tr>
<tr>
<td>12. 27/73</td>
<td>(37)</td>
<td>13/26 (50)</td>
<td>+13</td>
</tr>
<tr>
<td>13. 19/73</td>
<td>(26)</td>
<td>9/26 (35)</td>
<td>+9</td>
</tr>
<tr>
<td>14. 0/73</td>
<td>(0)</td>
<td>0/26 (0)</td>
<td>0</td>
</tr>
</tbody>
</table>

| Mean       | 55           | 62            | +7       |
| Max.       | 76           | 80            | +15      |
| Min.       | 22           | 35            | -11      |
| Range      | 54           | 45            | 26       |

*None of the changes in this table were statistically significant.*
This hope did not materialize.

Some of the negative findings seem worthy of discussion. While rather alarming at first, they could have occurred for a variety of reasons.

Evaluating behavior is difficult at best because one usually has to rely on what people say they do. Since random sampling of respondents was not possible in this study, and the number of respondents in the post-posttest was much smaller \((n = 26)\) than the number of people who participated in the pretest \((n = 64)\) and the posttest \((n = 104)\), the decrease in dental examinations might be due to a preponderance in the post-posttest of those who had earlier denied having regular dental examinations. Since the decrease was not statistically significant it could have happened by chance alone. This applies to the following finding as well.

In each category of data, total, by age or by examination status, the statement that cancer cannot be cured even if detected early was interpreted as false by fewer people after the program than before. Since the program was supposed to present facts in a non-threatening way and was believed to have been successful as indicated by numerous verbal and written comments of employees, the down-trend was incomprehensible.

Two possible explanations shall be considered here. First, the question was written in the form of a double-negative, a practice warned against by many. As such it was subject to misinterpretation. For this reason one question was added to the post-posttest, stating the question in a positive way: "Cancer can be cured if detected
early" with the same alternatives for answers. This was not done to change the results but to check on internal consistency. Computation of data showed that some people indeed misinterpreted the question. They answered incorrectly when the statement involved the double-negative, and correctly when the same statement was written in a positive manner. It would seem that the double-negative should have had the same effect in the pretest and, therefore, it may not be the cause of a lower score. One other question was stated in this manner as well (#20) and showed an increase in scores.

The second explanation for the phenomenon under discussion is even more speculative in nature. Before the program, people had definite feelings relating to the curability of cancer. The majority (93 percent) thought it curable if detected early. For some of the individuals, however, the lecture, by presenting additional information beyond what was known, and the discussion period during which personal questions were answered, may have changed what people said they believed (as recorded in the pretest) to what they really believed. In this manner the presentation may have brought them more in touch with their true feelings. If this assumption is correct, the next test of an individual might come when a cancer symptom appears which necessitates a decision between the possibility or impossibility of cure. Most likely a few of the 81 to 87 percent who in the posttest and post-posttest believed cure is possible, will drop out at this stage, since with each step the problem becomes more personal.
Chapter 5

SUMMARY AND CONCLUSIONS

This chapter presents a summary and discussion of program objectives together with recommendations for future programs of this kind and closing remarks.

The preceding project was developed in response to several needs which were formulated into objectives. Of these, some were articulated, others were not.

The ultimate objective for the program was a reduction in cancer mortality in the target population. Another, implied objective was to find an explanation for the scarcity of evaluated health education programs in business and industry. A third unstated objective concerned the gathering of recommendations for similar programs in the future.

Success of a program can be measured by the degree to which its objectives have been met. Only one of the above objectives readily lends itself to measurement.

Reduction in Cancer Mortality

The primary objective for the program as stated on page 16 obviously cannot be tested for some time. The small sample size would also make establishment of a mortality rate for this population impossible. However, it is possible to implement the program nation-wide and after a sufficient time interval, compare cancer
mortality rates in the employee group which participated in the program to national mortality rates from cancer. Certain conclusions regarding the degree to which this objective was met could then be drawn. These conclusions would have to take into consideration the effects of history and maturation as they occur in longitudinal studies of this kind (22).

Looking at the secondary objectives or action steps to be taken in an effort to achieve the primary objective, it was shown that an educational program as presented here was more effective in bringing about an increase in knowledge than in changing behavior. One might speculate that knowledge is perhaps more easily changed than behavior and, more importantly, knowledge is more easily measured (15,33,35,42). The measurement of knowledge is based, however, not on the ease with which it is accomplished but on the theory that a change in knowledge will lead to a change in behavior. Even among those who accept this theory there seems to be no consensus as to the time required between the input of knowledge and behavior change and for this reason it might be assumed that perhaps for this program the time period which elapsed between the program and the measurement of behavior change was too short. Another evaluation regarding behavior change might be carried out several months from now with consideration for the problems which arise with longitudinal studies.

A more direct association between health education and behavior change might be established through the teaching of special skills. Breast self-examination classes, for example, will more
likely lead to regular self-examinations at home than the mere mention or description of a technique.

The fact that for many people routine physical examinations in the absence of symptoms are a financial impossibility leads to speculation in this area. Had such examinations been made free of charge to these employees, utilization of these services might be a better indicator of the effectiveness of the program than a situation where one is expected to procure and pay for such services.

The program in this sense may have created a need without giving a solution. By raising the level of awareness regarding cancer and the possibilities for cure, a dilemma might have been created which froze people into inaction.

Infrequent Evaluations in the Past

Cognizant of the fact that a single program may not be a sufficient base upon which to make assumptions, several explanations for the scarcity of evaluated programs shall be offered in the hope they might contribute to information in this area and perhaps increase the chances that future programs will be evaluated.

As mentioned before, management tends to look at industrial programs from a cost/benefit angle. The motives for accepting a health education program may be humanitarian or a matter of public relations but the overriding principle which influences action is that cost should be reduced to an absolute minimum. Even a five-minute program is costly when multiplied by 104 (the number of people who attended this program). In business or industry, time is money and a Health Educator should not overlook this fact.
In addition, industrial settings are usually not thought of as places for "examinations" and a certain amount of resistance might be expected on the part of those to be tested. In programs of this kind people are very casual about arrivals and departures and resent anything which might interfere with the casual and relaxed atmosphere. Unless a way can be found to test more informally this problem is likely to persist.

The casual attitude is also found where participation in testing is concerned. Since participation is voluntary the number of participants can vary considerably between pretest and posttest, a fact which statisticians readily attack. But the casual attitude may also imply a casual attitude in answering questions which could influence the findings and make them less reliable.

Another reason for not evaluating a program may be the way in which questionnaire data are gathered. Baseline information in the pretest may receive more attention since it is something new. When the same questions are asked again only a short time later and even with a few words of explanation, impatience and annoyance could occur.

On a different level, perhaps the attitudes of the program planners in the past programs played an important part in deciding whether a program was evaluated or not. If a planner was more concerned with the program as an end in itself, resistance on the part of management could have been the excuse not to evaluate, if such was contemplated. If a planner was more concerned with the effect of a program he might have been less likely to give in to demands by
management.

It must also be up to the planner to decide whether he has the support of management in general and so feels secure enough to make requests relating to evaluation.

Evaluation in this project was a matter of compromise; first in the length of the questionnaire and second in the extent of evaluation. It was agreed that evaluation should be carried out in a maximum of two pilot programs after which the program would be brought into the other branches of the department store chain without evaluation. Such compromise should perhaps be more emphasized in programs where disagreement regarding evaluation occurs.

Recommendations for Future Programs

The most important recommendation to be made regarding health education programs concerns compromise even though compromise is often seen as a method of the weak and has very negative connotations. Health Educators need to consider that even the most promising and innovative program will be useless unless it is accepted for implementation. "If you start with nothing, demand 100 percent then compromise for 30 percent, you're 30 percent ahead."

(1) This dictum of community organization practice should be incorporated into the working philosophy of every Health Educator.

The planners of the preceding program would have preferred a more specific teaching program or a setting in which special skills are imparted. They settled for a general education program and compromised in matters of content, evaluation, and teaching materials. Without this there would have been no program.
Several other principles were applied which might be helpful in future programs. Some of these principles shall be listed here together with a rationale for their use.

Go to the top for permission. Final acceptance of any program has to come from top management; it is important to contact them first. They might be less likely to consent if other less important officials were contacted first, or if pressure is brought against them from people in less influential positions. The personnel director of a company is the person most frequently contacted.

It is permissible to enlist the aid of influential people in a community on the same occupational level or above that of the person contacted for consent. Even in this case pressure should not be used.

Have several alternative plans. Rather than trying to sell one program, different alternative programs may make acceptance easier in that they give officials a choice. This may be important because it could increase the chances for acceptance of at least one program which the planner feels is most likely to be successful.

Program proposals and outlines should be submitted in writing with the approximate time needed for each section. Samples of questionnaires, pamphlets, or promotional materials might be included to facilitate acceptance and illustrate what is proposed.

Know methods, materials, and subject matter. A well informed planner usually is two steps ahead of most other people. Knowing the subject matter gives assurance and authority to any discussion. Knowing methods and materials available does the same
in addition to providing alternatives and saving time in the planning stages.

A knowledgeable speaker is not dependent on detailed notes and so can give a presentation a more informal character.

**Know how to use equipment.** Frequent breakdown of projectors and the like can wipe out any positive impression made up to this stage. Mechanical failure, while human, has a tendency to be time-consuming, and only a limited amount of this will be tolerated. This applies to the planning stages as well as to the program itself. Nothing is more boring than having to sit while someone tries to repair an inoperative projector.

**Ask people for suggestions.** This extremely important point is one that is most often neglected. Industrial health education programs incorporate ideas of program planners and management personnel often without consideration for the members of the target group. There are certain difficulties involved in asking people what they want without some kind of preparation. One of these difficulties is consensus. Different people may have different priorities and different needs. It is not always feasible to base a program solely on what employees want. The approach used in the preceding program was to consult management in the planning stages and to elicit responses from employees after the program regarding their needs and interests.

Another approach might be to have employees participate as members on planning boards. In any case, employee input should
never be ignored.

Get people involved in the program. People can become involved in various ways. Management is perhaps more likely to participate in planning and promotion. In this program top management was involved in only the early planning stages while the management of the individual stores assumed responsibility for promotion, refreshments, and facilities.

It is most valuable to have an influential employee start the discussion period of the program to break the ice. Without such help the discussion might never get off the ground.

(Note: Do not have management distribute pretests to save time. People are human and are more likely to forget something in which they are not really interested.)

Be flexible and willing to listen. Providing an atmosphere in which people feel comfortable to make suggestions is a very important aspect of any program. Suggestions when made require action which, in turn, may require a willingness to take risks. The architect of any program should remain flexible while assuming responsibility for his actions.

In the project under discussion, attendance was extremely low for the first afternoon session and a suggestion was made to change the time for this session. The store manager who had set the original times for the program was on vacation and could not be consulted. The change was made without his consent and attendance rose from six to thirty. Several people expressed gratitude for the
Promotion for both sexes. The almost non-existent attendance of men led to speculations about this phenomenon. Some of the men were asked why they did not participate and while some claimed to be too busy, others admitted they saw such programs as being developed mainly for women who were assumed to be more interested in health matters than were men. This feeling was emphasized with the strategic placing of posters advertising the event. Such posters were found in places where women were likely to gather, not in places accessible to both sexes. Future programs might do well to explicitly invite men and avoid discriminatory positioning of posters.

Be honest. This means not promising more than can be delivered, and it also means that questions have to be answered honestly and without being evasive. The most difficult question put to a speaker in the preceding program was, "Does surgery speed up cancer so that you die faster with surgery than without it?" The question was answered taking into consideration the undeniable burden which surgery places on any individual, but also the assumption which is made with each primary cancer surgery, that it is not too late and complete cure is possible.

These recommendations are not expected to act as guidelines for all health education programs. They are the result of a particular program and arose from specific experiences encountered. It is hoped that they will give insight to future planners of health
education programs into some of the problems which can be expected and point out ways in which to solve such problems.

Closing Remarks

Health education has found its way into business and industry in decades past but it still remains to be seen exactly what type of programs are most likely to be successful. There is room for programs which emphasize the imparting of information and for those that teach skills or provide services.

It is possible that with the discovery of a causative agent cancer education will take a very different turn, but discovery of a single such agent seems unlikely. It is also possible that present preventive measures will be expanded in the absence of a single causative agent, and that present treatment methods will be improved but it seems safe to assume that this will not greatly influence the type of health information which has as its goal early diagnosis and treatment.

Even if content of health education programs is unlikely to be changed in years to come, the practice of one-shot programs should be revised. It has been shown that the effect of one program is difficult to measure and many people seem to need more than one push to adopt preventive behavior.

More encouraging statistical results of on-going programs may be an inspiration to health educators who until then have to take sustenance from comments like these:

"I believe programs such as this one should be given more often. I am very unhappy to say that this is the first time I have heard how to examine my breasts. I think it is most important to discuss symptoms and possible cures. Thank you for coming."
SELECTED BIBLIOGRAPHY


5. '73 Cancer Facts and Figures. A Publication of the American Cancer Society, Publ. No. 5008 LE.


Pamphlets Used in Education Program:


"Safeguards Against Cancer," Lists 7 safeguards.

"Cancer's Warning Signals," Lists 7 warning signals.

"Every day that You Live," Breast and uterine cancer.

"100,000 Doctors Have Quit Smoking Cigarettes," Lung Cancer.


"Sense in the Sun," Skin cancer.


"Get a Pap Smear," Uterine cancer.

"Cancer of the Colon and Rectum," Bowel cancer.
Cancer Education Program for Department Store Employees

Program Outline

1. Cancer—General Information
   What is it?
   Who will get it?
   How is it treated?
   Recent progress in research.

2. Protection Against Cancer—7 Safeguards
   Don't smoke.
   Avoid overexposure to the sun.
   Examine your breasts monthly.
   See your dentist regularly.
   Have a pap test once a year.
   Have a procto once a year.
   Have an annual checkup.

3. The Warning Signals of Cancer
   Unusual bleeding or discharge.
   A lump or thickening in breast or elsewhere.
   A sore that does not heal.
   Change in bowel or bladder habits.
   Persistent hoarseness or cough.
   Indigestion or difficulty in swallowing.
   Change in size or color of a wart or mole.
4. Summary

Most important--Prevention

Early Diagnosis and Treatment
SPOT ANNOUNCEMENTS

The American Cancer Society and Robinson's both care about employee's health. They want you to know how you can protect yourself against cancer. Learn the seven warning signals and other life-saving tips by attending a free program. Call your Personnel Department today.

Robinson's care about their employees and their health. So does the American Cancer Society. That is why you will have an opportunity to attend a free program that will outline how you can protect yourself against cancer. Call your Personnel Department today so you can have peace of mind tomorrow.

The American Cancer Society wants to wipe out cancer in your lifetime. And so does Robinson's. That is why you will be able to attend a free program that will acquaint you with facts on cancer--facts that can save your life. Call your Personnel Department today--let's try to wipe out cancer tomorrow.
Please do not sign your name.

To answer, put a check-mark ✓ in the places indicated or write in your answer.

1. What is your age?
   - Under 21 ___ 31-40 ___ 51-60 ___
   - 21-30 ___ 41-50 ___ 61 plus ___

2. What is your sex?
   - Male ___  Female ___

3. Do you have routine yearly checkups when nothing is wrong?
   - Yes ___  No ___

4. Did you have such a checkup during the last 12 months?
   - Yes ___  No ___

5. What is the approximate date of your last checkup?
   ______________________

6. (If female) Do you regularly examine your breasts?
   - Yes ___  No ___

7. Did you ever have a procto (visual examination of the lower bowel through a tube)?
   - Yes ___  No ___

8. Do you go to your dentist regularly?
   - Yes ___  No ___

9. Did you see your dentist during the last 12 months?
   - Yes ___  No ___

10. (If female) Do you have a pap test regularly?
    - Yes ___  No ___

11. Did you have a pap test during the last 12 months?
    - Yes ___  No ___
12. Do you use a sun-screen lotion regularly?
   Yes ___ No ___
13. Do you smoke?
   Yes ___ No ___
14. Are you presently enrolled in a smoking-cessation clinic?
   Yes ___ No ___
15. Have you ever had cancer of any kind?
   Yes ___ No ___
16. Cancer is disorderly, uncontrolled growth of cells.
   True ___ False ___ Don't know ___
17. Cancer cannot be cured even if detected early.
   True ___ False ___ Don't know ___
18. The best protection against cancer is an annual checkup.
   True ___ False ___ Don't know ___
19. The pap test can detect cancer of the womb.
   True ___ False ___ Don't know ___
20. Regular visits to the dentist are not important in cancer detection.
   True ___ False ___ Don't know ___
21. The procto (visual examination of the bowel through a tube) can save more lives from cancer than any other step in the yearly checkup.
   True ___ False ___ Don't know ___
22. All lumps in the breast are cancerous.
   True ___ False ___ Don't know ___
23. A wide-brimmed hat provides some protection against skin cancer.

   True    False    Don't know

24. Not smoking is one of the best ways to prevent lung cancer.

   True    False    Don't know

25. The seven warning signals for cancer are:
   (Check 7 items)

   Thickening or lump in breast or elsewhere

   A sore that does not heal

   Palpitations after exertion

   Change in bowel or bladder habits

   Indigestion or difficulties swallowing

   Dizziness when getting up

   Nagging cough or hoarseness

   Nausea after eating

   Obvious change in wart or mole

   Unusual bleeding or discharge