

CAN-DIAL

An Experiment in Health Education and Cancer Control

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THERE IS LITTLE DOUBT that cancer is a major health problem in our society. It is now the second leading cause of death in the United States (1). Available evidence indicates that incidence of, and mortality from cancer have been increasing and will continue to increase in the future.

At the same time, knowledge of cancer is also increasing step by step. New techniques in diagnosis and treatment are constantly being developed. For instance, diagnostic procedures which could help to reduce mortality from cancer include the Papanicolaou test for cervical cancer and the guaiac test and proctosigmoidoscopy for colon and rectal cancer. New knowledge of cancer's

etiology can be acted upon—tobacco intake can be limited, thereby preventing lung cancer, and cessation of the use of stilbestrol by pregnant women can prevent vaginal cancer in female offspring.

However, the question of why preventive medicine is not more universally practiced remains unanswered. A major need is to stimulate the public to make use of routine diagnostic screening at the asymptomatic stage or to seek medical advice as soon as symptoms are perceived (2,3). Acquiring new knowledge or development of new techniques is not enough. The public must be informed of preventive behaviors, new knowledge, and available services. It is assumed that a substantial proportion of a properly educated public will improve their health habits and thus bring about a decrease in cancer-related deaths.

Previous efforts to educate the public about cancer have tended to be sparse, unsystematic, and episodic (4). The American Cancer Society's effort to dissuade people from smoking has probably been the most continuous and sustained campaign of health education about cancer.

Clearly needed is a mechanism to disseminate information about cancer to the public in an economical and accessible manner that employs neither scare tactics nor over-optimism. The information should be accurate and sensible and include advice on preventive measures such as limiting tobacco intake, self-examination of breasts, and having a yearly Papanicolaou test as well as general information about various aspects of cancer. The infor-

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mation service should be easily available and free to all segments of the population as well as being sensitive and responsive to the public's questions and needs. The various types of cancer centers around the United States would seem to be logical sites where such public education systems could be initiated.

Roswell Park Memorial Institute in Buffalo, N.Y., has developed a dial access telephone information system to meet the public's needs. It was started on a small scale in September 1973 and expanded with National Cancer Institute funding in April 1974.

Dissemination of information via a public telephone system is not new; dial access systems are found throughout the world and range from Dial-a-Joke, Dial-a-Prayer, crisis counseling hotlines, poison control lines, Tel-Med, and professional consultation lines. Bartlett and co-workers (5) described a telephone information system used by patients of several hospitals in Madison, Wis. The M D. Anderson Hospital and Tumor Institute in Houston, Tex., has a dial-access service for physicians which provides taped messages pertaining to various cancer specialties (6). Roswell Park Memorial Institute has operated a telephone cancer consultation service for physicians. The medical society of Erie County, N.Y., sponsors Tel-Med, a public dial access system covering a

vast range of health-related topics. However, to our knowledge, Can-Dial is the first and only dial access system which is dispensing only information concerning cancer to the public.

Promotion

A voluntary service such as Can-Dial can be of limited use unless the public is aware of its existence. Therefore, some form of promotional activity is necessary. Efforts to promote Can-Dial have centered around four major approaches. Brochures (see illustration), listing the tapes in the Can-Dial library, have been placed in display racks in many public places, distributed in church bulletins, placed in shopping bags by supermarket cashiers, and sent out with employees' checks. The "White Directory," a classified directory similar to the telephone book's yellow pages, carries an advertisement about Can-Dial as a public service. Public service spot announcements on radio and television and public service ads in local newspapers and newsletters have publicized the service. Lacking funds to promote the system in the various media—other than money to print brochures—we were forced to rely on public service time and advertising space. We found the staff of most of the media in Erie County to be most cooperative.

Can-Dial Library of Tapes in English and Spanish

1. What is cancer? (¿Qué es el cáncer?)
2. Cancer's warning signals (Señales de alarma del cáncer)
3. Cancer of the breast—and how to detect it (Cáncer del seno—como descubrirlo)
4. Lung cancer (¿Qué es el cáncer del pulmón?)
5. If you want to give up cigarettes (Si quieres dejar de fumar)
6. Cancer of the larynx (Cáncer de la laringe)
7. Cancer of the uterus (Cáncer del útero)
8. Cancer of the skin (Cáncer de la piel)
9. Cancer of the colon and rectum (Cáncer del intestino y el recto)
10. Leukemia (Leucemia)
11. Cancer of the mouth (Cáncer de la boca)
12. Service and rehabilitation information for cancer patients and their families (Información sobre servicios y rehabilitación para paciente de cáncer y sus familiares)
13. Chemotherapy: drugs vs. cancer (Quimioterapia: La droga versus el cáncer)
14. Cancer of the bladder (Cáncer de la vejiga)
15. Cancer of the prostate (Cáncer de la próstata)
16. Cancer of the bone (Cáncer de los huesos)
17. Cancer of the stomach (Cáncer del estómago)
18. Cancer of the brain (Cáncer del cerebro)
19. Hodgkin's disease (El mal de Hodgkin)
20. Cigarette smoking and the pregnant woman (El fumar y la mujer embarazada)
21. Cigarette smoking and dental problems (El fumar y los problemas dentales)
22. What is the Pap test—how can it help you? (¿Qué es la prueba Pap y como la ayudará a usted?)
23. What is the Roswell Park Memorial Institute? (¿Qué es el Roswell Park Memorial Institute?)
24. Radiation therapy in cancer treatment (La radioterapia en el tratamiento del cáncer)
25. Words from a hospital chaplain (Palabras del capellán del hospital)
26. The effect of cigarette smoking on the non-smoker (El efecto del fumar en los que no lo hacen)
27. Cancer of the liver (Cáncer del hígado)
28. Cancer of the pancreas (Cáncer del páncreas)
29. Questions and answers about smoking and quitting
30. Cancer facts for the teenager and the young adult
31. Breast cancer facts
32. Questions and answers about smoking and health
33. Cancer of the thyroid gland
34. Speech therapy after cancer treatment
35. Cancer facts for the senior citizen
36. The economic impact of cancer on the family

The Can-Dial System

The Can-Dial system's four telephone lines are manned by an operator 16 hours a day, 7 days a week. Each line contains an audio-coupler, semi-automatic playback, and an automatic recording device. Thirty-six pre-recorded tape cassettes on a variety of cancer-related topics recorded in English and 28 tapes in Spanish for the Spanish-speaking residents of Erie County are available (see list in box). A complete library of tapes is maintained for each telephone line.

Anyone desiring information can call a toll-free number and ask the answering operator for a specific tape by item number, title, or area of interest. The operator selects the proper cassette, places it in the playback mechanism, and starts the apparatus. The operator is then free to serve another caller until the taped message is completed. The cassette is then removed from the playback device and returned to the library file.

An automatic recording device, activated by each incoming call, records information about the caller which is used in evaluating the Can-Dial system. The recorder is deactivated while the requested tape is played and automatically reactivated, upon completion of the tape, to record the user's comments.

Can-Dial callers are asked by the operator to give, voluntarily, certain descriptive information about themselves—name, address, telephone number, age, occupation, sex, and source of information about Can-Dial. Information about the type of call, time of day, date, and topics requested is also recorded. The information is collected for the purpose of conducting subsequent telephone interviews.

During the first several months of Can-Dial's experience, this information was recorded automatically and transcribed later. The mechanics of gathering the data changed over time. Having the information transcribed by a typist for examination later proved burdensome. It was found feasible to have the telephone operators code the relevant information for computer processing at the time of the call. This procedure also decreased the loss of information occurring when a tape broke or was inaudible.

Text of Tapes

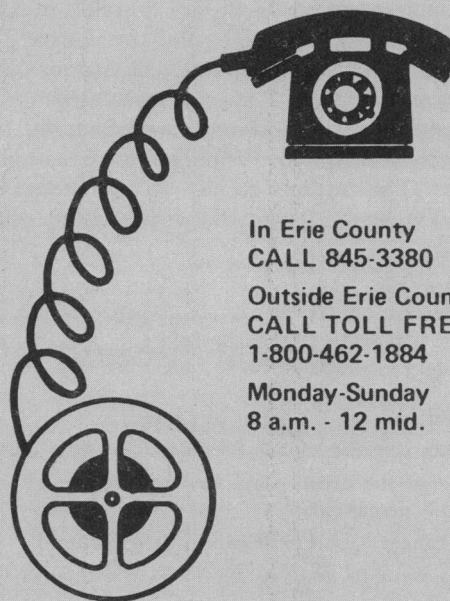
Tapes are prerecorded by physicians who are specialists in the particular area of concern. Latest research findings, clinical procedures, preventive techniques, symptoms, and so forth are described on the tapes if appropriate. Information is given in nontechnical, everyday language as much as possible.

Scripts are reviewed periodically, and new topics are added according to suggestions from callers. The original library of 12 topics has grown to 36. An advisory committee of oncologists, public health nurses, health educators, and representatives of health agencies, the instructional media, and the public convenes at least semi-annually to discuss, evaluate, and update Can-Dial.

TOLL FREE
CANCER INFORMATION

CAN-DIAL

cancer information
through your telephone



In Erie County
CALL 845-3380

Outside Erie County
CALL TOLL FREE
1-800-462-1884

Monday-Sunday
8 a.m. - 12 mid.

Roswell Park has prepared this library of taped messages concerning cancer. Now you can listen to answers to some of the commonly asked questions on cancer in the privacy of your home or office. This toll-free service is available throughout New York State.

A Public Service Of

ROSWELL PARK MEMORIAL INSTITUTE
NEW YORK STATE DEPARTMENT OF HEALTH
666 ELM STREET, BUFFALO, NEW YORK 14203

and

AMERICAN CANCER SOCIETY
NEW YORK STATE DIVISION
6725 LYONS ST., P.O. BOX 7, SYRACUSE, N.Y. 13057

(over)

The most requested topics in descending order of popularity have been, "If you want to give up cigarettes," "Cancer of the breast—how to detect it," "The effect of cigarette smoking on the nonsmoker," "Cancer's warning signals," and "What is cancer." (The texts of the tapes may be obtained from the authors.) The popularity of tapes pertaining to smoking clearly indicates public concern over cigarette smoking and its consequences.

Evaluation

The primary purpose of the Can-Dial system is to make information about cancer available to the general public, but a second major objective is systematic evaluation to ascertain its relative effectiveness and to improve it, if necessary. We are also concerned with obtaining information about the populations we are serving and, concomitantly, those we are missing. Finally, we also wish to ascertain Can-Dial's impact on the public in inducing behavior change and promoting preventive behavior. To accomplish these tasks, evaluation has taken two avenues. The first involves constant monitoring of incoming calls—asking callers to volunteer descriptive information about themselves. Patterns of response are also monitored and subjected to analysis. This information is collected by the operator taking the call, coded immediately, and keypunched the next day. It is examined briefly every day before being keypunched. Periodically, more intensive examinations are conducted. Although most callers agree to co-operate, approximately 20 to 25 percent of adult callers refuse to give information about themselves. This stage of the evaluation provides descriptive data about users and use of the system.

A second type of evaluation entails subsequent interviewing of a sample of callers and comparing them with a random sample of nonusers in the Erie County area. The interview data will enable us to compare the characteristics of callers with noncallers along a number of parameters, such as previous illnesses and hospital experiences, general health awareness, cancer in the family or in friends, use of various media, and other factors which may discriminate between users and nonusers. We are also concerned with Can-Dial's effects in instilling improved health habits in callers. Current plans call for us to interview approximately 1,000 callers and 2,000 noncallers.

Although our evaluations are not complete, a number of preliminary assessments are in order. These are reported in more detail in other papers (7,8). General public response to the system has been excellent. During the first year of operation, more than 30,000 calls were received, and after a little more than 23 months, more than 68,700 calls had been received. Furthermore, almost twice as many females as males have used the system. A slight tendency also exists for urban residents to respond to it more frequently than rural residents. Finally, there have been few differences in response according to social status, which is ascertained from census tract characteristics of each address.

Comments of callers have been, for the most part, favorable. Occasionally a complaint will be registered that a particular tape was too technical, or that not enough information was given, but such comments are rare. Callers' suggestions about additional topics have led to an expanded tape library. Geographic areas from which few calls are received and topics about which information is seldom requested are interpreted as a sign that additional promotional activities are needed.

Costs

Costs for the first year of operation (exclusive of evaluation costs) are as follows:

Direct and indirect costs:	
Salaries and fringe benefits	\$28,803
Indirect costs	11,838
Telephone charges	500
Office supplies	100
Total	\$41,241

Equipment costs (prorated over 2 years):	
4 consoles	\$ 4,300
Recorders	300
Production of tapes	1,460
Printing	4,900
Mailing	2,000
Total	\$12,960

If the equipment costs are prorated over 2 years, the sum of \$6,480, added to the indirect and direct costs, results in a total of \$47,721 for the first year of operation. This comes to a cost of approximately \$1.58 per call, which could be reduced if volunteers were available to man the system.

These costs can, of course, vary widely, depending upon factors such as the number of lines, employees' salaries, telephone service costs, hours of operation, and the extent of advertising efforts.

Conclusion

Although the system has not been in operation long enough to reach definite conclusions, if one judges by public response, Can-Dial seems to be fulfilling a public need. The number of calls has been great, at times taxing the capabilities of the system. Users' comments have been favorable. Interest among staff members of various health services has also been great. We have received requests for information about the project from persons and organizations in Brazil, Germany, Taiwan, Canada, Puerto Rico, France, and Switzerland. Several major universities and medical research centers in the United States have also expressed interest.

At this time it is not possible to arrive at definite conclusions concerning the impact of Can-Dial on improving health behavior. Our initial investigations have shown that of persons in the sample contacted for interviews, approximately one-third attributed some action

to be the result of information obtained from Can-Dial. Actions included quitting or cutting down on smoking, visiting or making an appointment with a physician, attending a smoking clinic, or other activities such as seeking more information about cancer. The reasons most often cited for calling Can-Dial were to obtain more knowledge, a desire to quit smoking, curiosity, cancer in the family, a medical problem, and concern that they might be experiencing cancer symptoms. Together, these reasons offer some hope that a program such as Can-Dial may have a desirable effect on health behavior while fulfilling a community need for accurate and accessible information about cancer.

Cameron (2) has speculated that approximately 111,000 of an estimated 409,000 cancer deaths are preventable with techniques currently available to the medical profession. However, for this possibility to become a reality, individual persons must take a certain amount of initiative, such as limiting their tobacco intake and obtaining an annual physical examination that includes appropriate cancer screening procedures. Taking such actions seems in turn contingent upon overcoming the ignorance, fear, or shame which are so often a part of the public's view of cancer (9,10). A highly feasible way of achieving such aims may be through public education programs such as Can-Dial.

In addition, it is hoped that improved public education about cancer can help to remove the persistent skepticism of some medical personnel as to the worth of preventive medicine. (One invariably encounters the passionate believers and the passionate skeptics.) It now seems possible that morbidity from cancer could be reduced if a broad sector of the public were willing to

adopt certain measures, such as modifying certain eating, drinking, and smoking habits. The benefits would probably far outweigh the inconveniences and justify the self-discipline and temporary discomfort required. Programs such as Can-Dial demonstrate promise in making the public aware of how to decrease their chances of contracting cancer.

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SYNOPSIS

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A dial-access public information system providing information about cancer to the populace has been developed by Roswell Park Memorial Institute. The system is comprised of a tape library consisting of 36 pre-recorded tapes in English on a variety of cancer-related topics and Spanish translations of 28 of the tapes. Interested persons can select

and listen to topics of their choice over the telephone.

Telephones are manned by operators 16 hours a day, 7 days a week. Persons who call are asked to volunteer certain descriptive information such as name, address, telephone number, sex, age, occupation, and source of information about Can-Dial. These data are used in evaluating the program.

Two types of evaluation are being conducted. The first entails a constant monitoring of the system based upon information collected by operators concerning each call. The second type consists of interviews with a sample of callers and a sample of

noncallers for the purpose of comparing the characteristics of both groups and ascertaining the impact of Can-Dial on the behavior of its users.

Preliminary assessments indicate that Can-Dial is being used by all socioeconomic status groups, by more urban than rural residents, and by the younger rather than older age groups. In its first 23 months of operation, the system handled more than 68,700 calls, at an average cost of \$1.58 per call. A tentative conclusion is that Can-Dial is fulfilling a public need and may have a favorable impact in improving health behavior.