Factors Influencing the Return Rate in a Direct Mail Campaign to Inform Minority Women About Prevention of Cervical Cancer

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Synopsis

The Forsyth County Cervical Cancer Prevention Project was a 5-year community-based health education program funded by the National Cancer Institute. The program was developed to reduce cervical cancer mortality among black women in Forsyth County, and it was targeted to those ages 18 and older. The program tried to educate the target population through a combination of mass media and direct education. This paper reports on an experiment conducted to investigate sources of influence on the effectiveness of direct mail, a technique used to augment mass media health education.

Direct mail has shown promise as a method for reaching target populations that are difficult to reach with other mass media approaches. Using commercially prepared mailing lists sorted by zip code and other characteristics of the resident, health-related materials can be targeted to persons at their homes. A randomized experiment involving 1,000 households was carried out to estimate the influence of type of postage and address (name versus "resident or occupant") on the response rate to direct mail. Results indicated that there was no significant advantage from use of first class over bulk rate postage, but the return was significantly greater when the envelope bore a name rather than "resident or occupant."

THE FORSYTH COUNTY Cervical Cancer Prevention Project was a 5-year, community-based health education program funded by the National Cancer Institute (NCI). The program was developed to reduce cervical cancer mortality among black women in the county and was targeted to those ages 18 and older.

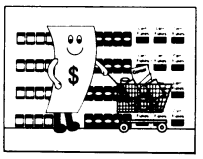
The program used a combination of mass media and direct education to instruct the target population. Although the mass media component of the program included an extensive array of printed material and public service announcements on television and radio, there was uncertainty about the extent to which the target population received and attended to the messages of the mass media program.

Direct mail was selected as a potentially effective means of reaching targeted populations with printed information. This paper reports the results of an investigation of an important methodologic issue associated with direct mail: the effectiveness of bulk rate mailing versus first class, and using a name versus "resident or occupant" in communicating with a low-income, minority population.

Background

The success of community-based health education programs rests on their ability to reach the intended target population with effective educational messages. To accomplish this central goal, a variety of methods such as electronic mass media (public service announcements); printed media (newspapers); distribution of leaflets, pamphlets, and booklets; information provided at points of sale; and direct contact have been used extensively (*1–4*). The diversity of methods used by community-based health education projects has developed because the target populations are heterogenous, and opportunities for disseminating program messages depend on established channels of communication.

The most readily identifiable established channels for communicating with target populations are local media such as television, radio, and newspapers. Although these channels offer opportunities for program planners to develop communication with target populations, they cannot guarantee that the



BE A **WINNER** THIS SUMMER!
YOU COULD WIN A
GIFT CERTIFICATE
FOR GROCERIES!!

THAT'S RIGHT. HERE'S AN **EASY** WAY TO WIN GROCERIES FROM FOOD LION. JUST FOLLOW THE **SIMPLE STEPS** BELOW, FILL OUT THE PINK ENTRY POST CARD AND SEND IT TO US. IF YOUR NAME IS PICKED, **YOU WIN!** NO PURCHASE IS NECESSARY TO ENTER.

1. TO ENTER, CLEARLY PRINT YOUR NAME, ADDRESS, AND ZIP CODE ON THE PINK ENTRY POST CARD. CLEARLY PRINT THE CORRECT ANSWERS TO THE THREE SIMPLE QUESTIONS ABOUT CERVICAL CANCER AND THE PAP SMEAR. EVERYTHING YOU WILL NEED TO ANSWER THE QUESTIONS CAN BE FOUND ON THE BACK OF THIS LETTER.
2. DROP THE PINK POST CARD WITH YOUR ANSWERS IN A MAIL BOX (WE PAY THE POSTAGE) AND YOU COULD BE A WINNER! ALL ENTRIES MUST BE POSTMARKED NO LATER THAN **JULY 31,1991**
3. THE DRAWING WILL BE HELD ON AUGUST 5, 1991. YOU DO NOT NEED TO BE PRESENT TO WIN. THE WINNER WILL BE NOTIFIED BY MAIL IMMEDIATELY, AND THE GIFT CERTIFICATE WILL BE DELIVERED TO THE WINNER'S HOME.

RESTRICTIONS

* YOU MUST BE AT LEAST 18 YEARS OF AGE TO PARTICIPATE. * EMPLOYEES AND THEIR IMMEDIATE FAMILIES OF THE CERVICAL CANCER PREVENTION PROJECT (CCPP) ARE INELIGIBLE. * THE CCPP IS NOT RESPONSIBLE FOR LOST, LATE OR MISDIRECTED, OR DAMAGED MAIL. ILLEGIBLE ENTRIES ARE VOID. MECHANICALLY REPRODUCED ENTRIES WILL NOT BE ACCEPTED. ALL ENTRIES BECOME THE PROPERTY OF THE CCPP. * THE ODDS OF WINNING WILL BE DETERMINED BY THE NUMBER OF ELIGIBLE ENTRIES RECEIVED. * IF THE WINNER CANNOT BE LOCATED WITHIN 15 DAYS AFTER NOTIFICATION, THE PRIZE WILL BE FORFEITED AND AWARDED TO AN ALTERNATE WINNER. * FOR MORE INFORMATION CALL THE CERVICAL CANCER PREVENTION PROJECT AT 748-6134.

A FEW IMPORTANT FACTS ABOUT CERVICAL CANCER AND THE PAP SMEAR

Did you know that cervical cancer is cancer that develops at the mouth of the womb?

Did you know that cervical cancer often has no symptoms?

Did you know that the Pap smear is a test to find cervical cancer early?

Did you know that some women need Pap smears more often than others?

Did you know that cervical cancer is the sixth leading cause of cancer deaths in women?

Did you know that most of these deaths could have been prevented? If found early, cervical cancer can be cured.

Doctors can find cervical cancer early enough to treat it successfully if you have a Pap smear and pelvic exam on a regular basis. Sexually active women and all women over 18 years old need to have regular Pap smears. Have a Pap smear as often as your doctor recommends-even if you feel great, or immediately, if you suspect something may be wrong.

Early Detection Works

FOR MORE INFORMATION, CALL THE CERVICAL CANCER PREVENTION PROJECT IN WINSTON-SALEM AT 748-6134

intended target population will receive program messages. Furthermore, even if the target population receives the messages, the outcome may not be as expected. The target population may not attend to the messages or take action for many reasons—perhaps because the program's messages become lost in the overwhelming volume and variety of information on television, radio, and newspapers. Or, perhaps because the target population does not regard the mass media as credible sources for information about health concerns.

Communicating with target populations through direct mail is an attractive alternative to exclusive dependence on broadcast and newspaper mass media. Sending persons information by direct mail provides an opportunity to contact them in their homes. The advantages of direct mail include the potential for reaching large target populations efficiently, the low cost compared with many other modes of communication, and perhaps most importantly, this medium's flexibility (*5*).

With direct mail, creatively developed educational materials can attract the receiver's attention in a setting where there are fewer competing messages than in television, radio, or newspapers. For populations with limited access to mass media, direct mail may be an important means of outreach. For example, those with limited transportation may not encounter billboards, posters, and other similar mass media, but they are more likely to receive regular mail delivery. In addition, unlike television and radio messages, educational materials sent by direct mail can be kept for future reference (*4*). Finally, direct mail offers an opportunity to develop two-way communication with the target population because the mail can also be used to encourage the recipient to respond to the program's information.

Direct mail has been used with varying success by community-based health education programs. The Minnesota Heart Health Program used a type of direct mail as a strategy to stimulate action by community residents at risk for hypertension (*5*). In that study, 28.2 percent of the community residents who received a single direct mail letter recalled receiving the message encouraging them to focus attention on screening for hypertension by discussing their blood pressure with a physician. Of the 28.2 percent, 12 percent reported taking action and having their blood pressure checked.

Gillespie and coworkers (*4*) reported using direct mail to improve dietary practices. Of 621 eligible families, 24.5 percent were recruited for the direct mail nutrition education program. Results suggested that those completing the program increased productive family interactions about nutrition. It is important to note that the direct mail campaigns reviewed in

this report did not require a response from the recipient of the message.

Commercial marketers have been the most prolific users of direct mail, however (*5,6*). For them, response rates vary widely depending on the type of product or service promoted, the socioeconomic strata of those on the mailing lists, and the complexity of the advertisement. Response rates range from 2–3 percent for uncomplicated direct mail advertising of consumer products to 20 percent for mailings that offer free products as inducements for future orders (*7*).

Direct mail can be implemented efficiently by using commercially prepared lists of recipients' mailing addresses (*7*). Such lists are prepared from utility company records, telephone directories, voting records, and other sources. They can be obtained organized by zip code and individual carrier routes and are available for most urban and many rural areas of the United States.

By coordinating maps identifying the approximate locations of target populations, zip codes, and carrier routes, it is possible to compile mailing lists that will identify individual names and addresses. The value of mailing lists may be limited by how up-to-date they are and by the socioeconomic status of the target population. Mailing lists are usually least accurate for those with low incomes because they move frequently, and they often do not have telephones. However, such lists may still be useful, since those with lower incomes tend to remain within areas of the community where housing is inexpensive.

Another approach that can be used with transient populations is to substitute a generic "resident or occupant" for a specific name. The principal drawback with sending mail to "resident" as opposed to a specific name are losses from depersonalizing communication. The gain from addressing mail to "resident" comes from inviting participation from new respondents. Direct mail that is focused on areas with concentrations of low-income housing, and consists of materials developed to appeal to the target population (*8*), has been compared favorably with telephone or personal interviews of low-income populations (*9–12*).

Method

Process evaluation data collected during the Forsyth County Cervical Cancer Prevention Project suggested that certain segments of the target population may not have been covered adequately (*13*). To address uneven distribution of program messages, an experiment with direct mail was designed. To investigate responses from direct mail using name and address versus "resident or occupant" for the Forsyth County Cervical Cancer Prevention Project, a study of factors influencing the return rate was developed. The variables selected for studying return rate included postage type (first class versus bulk rate) and name versus "resident or occupant" on the address.

Postage type was of interest because of potential cost savings. If bulk rate and first class produced the same return rate, then funds could be saved by using bulk rate. A second reason for investigating postage type was to estimate the proportion of occupied addresses on the mailing lists occupied by the person named on the list, since first class mail will be returned to the sender if undeliverable. Name versus "resident" on the address was included to detect the target population's sensitivity to de-personalizing the communication. To enhance returns, a chance to win a drawing for a $50 gift certificate for groceries was included as an incentive.

A detailed map of the target region was used to select two segments for study. Two discontiguous zip codes known to have comparable proportions of residences occupied by minority families with incomes less than $20,000 were selected. Previous experience had shown that the segments selected included comparable proportions of the low-income population of the county (*14*). By coin toss, one segment was selected to have a mailing list ordered that identified each recipient as "resident." A mailing list was ordered for the remaining segment that included the names of the intended recipients. Lists of 6,778 resident-occupants and 7,007 names were obtained. Two systematic random samples of 250 addresses were selected from each list and, by coin toss, one group was assigned to be sent by first class postage. The remaining sample was sent out bulk rate. Thus, the final sample consisted of four groups representing all possible combinations of postage and address (bulk rate-first class and name-resident).

Each of the four groups of 250 addresses selected was sent a letter and a postage-paid return card. The materials were sent in plain No. 10 envelopes and introduced the drawing for the gift certificate as the incentive and included directions about the contest. To enter the drawing, the respondent was asked to answer three questions related to the educational material included in the envelope. The questions were (*a*) cervical cancer is detected by the _____ smear; (*b*) if found early, cervical cancer can be _____; and, (*c*) all women over _____ years of age need regular Pap smears. Answers to the questions, "Pap," "cured," and "18," were

Response rates by type of postage and address

Postage	Responses to "resident"		Responses to "name"		Total	
	Percent	Number	Percent	Number	Percent	Number
Bulk rate	10.4	26 of 250	21.6	54 of 250	16.0	80 of 500
First class	15.2	38 of 250	20.0	50 of 250	17.6	88 of 500
Total	12.8	64 of 500	20.8	104 of 500	16.8	168 of 1,000

emphasized in the educational information sent to the target group (see figures). The reading level of the information, as estimated by Flesch-Kincaid, averaged 7.3 (*15,16*). Answers were to be written on the postage-paid return card along with name and address of the respondent. The returned postcard served as the entry for the drawing for the gift certificate.

Results

A total of 168 responses were obtained from the 1,000 envelopes mailed. Forty envelopes were returned unopened. Of the 40 envelopes returned (all with first class postage), 30 were from the name list and 10 were mailed to resident or occupant. The return rate was 16.8 percent. The table shows the distribution of the returns obtained from the direct mailing. There was no difference between the rates of return based on the type of postage, bulk versus first class ($\chi^2 = 2.17$, degrees of freedom (df)= 1, $P = .14$). However, the return for envelopes addressed with a name was significantly higher ($\chi^2 = 10.9$, $df = 1$, $P < .001$). Multivariate logistic regression analysis of the odds of responding by the type of postage and name versus resident or occupant address revealed no significant interaction between type of address and type of postage ($P = .129$). The return rate was higher for envelopes with names regardless of type of postage, although the difference between "name" and "resident" was slightly smaller for envelopes with first class postage.

The cost of carrying out the mailing for the 1,000 addresses used for this study is itemized as follows:

Category	Cost
Personnel (supervision and clerical assistance)	$80
Mailing list (addresses printed on peel-off labels)	437
Printing (postcards, envelopes, and information-letter)	350
Postage (first class = 146.00; bulk = 101.00)	247
Incentive (gift certificate)	50
Total	$1,164

The cost per potential respondent was $1.64; the cost per response was $6.93. To provide a basis for comparing the cost of carrying out an intervention with direct mail, the cost of reaching 168 people with a telephone intervention lasting 10 minutes would be at least $504, assuming an average of 5 completed interviews per hour at $15 per hour for all costs, or $3 per respondent. The cost of $1.64 per contact in this study includes research costs, and is somewhat higher than would be required for subsequent direct mailings. Per unit costs decrease as volume increases for printing and personnel, for example, and postage for subsequent mailings would use bulk rate, which is considerably less expensive than first class.

Discussion

The literature on health education has shown that program costs vary directly with the amount of effort expended in contacting the individual persons who are the target audiences (*17*). Costs per unit decreases as the focus of contact changes from individual to group to population. The theoretical effectiveness of health education also decreases as attention shifts from the individual to groups. These principles are clearly evident in the community-based health education programs conducted in the area of cardiovascular disease prevention in recent decades. The most successful of these programs have sought to maximize their chances for effectiveness by including educational content for the individual as well as for the group (*1–3*). The group programs focus intense effort on mass media. For the person, a common approach has been to identify those at highest risk and provide as much individualized attention as possible to this (hopefully) smaller group. Various techniques have been used to control costs while identifying and providing services to those at high risk, including defining risk status to produce small group sizes and using volunteers.

Direct mail has been used in community-based health education programs most often as a means for identifying and recruiting high-risk persons (*18*). The use of direct mail represents a compromise between often prohibitively expensive personal contact with the target population and less expensive, but less effective, mass media campaigns. Our data suggest that between 10–22 percent of low-income residents attended to carefully designed educational messages

disseminated by direct mail. Previous studies reporting higher response rates did not require the recipient to respond to the message. The results of this study suggest that including the name of the intended recipient increases the response rate, but that there is no difference in response from bulk rate or first class postage.

Correct answers were included on nearly all cards returned. Within 1 week of the mailing, however, the project office received several telephone calls from women asking if they could use help from friends or family members in answering the questions. These women reported not being able to see or read well enough to complete the card, but they wanted to participate nevertheless. The reading level for a large proportion of the target population is fifth grade or less, so the contest materials would have been difficult for them to understand. The level of difficulty could have reduced the response rate.

Overall, the response rate obtained in this study is encouraging in that it suggests that cards received at the project office included those from women who were willing to overcome sizable barriers to be able to respond to the direct mail campaign. Overcoming barriers raises the issue of the role of incentives in motivating response to direct mail campaigns. A $50 gift certificate for groceries was used as an incentive in this study.

This incentive was selected specifically to appeal to the low-income, minority target population. The qualitative information about women with poor eyesight or reading ability telephoning the project office to find out if there were rules against using help from others to correctly complete the card suggests that the mailing and incentive were sufficiently important for the persons to interrupt their daily activities and telephone the project office and, presumably, enlist help in completing the postcard.

It was noted earlier that the target neighborhoods for this study were predominantly low-income, minority households. Our previous work with this population had suggested that family and financial concerns were prominent (*19*). These data directed us toward selecting the grocery gift certificate because groceries are costly, basic necessities for families.

The data on the cost of carrying out the campaign presented in this study indicate that direct mail is an attractive, if imperfect, method for reaching target populations for community-based programs. The cost of carrying out direct mail compares favorably with mass media and individual-based interventions. Further research is needed to explore behavioral outcomes associated with direct mail, however.

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