

# Community Level Cancer Control in a Texas Barrio: Part I--Theoretical Basis, Implementation, and Process Evaluation

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A theory-based program that used peer modeling and a network of peer communicators to promote breast and cervical cancer screening was designed and implemented in a barrio of San Antonio with a population of approximately 25,000 adult women. The implementation process was evaluated and documented through field notes, archival documents, content analyses, interviews, surveys, etc. Over a 21-month period, a total of 156 news stories and a network for distribution of more than 80,000 print pieces carried messages about positive role models who were receiving Pap smears and mammograms. A group of 85 volunteers were recruited to promote screening; these volunteers reached 2000-3000 women each month with personal contacts in which cancer screening was encouraged. A small group of volunteers offered particularly intensive assistance to their peers, e.g., helping them to make and keep appointments for screening examinations. The theoretical communication model for the program, which maximizes audience and community participation as sources and channels for messages, was well suited for the cross-cultural application presented here. [Monogr Natl Cancer Inst 18:117-122, 1995]

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Hispanic women tend to lack sufficient cancer screening (1-4). For example, Harlan et al. (5) found that Hispanic women were more likely to say that Pap smears were necessary but were the least likely to receive them; those who spoke only Spanish or mostly Spanish were the least likely to have had a Pap smear within the last 3 years. Hispanics are more inclined to have misconceptions about cancer and are less aware of the warning signs of cancer than the general population (6-8). The lowest level of use of only medical care in this country is by Hispanics (1), mostly because of conditions of poverty and employment in lower-skilled jobs that do not provide health insurance. Complicated registration procedures and difficult-to-understand educational materials are additional barriers when accessing an unfamiliar medical system (8,9). Low-income Mexican-Americans in Texas have a particular pattern of cancer risk. Rates of most cancers are lower than those among Anglo-Americans in Texas, at least partly because of low rates of tobacco and alcohol use, especially among women. However, even with lower rates of cervical cancer than their Anglo counterparts, Mexican-American women in Texas do have higher mortality, apparently because female reproductive cancers are frequently detected too late (10). Dietary

behaviors also are problematic, with inadequate vitamin intake and lower levels of fat avoidance by Mexican-Americans than those found among Anglo counterparts or high-income counterparts (11).

According to Ramirez et al. (12), one effective way of reaching Mexican-Americans is through media-based public health campaigns. However, such programs are effective only when designed and implemented in a culturally meaningful and sensitive manner, based on the heterogeneity in levels of acculturation within the Mexican-American community. One theory-based approach to behavior change has been demonstrated to be effective in other cross-cultural applications. This diffusion acceleration approach (13) combines two communication techniques: 1) the use of early adopters of the desired behaviors as mass media role models in documentary and journalistic formats, and 2) organization and mobilization of natural social networks to prompt and reinforce imitation of the role models. The best-known example of the effectiveness of these techniques is provided by the North Karelia Project in Finland (14-17). Based on the North Karelia Project, the *Programma A Su Salud* was developed (1985-1990) to encourage smoking prevention and cessation among Hispanic-Americans (18,19). In a quasiexperimental study that evaluated the campaign, rates of smoking cessation were significantly higher in Eagle Pass, Tex., the treatment city, than in a matched comparison city (20).

There are other ongoing projects seeking to reduce health risk behaviors, such as *Companerces en la Salud* and *Por La Vida*, cancer prevention programs directed to Hispanic-Latino and Latino women, respectively (21). Other such programs are described in articles in this monograph. This article presents program methods and implementation evaluation results from a study demonstrating such a program for breast and cervical cancer screening and nutrition education in an urban, Mexican-American barrio of San Antonio, Tex. Preliminary results from the summative evaluation

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of effects on screening rates are presented in the following article (22). The main objectives of the program are to 1) increase screening and compliance with Pap smear recommendations among Mexican-American women 18 years and older, and 2) increase screening and compliance with mammography recommendations among Mexican-American women 40 years and older. During the course of the study, controversy developed that led to new age guidelines recommending regular mammography for all women over the age of 50. Younger women were encouraged to receive mammograms if they had a family history of breast cancer. The program combined media and community activities within a six-census tract area in San Antonio's predominantly Mexican-American Westside. The following sections detail the program design, implementation process evaluation, and results from the first 3 years of activity.

## Methods

The demonstration activities were conducted by The University of Texas Health Science Centers at San Antonio and Houston, with cosponsorship from the San Antonio Metropolitan Health District and the Texas Department of Health. Six census tracts on the west side of San Antonio were selected for evaluative research. The program activities were concentrated in, but not limited to, that area, which contained approximately 25,000 women, of whom approximately one third were older than 40 years of age. This is a *barrio* community with copious unmet needs, including unpaved streets and unremoved garbage. While there has been increasing attention to the provision of health care services, it is commonly agreed that too many women, especially if they speak only Spanish, have not learned why or how to take advantage of the services that are offered.

## Media Campaign

*Programa A Su Salud* used several forms of mass media, including print, radio, and television in both English and Spanish language formats, to present role models. These individuals were recruited from the community and each reflected the same socioeconomic, ethnic, and cultural characteristics as the targeted audience. The only difference was their newly adopted behavior. Through social modeling, the program promoted healthier behaviors and created motivation for action. This combined strategy (media and community activities) sought to modify the target population's preferences and perception of risk, barriers, benefits, social pressure, self-efficacy, and outcome expectations.

Data on community information-seeking habits and other media preferences were obtained from libraries, marketing departments, and focus groups with community members. Then local mass media channels (i.e., television, radio, and newspapers) were prioritized and solicited to establish partnerships. These led to formalized agreements stipulating the interests and responsibilities of each party. Each media channel agreed to provide regular (usually weekly) airtime or column space and to provide reporters, cameras, and other needed media personnel. Program staff from the Health Science Centers pledged to provide a role model along

with interview questions, background material, and expert commentary on the topic. To facilitate this process, negotiation information covered the project's genesis, examples of role modeling, tentative media schedules, and content outlines. Exclusive association with one of each major media channels per intervention community was preferred (i.e., campaign programming appeared on one television station, one radio station, and one major daily newspaper per intervention community). However, different language media were not considered competitive within most communities because broadcasters regarded different languages as drawing distinctly different audiences. Therefore, it was acceptable to have programming over one English and one Spanish television station within the same intervention area.

Focus groups were designed to obtain qualitative understanding of a select group's participation and orientation to a given topic of discussion (12). Analysis of the terminology, expressions, and other verbal communication that surface in the group yields useful guidelines for program promotion or program message design (18). For this program, eight focus groups with 56 participants in each were organized to learn more about knowledge and perceptions of breast and cervical cancers, health care services, preventive health practices, nutrition, media habits, and other related topics. Participants were drawn from a cross-section of the target community. Focus group outcomes revealed a sense of helplessness about cancer, with fatalistic attitudes and either ignorance or confusion about the types and frequency of screening procedures. Many of the respondents questioned the effectiveness of the procedures. When asked about barriers to screening, the principal reasons cited were shame and cost. Related to language usage, there was a preference for bilingual material, so Spanish and English were both used in the intervention community. Focus group participants heartily endorsed the idea of using role models from the community who had made behavior changes (i.e., participated in screening or changed diet behavior) as the source for each message. The groups also suggested that a medical expert should be included when clarification of technical data or special emphasis was required. Over the course of the study, the form and content of media products were routinely screened by additional focus groups within the context of social, cultural, and traditional mores and perceived values of the community. This also cultivated a sense of ownership within the community of the themes and imagery used.

Role models were identified through a number of community organizations (churches, social and civic organizations, community health clinics, small businesses, and schools) and through community outreach by the community volunteers and program staff. Low-income, urban Hispanics, 16-65 years of age, were the core criteria used to select role models. Screening required structured interviews and then assignment to medium of presentation, depending on the strength of the models' story and their preference to be on television, on radio, or in print.

The statements in the role model interviews were analyzed and organized by specific cognitive influences on behavior (Table 1). These concepts were drawn from a variety

Table 1. Theoretical sources for message content areas

Cognitive influences on behavior	Theoretical sources
Self-efficacy (skill)	Social cognitive learning theory (Bandura, 1986)
Response efficacy (benefits)	Health belief model (Becker, 1974)
Attitudes (evaluation)	Theory of reasoned action (Fishbein and Ajzen, 1975)
Perceived risk	Health belief model (Becker, 1974)
Perceived barriers	Health belief model (Becker, 1974)
Perceived social norms	Theory of reasoned action (Fishbein and Ajzen, 1975)
Perceived incentives/consequences	Social cognitive learning theory (Bandura, 1986)

of theories to maximize the effectiveness of education, skills training, and persuasion (23). Based on this analysis and guided by a monthly topic schedule, media messages were produced in the form of news stories, articles, scripts, flyers, etc. This method allowed simplification of interview analysis, provided clarity of the behavioral message and ease of content classification, and facilitated campaign monitoring (24). The theoretical concepts provided guidance for the interviewer and headline or tag line writing. For example, an interview to probe self-efficacy would ask about how the person came to feel in control of their own screening status. Specific questions for self-efficacy would include the following: "If you want to get a mammogram, how sure are you that you could do it? Why? How has this changed in the past few years?" An interview about response efficacy would focus on perceptions about whether cancer screening can indeed prolong life.

A chief goal of the intervention was to maintain a continuous stream of messages across as many different media channels as possible. Other goals were exclusive programming with specific media, preservation of the role model as the focus of all messages, and rotation of behavioral/cognitive concepts. We planned for regular bilingual programming to appear in television, radio, and print. The media plan included weekly television and newspaper stories and monthly materials distribution. The goal was to present approximately one new message in some form each week.

Actual use of radio in San Antonio averaged 1 hour per month. Talk shows were either taped for later broadcast or offered live, which stimulated immediate audience interaction. A role model and medical expert would accompany a project staff member and the radio personality. Weekly English language columns appeared in *The Sun*, a weekly insert of *The San Antonio Express News*, the major daily newspaper with a circulation of 220,000. A Spanish language column occurred biweekly in *La Prensa*, which had a circulation of 50,000, but largely targeted the Westside's Mexican-American neighborhoods. Regular evening television newscasts featured *Salud* programming over KWEX, the local Spanish language Univision affiliate. In addition, each week from August to December 1993, programming occurred over a local cable access channel that aired programs featuring role model stories and had medical experts with project staff as moderators. All presentations were categorized and tabulated for later analysis and implementation evaluation.

### Narrowcast Media

A number of project materials were developed to promote and reinforce the mass media messages and to present modeling stories in a small media format. The small media

facilitates interpersonal contact by volunteers and the community. Other project-generated materials were specifically designed to aid volunteer network maintenance. At the beginning of each month, community bulletins were distributed throughout the community by volunteers and outreach staff. The bulletin contained a calendar of role model mass media stories listing the channel, time, and program title. It also included role model stories with pictures that focused on the behavioral objectives predetermined for that month. Important information, such as clinical cancer-screening sites, fee schedules, phone numbers, and clinic times, were provided. This bilingual publication strove to meet 6th-grade reading levels or lower, expressed content graphically whenever possible, and added a visual variety of color, shape, and form.

To encourage additional interpersonal contact with the community, a very simple (Xerox-copy quality) bilingual, midmonth recipe flyer was produced. The recipe flyer typically promoted a traditional menu item (featuring foods low in fat and high in vitamins and fiber), accompanied by a picture of its author (either a volunteer or other community member). A brief statement by a role model that conformed to the monthly topic area was included. A bilingual, 180-page cookbook containing original recipes from the kitchens of role models and volunteers was also produced. In addition to 47 recipes, the book contains preparation guidelines, different food groups, daily nutritional requirements, fat and fiber facts, and pictures of the volunteers. Each recipe was tested by nutritionists and dietitians in a Houston test kitchen to confirm quality and taste and to ensure what a "dash of this" or a "handful of that" really meant. Amounts of fiber, fat, and caloric content are provided for each recipe, along with a helpful tip for preparation.

A volunteer newsletter, entitled *Saludos*, was also provided and mailed on a quarterly basis to the networkers or volunteers. The newsletter provided educational information to the volunteers as well as current news about the project and other volunteers. The newsletter was intended to reinforce volunteer participation, to provide internal network communication, and to publicly acknowledge their work. Volunteer activities and special occasions, such as birthdays, graduations, and anniversaries, were announced. As a benefit of volunteerism, each volunteer received a complimentary cookbook.

### Community Organization

According to the communication approach presented here, the most effective teachers are those who teach by example and offer encouragement for the development of new behaviors. The objectives of the community networkers were to identify role models who demonstrate the knowledge, attitudes, and skills needed to prevent cancer and to prompt and reinforce imitation of those models. The project recruited networkers to promote breast and cervical cancer screening and appropriate nutritional behaviors among members of the community and to encourage community members to listen, view, and read project-produced media messages. A full-time community coordinator supervised community outreach

activities, networker recruitment, and the efforts of two part-time community outreach workers. The role of outreach workers was to support the community coordinator by helping to identify, recruit, train, and maintain networkers. This was achieved by making personal contact with their neighbors (through phone calls and home visits), recruiting networkers, distributing small media, and supporting networker maintenance activities (i.e.: helping to organize refresher classes). Recruitment of volunteer networkers required networking among opinion leaders, institutions, and community groups. Organizations, agencies, small retailers, and churches within the study area provided names of potential networkers, and appointments were made with interested individuals and organizations.

The main function of the networker was to regularly distribute small media materials while providing positive reinforcement for project activity and personal behavior changes. Training was offered on a monthly basis. It consisted of roleplaying community bulletin distribution while paying special attention to sociocultural and interpersonal communication issues. Observance of cultural traditions was emphasized, such as respecting other people's schedules, maintaining confidentiality in their contacts, and never approaching a person of the opposite sex who might be alone in the house. Basic training techniques included the proper use of positive social reinforcement and avoidance of prejudice, criticism, and conflict. Training was bilingual and lay testimonies reinforced project benefits, goals, and personal self-efficacy.

Each refresher session offered new and/or practical information for the networker, reported on the volunteer network, and encouraged networker leadership development. Training sessions were designed to familiarize networkers with health care technologies to alleviate fears and alienation associated with medical care and procedures. Refresher sessions included tours of health care sites and presentations by speakers with a specialty in breast and/or cervical cancer detection, treatment, and research. Networkers were encouraged to suggest topics for future refresher sessions. By seating everyone in a circle and mixing staff and networkers, interaction increased and reticence to express real needs and/or experiences decreased.

All networker maintenance activities sought to be interactive and supportive. The networkers formally enrolled in the project by completing or assisting in the completion of a "networker profile form" (i.e., personal background data, networker's interests, and the number of persons a networker could regularly contact each month). In addition to their formal social reinforcement role, the networkers also were instrumental in identifying role models within the community.

Keeping networkers motivated is as much art as social science. Some incentives developed by the *Salud* program included identification buttons with pictures, completion of a training certificate, a handbag with educational materials, *Salud* pins, and cookbooks for networkers after 6 months of participation. *Salud* networkers were also recognized in the

networker quarterly newsletter. Personal events were acknowledged with cards in the mail (i.e., birthday, anniversary, death, etc.). In addition, an annual summer picnic and Christmas party provided group celebrations. After the first year of program activity, beginning in the summer of 1993, a set of organizational sites was recruited to augment distribution of small media. These included small businesses, churches, senior nutrition centers, and community health centers. Based on the interest of their leadership and on the number of customers, members, etc., each site agreed to distribute an appropriate number of materials.

## Implementation and Process Evaluation

Several forms were designed to facilitate process data collection and monitor the conceptual and applied development of *Programa A Su Salud*. Regular staff meetings were held with the purpose of reviewing community and media target activities and accomplishment and to aid in problem solving. This activity also helped to gather and confirm field data that were not collected by other means or forms. All data were systematized, coded, and entered using a commercial relational database program and then analyzed by the project evaluation staff. The different elements were: 1) an organization contact form to identify type of group contact, contact person, number of potential volunteers, etc.; 2) a volunteer recruitment form to register potential volunteers who desire to enroll in the project; 3) a training evaluation form to evaluate each training session so that adjustments could be made to improve effectiveness; 4) a volunteer profile form, updated weekly, that provides an inventory of the volunteers with the basic data needed for further evaluation; 5) a media production form, completed monthly, to record all mass media activities featured monthly; 6) a small media distribution form, recorded monthly, to record distribution of materials by volunteers and sites; 7) a volunteer survey form, distributed quarterly, to evaluate project activities, volunteer interests, and needs; and 8) a role model inventory form, updated periodically, to provide an inventory of the role models participating in the project.

## Results

### Media Distribution and Content

The distribution of small media material is described in Table 2. A total of approximately 84,000 pieces was recorded over 2 years of activity. Distribution increased in the second half of 1993, when the organizational sites were activated. Since that time, businesses (mostly small shops and grocery stores) have been the major route of distribution. The number of messages carried by the three mass media channels is presented in Table 3. A total of 156 messages were recorded during seven quarters. This amounted to an average of 7.5 stories per month, with the majority appearing in newspapers.

Each small media piece carried one to three separate role modeling messages. The mass media messages usually consisted of a simple story about a role model. In the broadcast media, these ranged from 2 to 10 minutes in length, depend-

Table 2. Small media distribution, October 1992 - December 1994

Sites	1992		1993			1994		Total
	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	
Volunteers (n = 85)	3939	3233	2485	3085	2055	3650	3575	22,022
Businesses* (n = 74)	0	0	0	8487	6200	9520	8670	32,877
Health services (n = 7)	0	0	0	1783	1280	2220	3080	8363
Churches (n = 2)	0	0	0	2099	1244	2045	2106	7494
Nutrition sites (n = 7)	0	0	550	3423	2195	3630	3255	13,053
Totals	3939	3233	3035	18,877	12,974	21,065	20,686	83,809

\*Includes: restaurants, grocery stores, pharmacies, beauty salons, flower shops. Participation of businesses increased over time.

Table 3. Quarterly mass media placement by type

Media type	1992		1993			1994		Total
	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	
Television	1	0	0	14	4	8	3	30
Radio	6	6	4	0	1	1	1	19
Newspaper	21	18	17	18	16	13	4	107
Totals	28	24	21	32	21	22	8	156

ing on the format and time of day. The newspaper stories were typically 10 column inches or more, with a photograph or artwork to illustrate the message. To illustrate the actual distribution of message content, we examined field notes, other records, and actual newspaper stories in print for 60 separate stories to categorize information according to the theoretical message content areas used in the campaign. Each story contained more than one content area, and we were able to identify a total of 111 specifically intended messages in the 60 stories. The results of this analysis are shown in Table 4. Self-efficacy and response efficacy stories were the top categories, followed by evaluative attitudes, risk perceptions, overcoming barriers, and social influences. These reflected both the content of the actual material provided by the role models and our finding, assessed through focus groups, that people need to learn they can control their own risk of death because cancer screening is effective as well as acceptable and low in cost. Examples of the messages are provided in Table 5.

Records of the implementation and process evaluation indicate that 85 volunteers (82 females and three males) were recruited. Demographic data on the volunteer network were collected at the time of their activation into *Programa A Su Salud*. Quarterly surveys sampled a portion of the volunteer network measuring changes in health knowledge, attitudes, and behaviors during the course of their participation in the project. Results showed that 92% were females; the

average age was 49 years, with education levels of 7th to 8th grade. The most frequently cited reasons for becoming a volunteer were a desire to help other women, an awareness of the importance of cancer prevention, and the need for better nutrition practices.

To assess their activity, data from the volunteer surveys were tabulated. Sixty volunteers participated in the survey; they reported four to 100 contacts per month in which they encouraged peers to read or view program messages and to learn from and imitate the role models. Examples of specific information that role models reported giving include "low cost examinations, female doctors available, Saturday appointments." All were satisfied with their activity; 11 had found and referred role models to be featured in the media campaign. Twenty-four (40%) reported special activities that went beyond their role as communicators. Each of these women helped an average of 12 of their peers to make screening appointments; an average of six were followed by each volunteer to make sure that the appointment was kept. Examples of these reported activities included the following:

Table 5. Illustrations of role model stories using different theoretical concepts

Theoretical concepts	Examples provided by role models
Self-efficacy	By asking for a Pap smear, Mrs. A. took control of her own health; it was a good thing because the doctor found cancer; Mrs. A. had an operation
Response efficacy	Mrs A. was 39 then; today she is 85 and feeling fine
Perceived norms	"More and more of my friends are getting mammograms"
Attitudes	"I would rather spend a little to find disease early enough to do something about it"
Perceived risk	"Everyone can develop cancer"
Perceived barriers	"I used to get embarrassed"
Perceived incentives/consequences	"If I do not go, it could be worse"

Table 4. Media content by theoretical concept

Theoretical content	No. of distinct theoretical concepts
Self-efficacy	26
Response efficacy	25
Attitudes	14
Perceived risk	13
Barriers	10
Social support	9
Perceived incentives/consequences	6
Perceived norms	5

“talked to friends and family [to get their help], called [the clinic] together with them, took them to the clinic.” Interestingly, we found that networkers who initially committed to contact many people were often those who contacted the least in practice, while networkers who were most productive were more realistic from the start and often exceeded their expectations. Age was a good predictor of interpersonal contacts. Of the 10 networkers who distributed the most calendars, one half were more than 60 years old. Prior volunteerism and organizational experience were good predictors of activity but only fair predictors of actual clinic referrals.

## Discussion

*Programa A Su Salud* exemplifies culturally sensitive health promotion at the community level. Based on encouraging preliminary findings presented in a companion article, we are expanding application of these techniques to other Hispanic populations and additional areas of cancer control. The theoretical model that was applied in this study combines peer modeling and peer organization for networking. This means that all messages come from the audience in the form of role model stories and that the community itself distributes them through the peer leader network. This removes and overcomes cultural and linguistic barriers to communication to guarantee that nearly everyone can be reached with a relevant message from an appropriate source. Each component of the program (i.e., community networkers, media production, and evaluation [both qualitative and quantitative]) involved individuals from the community and investigators who were bilingual and bicultural. This collaboration at each level led to a more effective communication strategy. In addition, specific aspects of the Mexican-American culture were preserved in the delivery and reinforcement of the health behavior messages. “la familia” (family), “respeto” (respect), “simpatia” (understanding), and “el idioma” (language) were part of all each program element.

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