

LESSONS LEARNED FROM PUBLIC HEALTH MASS MEDIA CAMPAIGNS: Marketing Health in a Crowded Media World*

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■ **Abstract** Every year, new public health mass media campaigns are launched attempting to change health behavior and improve health outcomes. These campaigns enter a crowded media environment filled with messages from competing sources. Public health practitioners have to capture not only the attention of the public amid such competition, but also motivate them to change health behaviors that are often entrenched or to initiate habits that may be new or difficult. In what ways are public health mass media campaigns now attempting to succeed in a world crowded with media messages from a myriad of sources? What are the conditions that are necessary for a media campaign to successfully alter health behaviors and alter outcomes in the long term? To what extent can the successes and failures of previous campaigns be useful in teaching important lessons to those planning campaigns in the future? In this chapter we attempt to answer these questions, drawing from recent literature on public health mass media campaigns.

INTRODUCTION

Mass media campaigns to promote healthy behaviors and discourage unhealthy behaviors have become a major tool of public health practitioners in their efforts to improve the health of the public (25, 27). Large amounts of money, time, and effort are poured into mass media campaigns, both local and national in scope, each year in various attempts to get the public to eat healthy, get moving, stop smoking, and practice safer sex. However, past experience has shown us that the success of these

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types of interventions has varied greatly and that often the effectiveness of such efforts is difficult to measure (25).

Mass media campaigns can most simply be explained as exercises in information control (62). That is, interventions utilizing mass media campaigns are usually aimed at influencing the secular or the normal trend in the amount of information available on a given topic in a system. The influence may take two forms. The first is an attempt to increase the amount of available information on the topic of interest. For example, a campaign to promote mammography screening will strive to increase the amount of information available about mammography in a community system over and above what would have been available in the natural course of events. The second form is that campaign planners will attempt to not only increase the amount of information (e.g., number of newspaper stories, advertisements, print material, etc.) on a given topic, but also redefine or frame the issue as a public health problem to make it salient, attract the attention of the target audience, and suggest a solution to resolve that problem (62, 64). In line with the previous example, campaign planners may draw women's attention to the incidence of breast cancer and how early detection through screening could save lives. Thus a successful campaign will result in satisfaction of both criteria leading to a quantitative and qualitative change in the information environment in the community on the topic of interest. Given this definition of mass media campaigns we sought to determine what the conditions were that contributed to the success of some mass media campaigns and what things could be done to make campaigns better and ultimately more successful.

The chapter starts with a brief discussion of how communication campaigns have been conventionally approached and the factors that remain pertinent in planning today's campaigns. We also seek to identify new factors that campaign planners must take into account when planning campaigns. In the conclusion we attempt to summarize some lessons that can be learned from previous campaigns and applied to future efforts using mass media to promote public health. These conditions and lessons were derived from a review of campaign literature and reports of mass media campaigns in the professional literature in the last five years. We hope this chapter will help the reader to think about campaigns, how they are conducted, and reasons for their success or failure. We also hope that the lessons learned here will help motivate public health practitioners and researchers to reflect on how we market public health through mass media campaigns.

Method for Retrieving Studies

This chapter is not meant to be a systematic or exhaustive review of the literature on mass media campaigns, as several such good reviews already exist (9, 13), but is an attempt at a distillation of some generalizations and lessons based on our review of recent work. However, reasonable efforts were made to conduct a thorough search of the published literature to locate articles that reported on public health mass media campaigns. Two databases were searched for articles on public health mass media campaigns. PubMed, developed by the National Center for

Biotechnology Information at the National Library of Medicine, provides access to bibliographic information from MEDLINE and other life sciences journals. Web of Science was also used, and it searches the Science Citation Index Expanded and the Social Science Citation Index. Both databases were searched with the same 10 search terms or phrases (mass media campaigns, mass media and public health campaigns, public health mass media campaigns, public health media campaigns, health behaviors and mass media, communication campaigns, media campaigns, campaign evaluation, evaluating campaigns). Resulting articles were limited to the years 1998–2003 and the English language, and duplicate articles were eliminated. We further narrowed the list by limiting it to empirical studies or review articles and judging articles on their relevance to the topic. After we began reviewing the articles, additional materials were found using their bibliographies. This yielded 28 articles reporting on mass media campaigns or on their planning, implementation, or evaluation. An additional 24 review articles were also kept to provide additional insight into campaigns in recent years.

A REVIEW OF FACTORS THAT CONTRIBUTE TO THE SUCCESS OF PUBLIC HEALTH MASS MEDIA CAMPAIGNS

A close reading of the literature on recent mass media public health campaigns suggests a set of factors or conditions that appear to contribute to the success of a campaign. More savvy planners realize that rarely do these conditions exist *de novo* in the environment. Therefore campaign planners endeavor to manipulate the environment to fulfill these conditions to ensure campaign success.

In this next section we identify these factors or conditions and review efforts that recent campaigns have made to exploit them. We also identify factors or conditions that are not normally thought of or identified by campaigns as essential but, given the current information environment, matter in making campaigns successful.

Changing the information environment successfully is the main goal of most public health communication campaigns, with the ultimate goal of changing behaviors among individuals to prevent a chronic disease. Campaigns have conventionally been approached as focused and time-bound efforts. Campaign planning invariably focused on individuals and how their attitudes and behaviors might be changed with the “right messages.” A great deal of time and money was then spent trying to get that “right message” out the greatest number of times to the “right” audience. This conventional approach suggests the first condition that we feel must be met in order to have a successful campaign. It is:

- successful manipulation of the information environment by campaign sponsors to ensure sufficient exposure of the audience to the campaigns messages and themes (influencing the information environment and maximizing exposure).

Other conditions include:

- using social marketing tools to create the appropriate messages for distribution and, where possible, message theory and tailoring (creative marketing and messages); and
- creating concomitant structural conditions such as a supportive environment/opportunity structure that allows the target audience to make the recommended change (supportive environment).

In addition to these criteria, we felt that some additional aspects should be addressed by all campaigns to succeed in the present media environment, but we only rarely saw examples of campaigns doing so. These include:

- developing campaigns with a careful understanding of the determinants of health behavior that could potentially lead to desired health outcomes (theory-based campaigns); and
- process analysis and especially assessing exposure to campaign messages could serve as useful intermediate markers both in making midcourse correction and in explaining final campaign outcomes (process analysis and exposure assessment).

In the next section, we amplify each of the factors that we feel are important for the success of a public health mass media campaign and provide examples from recent campaigns and explanations to support them.

Influencing the Information Environment and Maximizing Exposure

Successful manipulation of the information environment on campaign topics and themes is the first goal of campaign planners and sponsors in any campaign. In mass media campaigns, the main change in the information environment is brought about either by buying time or space in the media or by having time and space donated to the campaign by television networks, radio stations, and newspapers for public service advertisements (PSAs). Media messages are often supplemented with other approaches such as the distribution of health educational materials or the generation of news coverage of the issue through campaign events, especially when the budget for buying mass media time is small. Below, we review different strategies used by recent public health mass media campaigns to influence the information environment and maximize exposure.

Well-funded campaigns can afford to buy prime media time. Though this is rarely an option for campaigns sponsored by public health agencies, examples of campaigns using paid advertising to increase exposure to campaign messages do exist. The antitobacco counter-marketing campaigns of recent years offer sound examples of how large-scale paid media campaigns can successfully use message strategies that court controversy to influence youth attitudes and behavior (12, 13, 19, 51, 53, 54, 55, 59). For example, Farrelly et al. (12) evaluated the impact of two nationwide counter-marketing campaigns, American Legacy Foundations' "truth"

and Phillip Morris' "Think. Don't smoke" campaigns on youths' attitudes, beliefs, and intentions toward tobacco use with the overall goal of reducing smoking initiation among teens. The "truth" campaign used paid TV and print advertising to "expose" the tobacco industries' youth-specific marketing strategies, while the central message from the Phillip Morris' campaign was that youth should say no to smoking. Although both campaigns were ostensibly designed to reduce youth smoking, the evaluation showed that they had different effects on youths' attitudes toward smoking. The "truth" campaign led to development of antismoking attitudes among the youth, whereas the "Think. Don't smoke" campaign by Phillip Morris was reported to have actually softened the youths' attitudes toward tobacco companies (12). The National Youth Anti-Drug media campaign is another prime example of a national level campaign with more resources using national media buys to try and reduce drug use (primarily marijuana use) by adolescents (30). Although the campaign appears to have been successful in obtaining necessary coverage and influencing the message environment, the direction of the influence has been a topic of debate. Recent evaluation has shown that there is little evidence that the campaign has been successful in stemming pro-drug attitudes or in reducing drug use among youth (26).

In the past and still today, public health mass media campaigns are often limited in monetary resources and are dependent on TV and radio broadcasters to donate time for PSAs. These campaigns, however, are often limited in their success. An extensive study by the Kaiser Family Foundation, for example, reported that reliance on PSAs often results in messages being played during less optimal time slots, leading to limited message exposure to the intended audience (45). However, owing to lack of funds campaign planners are often limited to using only PSA time, but they often supplement their campaigns with other strategies.

These strategies to supplement their message can include utilizing printed materials, such as ads in newspapers and magazines; patient education materials, such as brochures or fact sheets; graphic media, such as billboards and posters; and labeled promotional items like T-shirts and calendars.

Several successful examples of such a strategy exist in the extant campaign literature. A campaign to raise awareness about colorectal cancer screening sponsored by the Centers for Disease Control and Prevention and the Health Care Financing Administration relied on TV and radio PSAs, supplemented by distribution of materials such as posters and patient education materials (29). A campaign to educate people about the benefits of physical activity and to increase self-efficacy to participate in physical activity entitled "Yuma on the Move" supplemented its core PSA campaign with posters for worksites and comic strips for inclusion in worksite newsletters (44a).

Reger et al. (42–44) report a series of interventions using different strategies to encourage people to switch from the consumption of high-fat milk to low-fat milk in several communities in West Virginia. One intervention used mass media in conjunction with community education strategies, a second used paid advertising alone, and the third campaign compared public relations and community education

strategies with paid ads alone. Public relation strategies utilized by the milk campaigns generated attention through workshops, talks, press conferences, taste tests, and supermarket programs. Media placements were carefully tracked and pre- and postcampaign assessments were made. In general, all of the campaigns were successful at least in the short term in generating both a self-reported switch in milk consumption from high-fat to low-fat milk as well as a reported drop in the supermarket sales of high-fat milk, though the latter was not statistically significant.

Another recent example of amplification of campaign messages through multiple strategies is the VERB campaign. The VERB campaign, launched in 2002 by the Centers for Disease Control and Prevention, aims to promote “positive” activities among “tweens” (youth aged 9–13) and consists of three main components (7). The first component is a media campaign that is designed to have a 52-week media presence on television, radio, and print (national magazines, newspapers, billboards). Media time is being purchased and donated at the national and community levels and the general-market media strategy is to have messages targeting “tweens,” parents, and adult influences. The second component is forming partnerships with both governmental (on local, state, and national levels) and corporate sponsors to reinforce the campaigns messages. The third component is staging community events throughout the year in cooperation with partners to give “tweens” the opportunity to experience positive activities and learn about opportunities in their area. The campaign is underway at the time of this report, and it is an empirical question whether the multiple message modalities will lead to successful outcomes or not.

Another strategy used by campaigns to amplify campaign messages is to bargain with stations to obtain donated time based on a limited purchase of time on that channel. For example, a Kaiser Family Foundation report on PSAs suggested that media outlets are often amenable to donating time for PSAs if the campaign also purchases some time on the channel (45). Several recent campaigns successfully used different strategies combining paid and free ads to broaden the reach of their messages (20, 35, 36, 58). For example, an antidrug campaign targeting high sensation-seeking adolescents bought 40% of its spots on TV and had the rest donated by the stations where they bought time (36).

In summary, it is imperative for campaigns to achieve sufficient exposure that makes the campaign message stand out in a crowded information environment. Different campaigns used different strategies to influence and change the information environment. In general, most media campaigns were supplemented by the use of other “small media,” such as brochures or other promotional material, or efforts to mobilize the community. It is, however, difficult to separate the effects of each of these individual strategies or channels and that may limit any generalizable lessons that could be drawn from them.

Creative Marketing, Messages, and Message Effects

Given that a great deal of money, time, and energy goes into the distribution of messages and materials in a public health mass media campaign, one might expect

that an equal amount of effort would be put into the creation and placement of the messages. We found variation among campaigns in both creativity and placement of their messages and in their reliance on professional communication services.

Careful attention to messages can contribute to redefining the issues for the target audience, enhancing the probability of campaign success. It is a useful tactic that could be helpful in overcoming the normally limited resources of typical public health campaigns when compared to commercial campaigns. For example, Palmgreen et al. (36) used the sensation seeking targeting (SENTAR) prevention approach in the design and placement of campaign messages, leading to a successful reduction in marijuana use among high sensation-seeking adolescents.

Using message effects theories to design messages for target audiences can also enhance the probability of a campaign's success. Message framing is a concept often used in the social sciences but has only recently begun to be used in public health. One type of framing, for example, is proposed by Rothman & Salovey (47) using a variation of prospect theory to frame health messages that were factually the same in terms of the benefits (gains) or costs (losses). The effect of framing varies depending on the outcome. In one report, Rothman et al. suggest that gain-framed messages were more effective in promoting prevention, whereas loss-framed messages were more effective in promoting early detection (46).

Another study testing gain-framed versus loss-framed messages relating to sunscreen use in a sample of beachgoers found that participants exposed to the gain-framed messages were significantly more likely to request the free sample being distributed, to intend to use sunscreen repeatedly while at the beach and to intend to use a sunscreen with SPF 15 or higher (11). A study looking at the effects of message framing and ethnic targeting on mammography use for low-income women found that that loss-framed, multicultural messages were the most persuasive for low-income women (49). As noted earlier, targeting is another way to increase the effectiveness of messages in campaigns. Combining targeting with message framing based on sound message theory could greatly improve campaign outcomes.

Framing is also a tactic used by those who enlist the media advocacy approach to healthy change and is known to influence media coverage and public perceptions (39, 64).

Another message strategy that is often used is fear appeals, and an extensive review by Witte & Allen (65) suggests that strong fear appeals increase perception of susceptibility and that, combined with messages suggestive of skills and actions, fear appeals are more effective in changing behaviors.

Some recent large campaigns were skillful in crafting their messages though they were not necessarily theory based. For example, a series of reports evaluating the effects of the antitobacco "truth" campaign in Florida, which revealed the "predatory" and "manipulative" tactics of the tobacco industry, showed promising results (50, 53–55). All evaluations indicated increased awareness of the campaign's messages about tobacco use and the tobacco industry, the development of stronger antitobacco attitudes by youth, and less smoking initiation compared to the national rates. They utilized youth input in developing appropriate messages

and used multiple strategies to get their message out, including a concert series for teens, a city tour with press conference, and distribution of “truth” merchandise and materials around the state from the “truth” truck, all of which were designed to supplement the large mass media campaign. Similarly, several reviews of youth tobacco prevention mass media campaigns suggest that media campaigns, when combined with other strategies such as community-based programs, can be successful in stemming increases in smoking prevalence among youth (13, 19).

Supportive Environment

Another criterion for a successful campaign is the existence of a supportive environment that enables individuals to make the changes in health behavior called for in campaigns. We feel that the success of a mass media campaign in promoting change in a behavior depends on the nature of the environment that will facilitate the change and the structural changes that accompany or are concomitant with campaigns. The relationship between structural changes and the media coverage, including campaigns, is reciprocal. Media attention can strengthen the supportive environment for forming community coalitions and also in lending legitimacy for policy and environmental changes (9, 10, 15, 39, 50, 57, 61). Structural changes can also compensate for media campaign effects because these tend to attenuate over time (19, 23, 24). Structural or environmental changes combined with media campaigns could potentially enable sustainability.

In fact, in most studies reviewed here, any discussion of long-term impact of campaigns was limited, if not virtually absent. Therefore, only those campaigns that utilized or encouraged community involvement and community change are discussed in this section. These campaigns, in addition to using traditional channels of mass communication, such as local radio, television, and newspapers, to influence the message environment, have also attempted to mobilize entire communities by involving community leadership, civic and voluntary groups, and organizations.

For example, Alstead et al. (3) report on a campaign that targeted both individual behaviors as well as the environment to promote knowledge of condom use among sexually active teenagers and promote availability of condoms in public health agencies, businesses, and community organizations. Community mobilization strategies included meeting with community leaders, formation of community advisory groups, and distribution of materials through schools and health fairs. They report mixed success: an increase in exposure to the campaign messages but not increased use of condoms.

Another campaign incorporating community involvement to promote awareness of folic acid among women of childbearing age, for example, used PSAs and printed education materials, in addition to mobilizing volunteers, who helped grocery stores to label foods rich in folic acid, and passed out educational materials and green ribbons (promoting folic acid awareness) to community members (6). The campaign was successful in increasing awareness of benefits of folic acid and knowledge about folic acid. Awareness of benefits increased from 31% before the

campaign began to 75% postcampaign, and knowledge about consumption of folic acid increased from 55% to 73%.

Some researchers feel that community mobilization by itself may be a sufficient strategy for changing behavior, and several interventions compared community mobilization interventions to media campaigns (33, 42, 44). Community mobilization strategies may be particularly necessary when reaching an ethnic group with new messages. A campaign to promote hepatitis B vaccinations among Vietnamese-American children compared a media education campaign in one city with community mobilization in another and reported that both strategies were successful in increasing both knowledge about vaccination and the number of children vaccinated (33). However, awareness of hepatitis B increased in the media-only city by ~21% compared to a 6.5% increase in the mobilization-only city. The parent or provider reporting on vaccinations showed an increase with both strategies at postintervention, from 28.5% to 39.4% in the media-only city compared to the mobilization-only city (26.6% to 38.8%). An interesting and useful twist to this campaign is the report of a cost-benefit analysis of the two strategies. Media education was found to be more cost-effective when compared to the community mobilization strategy, though both were successful in promoting immunizations (66).

Similarly, two reviews of cervical cancer screening interventions found that the most effective interventions combined a mass media component with a supplemental intervention (5, 31). For example, Black et al.'s (5) review of community-based strategies found that mass media combined with direct education tailored to women and/or health care providers were the most successful in increasing Pap smear rates. Marcus & Crane's review (31) found media campaigns worked best when they promoted programs that eliminated or reduced access barriers to care.

Other campaigns used community mobilization strategies, in addition to mass media approaches, to influence the information environment, including campaigns to modify social attitudes toward domestic violence (20), to change social norms on alcohol abuse among college students (56), and to increase knowledge about emergency contraception and a hotline to help women access it (58). In general, mass media campaigns in combination with strategies to mobilize communities are more effective than community mobilization strategies by themselves (9). Helping to create a supportive environment for change is a key feature in having successful behavior change in both the short and long term.

Theory-Based Campaigns

A careful understanding of the determinants of a behavior targeted in a campaign could potentially lead to desired health outcomes. This is possibly one of the more critical conditions for the success of most public health mass media campaigns, and yet it is often overlooked. It is based on the premise that human behavior is influenced by a well-defined set of factors, and a successful campaign can influence behavior by influencing the determinants leading to that behavior (17). Several theories of health behavior, such as the health belief model (28), social

cognitive theory (4), the transtheoretical model (38), and the theory of reasoned action/integrated model of behavior change (17), identify pathways and determinants that ultimately lead to health behavior change. Major theories in media studies (15), such as agenda setting (32), the knowledge gap (60), exemplification (37), and framing (48), among others, help to identify the impact of campaigns on the determinants identified above. Although the theories differ in the individual weights they give different factors and the sequence through which individuals move through the paths, the factors themselves can be generalized as follows: attention to the message, salience or perception that the message applies to them, resulting interest, norms and beliefs of their social environment, attitudes toward the message, self-efficacy (skills and confidence to perform the behavior change), intentions to change, and finally, performing the behavior.

Based on a review of major theories of health behavior, Fishbein et al. (17) suggest that four factors could potentially influence individuals' behavioral intentions and behaviors:

- perceived susceptibility of the individual to an illness or disease;
- individuals' attitudes toward the behavior;
- perceived norms, in turn, influenced by the group and the community environment in which an individual operates; and
- self-efficacy, an individual's confidence in performing the behavior.

Together, these four sets of factors and their determinants could potentially be targeted through mass media campaigns in achieving the desired goal of health behavior change.

Few mass media campaigns in public health explicitly identify the theories that inform their message production and campaign strategy. Yet, successful examples of theory-based campaigns exist. Some campaigns used social cognitive theory (SCT) to promote healthy changes among individuals. The theory suggests that individuals should have the confidence that they can perform a recommended behavior and that the costs in performing the desired behavior are outweighed by benefits or incentives. Jorgensen et al. (29) used SCT in planning their campaign to promote colorectal cancer screening, which was designed to raise awareness of colorectal cancer and to encourage adults 50 and older to speak with their doctors about screening. Kelder et al. (30) also designed a campaign using SCT to discourage drug use among adolescents. The goal of the campaign was to change perceptions of social norms of the adolescents, attitudes toward drug use, and imparting skills to resist drugs and make positive lifestyle choices.

The focus on norms is one component of campaigns using the theory of reasoned action and integrated model of behavior change. Norms about alcohol consumption were successfully changed by a campaign to discourage binge drinking on college campuses (56), though it did not change drinking behaviors. Oh et al. (35) also based their campaigns on the theory of reasoned action to promote awareness of risks and screening for chlamydia. They reported that their campaign was

successful in encouraging those exposed to campaign PSAs over the radio and TV to call the hotline established by the campaign sponsors. The design of the evaluation does not allow causal inference that the campaign was directly responsible for this success, though most of the calls to the hotline were during the campaigns.

The transtheoretical model (TTM) and the theory of planned behavior were the basis of a successful campaign to promote walking in a West Virginia community compared to a reference community (40). TV and radio PSAs were used to air the messages along with other channels such as worksites. The campaign was successful in increasing the level of physical activity among the members of the intervention community compared to the reference community. Another physical activity intervention in Yuma, Arizona, using the transtheoretical model also reported greater exposure to the campaign messages as well as more physical activity among the community residents (44).

Palmgreen et al. (36) used the SENTAR approach to discourage high sensation-seeking adolescents from marijuana use. TV spots were played in programs that attract high sensation-seeking youth, and the campaign evaluation suggests that the campaign was successful in reducing drug use.

Most campaigns reported here are focused on changing individual behaviors by identifying determinants of the behavior and manipulating them through mass media campaigns. A different approach reported by Glik et al. (21) focused on changing media institutions using Bordieu's theory of cultural production. Individual television producers, writers, and directors were approached to "embed" messages in primetime and daytime entertainment on the importance of immunization over the lifetime. The campaign planners managed to air campaign messages in several TV shows and more were planned. This approach, also known as entertainment-education, has intuitive appeal given the popularity of entertainment television and its mass reach. Yet, the empirical data on the success of the programs in changing behavior is largely based on anecdotes and case studies and less on systematic evaluation. More rigorous evaluation based on prospective data is sorely needed.

This brief review suggests that theory-based campaigns that carefully identify a set of determinants that influence cognitions, affect, and behaviors are successful in achieving campaign goals. The theories are helpful both in creating appropriate message strategies as well as in choosing the right vehicles to place the messages. Theory-based evaluative research is also essential in choosing messages for campaigns (2, 17). Yet, despite the utility of using theories, less than one-third of the empirical articles reviewed for this chapter reported having any theory that informed their campaigns.

Process Analysis and Exposure Assessment

Textbook campaign practice would be to do sufficient formative research to guide message development and placement. Often, campaigns will do some kind of audience assessment through focus groups or marketing surveys. Yet, few campaigns assess intermediate markers such as exposure to campaign messages that will be

useful for both midcourse correction as well as in explaining the success of a campaign or the lack thereof. A fundamental premise behind the success of a campaign is that the target audience is exposed to the campaign message(s) and that the exposure is sufficient to be discernable from exposure to topics in the environment that are not a part of the campaign. Though exposure to the campaign message by itself does not guarantee changes in behavior, the probability of the success of a campaign is enhanced by exposure to campaign messages. An information campaign, either through mass media or other channels, is based on the assumption that some form of exposure to campaign messages precedes the effect of the campaign on knowledge, attitude, or behavior. Yet, few campaign planners and evaluators report on exposure levels of their messages. Some argue, based on a review of major community trials, that one reason for the lack of success of communication campaigns is insufficient exposure to the message by the target audience (25, 34).

Most campaigns assess exposure not at the individual level but by estimation based on the number of times their message has aired or was printed and the approximate audience for each one of those exposures. The measures often used to assess exposure include gross rating points (GRPs), impressions, and hits. Measures such as impressions and rating points are derived from advertising and are based on assessing minimal contact between the target audience member and the medium in which the message is placed (52). Exposure data are often gathered as a part of process evaluation, though some have used exposure data as temporary outcomes until the campaign is complete (7, 29). Some campaigns provide exposure data in this format as part of their evaluation strategy (20–22, 33, 35, 40, 43, 44). Despite their limitations simple exposure measures can be an adequate marker for predicting certain outcomes of communication campaigns.

For example, telephone surveys of 12- to 17-year olds found that exposure to the “truth” campaign was associated with an increase in antitobacco attitudes and beliefs, but exposure to Philip Morris’ “Think. Don’t Smoke” campaign was associated with being more open to the idea of smoking (12). Youth who recalled the television campaigns against smoking were relatively less likely to become regular smokers compared to those who did not recall seeing the television campaigns (19, 51).

On the other hand, as averred earlier, exposure may not correlate with behavior change. A series of cross-sectional interviews of adolescents in three communities targeted by the Condom Campaign, a 1995 HIV prevention program, found that while adolescents reported being exposed to the Condom Campaign, there were no obvious changes in condom use, which had been assessed to be very high at baseline (3).

Some researchers have argued that mere exposure itself is insufficient given the tenuous link between the message and the audience member and have argued for measures with greater validity, such as message discrimination, attention, recall, and recognition, among others (16). Message discrimination is a technique that measures the number of messages an audience member can discriminate from

the environment in response to a survey question. The audience member is asked to recall whether he or she has seen, heard, or read anything on the campaign topic, and if so, the medium in which they have seen or heard or read the message (8). Attention is measured by asking the respondents how much attention they paid to the campaign topic. Recall and recognition are measures that specifically elicit whether the audience member remembers seeing the campaign messages or logos or brand names. These alternatives to the conventional measures of exposure explicitly bring into consideration the audience members by focusing on such factors as interest or involvement of the audience in the campaign topic.

A DISCUSSION OF LESSONS LEARNED FROM RECENT PUBLIC HEALTH CAMPAIGNS

We conclude this piece with a summary of lessons we extracted from our review of the recent mass media campaign literature and an understanding of the sociology and psychology of change. The lessons below are not exhaustive but are an approximate distillation of the major conclusions that can be drawn at this point. Some are based on positive things we saw in the mass media public health campaigns we reviewed. Some are things we feel would add to or strengthen campaigns if they were done.

First and foremost, campaigns have to influence the information environment. To do this, campaign messages should be simple, straightforward, and framed in such a way that campaign planners successfully redefine the issue for the target audience. We saw examples of campaigns using public relations or advertising firms to help them develop excellent and eye-catching campaigns. We even saw a few examples of pretesting of messages or the use of message theories to develop campaign messages. However, there is room for improvement, especially in using message theories and pretesting of messages. In addition, public health researchers should also draw on the lessons learned from advocacy groups such as MADD or ActUp, who do not shy away from controversy as a way to get messages across and influence the information environment. What we saw less of, but feel is extremely important, was framing messages in culturally appropriate ways when trying to target specific ethnic groups. This is particularly critical given the recent Institute of Medicine report that enumerates the successes and failures of health campaigns focused on minorities and the underserved (27).

We did see a number of campaign planners choosing appropriate channels for their messages and striving to maximize exposure to their messages by using various strategies and venues to amplify their messages. There were numerous examples of using creative merchandising, combining free and paid outlets for message distribution, and utilizing media advocacy strategies to get messages out to the targeted audience. Though planners did seem to know that maximizing exposure was critical, none appeared to undertake any efforts to understand the information environment they were entering.

Our review suggests that few campaigns, if any, report any assessment of the information environment. Two related types of assessment could be beneficial. One type of assessment could focus on whether the environment is hospitable or hostile to the public health messages that are advocated in the campaign. In fact, most public health messages operate in a contested environment that is rarely neutral and is often hostile to these messages. How does one counter the environment that may be hostile to the public health messages? Few studies exist to inform us on this critical factor.

Yet another type of assessment of the information environment is to take into account competitors' strengths and behaviors. Those campaigns that did, either explicitly or implicitly, such as the "truth" campaign, do appear to have been successful in achieving their intended goals (13). More savvy campaign planners are paying attention to the competitive nature and the complexity of the media environment and employ professional tools to help them design messages that get noticed. This is the case for messages that advocate for proper nutrition and not smoking as they face an environment filled with messages from powerful tobacco and fast food companies. For example, the total advertising spending by McDonald's Corporation in 2002 was around \$1.3 billion and the Burger King Corporation spent more than \$600 million (1). One estimate of the combined annual expenditures of the tobacco companies on advertising is almost \$10 billion (14). In contrast the most well-funded public health campaigns have budgets that are calculated in million dollar increments, and most deal with budgets in the hundreds of thousands of dollars or less (13, 19, 43, 58, 67). Our contention is that public health communication campaigns often are conducted in an environment that is competitive, and spending on messages counter to the campaign can dwarf spending on the campaigns.¹ This fact, in turn, affects the success of the campaign or the lack of it.

In a related issue, few campaigns study the impact of media coverage outside the intervention despite evidence that news coverage can generate exposure to health messages and influence behaviors. For example, evidence suggests that unplanned media coverage resulted in a modest increase in health utilization services (23).

Because the information environment is rarely hospitable to campaign messages, another key improvement that can be made in campaign planning is the use of message effects theories and tailoring to create campaign messages. By extension, appropriate pretesting of messages and channels can help to avoid unforeseen consequences of campaigns, and message effects theories such as framing or exemplification can be successfully used to engender a new view or alter an existing

¹This does not suggest that spending on media campaigns is the only factor that determines the success or failure of the campaign. Smoking rates in the United States have steadily come down over the last four decades despite large promotional expenditures by tobacco companies. We argue that the reduction was accelerated by several factors including changes in smoking norms, legal measures such as bans on tobacco advertising, fiscal measures such as taxes on tobacco products, and decades of advocacy in addition to media campaigns.

view of a public health issue among the target audience. We did not see extensive use of message effects theories to construct messages.

Campaign planners need to help build the supportive environments that allow opportunities for action. Campaigns can be more successful when they are accompanied by concomitant structural changes that provide the opportunity structure for the target audience to act on the recommended messages.

Recourse to reinforcing strategies such as legislation and regulation can enable campaign effects to be not only strong but also sustainable. For example, campaigns that help to build community coalitions or influence policy may have more positive long-term effects on health.

Failure to address sustainability of the campaign was one of the biggest gaps in the literature. The conventional approach to public health communication campaigns was to create a campaign that was a focused and time-bound effort, and most campaigns only report effects for a short period of time following the intervention. And, often, campaigns measure what is intended and observable, ignoring unintended consequences. Where feasible, evaluation should also consider unintended consequences and outcomes over the long term. These unintended consequences and outcomes could be greatly reduced, and the probability of campaign success is likely to be higher if it is based on a sound understanding of human behavior drawn from the extensive body of work in health behavior theory and media studies.

The foregoing review suggests that campaigns are more than simple or straightforward efforts in health promotion and disease prevention, but instead are an exercise in information control operating under a variety of constraints and conditions. This calls for a revision of one's conventional understanding of public health mass media campaigns. What we need is a new theory of campaigns that incorporates a social change perspective. Such a perspective, while respecting and acknowledging the contributions of the campaign literature so far, argues for a more holistic approach that focuses on multiple levels of analysis and that takes into account both direct, immediate effects and indirect, long-term effects. As a corollary, campaign effects and, by implication, campaign planning must take into account the efforts of not only public agencies but also social and activist groups that advocate and agitate for specific changes in institutional policies and practices in the realm of public health.

Mass media campaigns, because of their wide reach, appeal, and cost-effectiveness, have been major tools in health promotion and disease prevention. They are uniformly considered to be powerful tools capable of promoting healthy social change. More than four decades of experience in using the media to improve health both here and abroad has built a sufficient canon of work that could serve as a beacon to drifting campaigns or as an important aid in planning new ones. Campaigns that ignore the existing knowledge base and attempt to reinvent the wheel are not merely a waste of resources but are doomed to repeat the mistakes of the past. On the other hand, the solid body of work built over the decades can be extremely valuable in designing effective public health messages and in reducing the disease burden.

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