

THE WHITE HOUSE
WASHINGTON

MEMORANDUM FOR ERIC LIU

From: Todd A. Summers 
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Office of National AIDS Policy
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Date: August 4, 1999

Subject: **Information on efficacy of public service announcements**

As we discussed, here is some information on the efficacy of public service announcements. I've included an article by David Holtgrave et al on the subject – he's a friend of mine who is now working at the CDC and I'm sure would be happy to talk with you.

The bottom line: well-designed, targeted PSAs can be part an effective part of a broader prevention campaign, but must be accompanied by more direct interventions. PSAs can move folks in the right direction but in and of themselves don't change behaviors.

I'll keep my eyes open for related studies – I have a request in to a friend at ONDCP – and will forward what I find.

PSAs

Are Public Service Announcements (PSAs) effective in achieving the adoption of health promotion/disease prevention behaviors?

A well designed PSA that is based on sound research, is well placed and is sustained over time can increase awareness and increase knowledge about a health issue and can convey both prevention and treatment options relevant to the target audience.

To maximize the probability that a PSA campaign will stimulate behavioral intentions, influence norms and attitudes, and achieve the adoption of healthy or healthier behaviors, ideally it should be one aspect of a multichannel, multifaceted, health promotion drive that shares the same behavioral objectives as the PSA campaign.

Given that high quality PSAs require a significant commitment of time, expertise, and resources, the factors that influence the effectiveness and impact of a PSA should be considered carefully. For example, there is current debate on whether PSAs and other media-donated strategies should be abandoned (or de-emphasized) in favor of paid media campaigns and/or other behavior change strategies.* This discussion is especially timely for any mass media health promotion/disease prevention campaign that may be launched over the next 12-18 months, since it is predictable there will be a paucity of PSA airtime available during the upcoming Presidential election process.

* John Murry, Jr., Atonie Stam and John Lastovicka, Public Opinion Quarterly, Vol. 60:1-29, 1996

What are some of the key factors that should be considered if one wants to maximize the effect of a PSA and/or a PSA campaign?

To be most effective, health ads/PSAs should:

- 1) have a message that provides accurate and understandable information;
- 2) be designed to motivate individuals to take a specific action consistent with the adoption of specific disease prevention/health promotion behaviors;
- 3) increase the individual's self-efficacy in adopting the action and/or behavior;
- 4) be relevant to the current needs, concerns and lifestyles of the intended audience;
- 5) communicate the message over a sustained period of time;
- 6) be an integrated part of a comprehensive, research-based health communications campaign; and,
- 7) have clearly defined behavioral objectives.

Effectiveness of Public Service Announcements – Points to Consider

Background

Public service announcements (PSAs) are most often 30-60 second messages on topics of social concern (e.g., HIV prevention, encouraging the use of seat belts or discouraging cigarette smoking). Local broadcasters air PSAs voluntarily and do not receive financial compensation for the airtime. The PSA media time tends to be donated by television and other media stations from their available, but unsold, inventories of commercial time.

The PSA campaign mechanism has been in use for many years and utilized for many types of issues. The effectiveness of PSA campaigns are influenced by a host of often-interrelated message and medium factors such as PSA quality and relevance, availability of airtime, and the timing and placement of the PSA broadcasts. A PSA may be effective in one context but not others, or may be effective for only a short period of time. For example, PSA message strategies and delivery systems that are effective for mainstream or general population audiences may prove to be ineffective with the specific groups who are at highest risk. In addition, there is now active debate on whether organizations should abandon (or de-emphasize) donated media strategies for paid campaigns as a strategy for increasing control over content, timing, placement and other factors salient to a campaign's effectiveness.

Evaluating the effects of PSAs and other communications campaigns is possible, but can be restrictively difficult and expensive.(1) The effects of specific campaign elements, such as PSAs, may be hard to separate from the other components of the campaign. In addition, since campaign components (i.e., treatments) are frequently applied in combination, it is difficult to know which treatments or combination of treatments caused improvement. Also, uncontrollable and/or unpredicted intervening variables may confound the effect of a communications campaign (e.g., competing emergent health situations or competing health communication campaigns). It is clear that a practical, systematic, evidence-based approach to the planning, execution, and analysis of PSAs and other communications campaigns is needed if we are to be able to maximize and evaluate campaign effectiveness.

(1) Personal communication with Melissa Shepherd, CDC

The Ad Council

The Advertising Council, Inc. advocates that PSAs are an effective means of communication and education. The Ad Council states:

“Even if the message is used alone or is unwelcome and intrusive, the PSAs increase awareness, reinforce positive beliefs, intensify personal concern and move people to action. Our PSAs benefit from regular exposure – the longer our ads run, the greater the effect they have on the audience.” (2)

The Ad Council Website highlights a research study conducted by the Advertising Research Foundation (ARF), which concluded that PSAs can induce significant changes in public health

behavior. Entitled, "A Strategic Research Approach to Measuring Ad Effectiveness," the project was jointly sponsored by the ARF, the Advertising Council, and the American Cancer Society. The study centered on a 30-second PSA encouraging people to ask their doctors about colon cancer tests.(2)

Highlights of the study's findings include:

PSAs build awareness – Awareness among those exposed to an average level of advertising (as defined by the study) increased from 11% prior to the campaign, to 29% after six months and continued to build, reaching 40% of the target households at the end of 12 months.

PSAs can be used to reinforce positive beliefs – When beliefs are widely held, a PSA campaign can reinforce those beliefs and inspire action. In the study, people in the target markets were asked to answer the statement, "if colon cancer is diagnosed in its early stage, it can be cured 90% of the time." The number of viewers exposed to an average level of advertising who believed this statement increased from 69% to 73%.

PSAs can motivate people to action – The study found that PSAs can move people to action with an average level of advertising. It also showed that sustained advertising and targeted media placement are critical in maximizing the effectiveness of PSAs. The number of men who took action as a result of being exposed to an average level of advertising for a full year, increased from 7-12%, and from 7-15% among those exposed to above average levels. [Of note: At the six month point, however, there was either minimal or negative change in behavior.]

(2) Ad Council [www.adcouncil.org]

PSAs and HIV/AIDS

PSAs about HIV/AIDS have been disseminated by CDC's National AIDS Information and Education Program (and more recently, the National Prevention Information Network), the National Institute on Drug Abuse, and many nonfederal agencies and organizations (e.g., state health departments, private organizations, and television networks). Data are available on the airing of AIDS television PSAs from the Broadcast Advertisers Reports of the Arbitron Ratings Corporation. The Arbitron report presents the total number of PSAs aired by networks and monthly estimates of PSAs aired by Baltimore area television stations. Data of this type has been traditionally gathered and reported as counts of PSAs aired, the time slots in which they appear, and which networks or stations aired them. Estimates of the cumulative dollar value based on donated airtime have been offered as another marker of success of HIV/AIDS PSAs (e.g., the "American Responds to AIDS Campaign.").

The CDC has undertaken a campaign, "The Prevention Marketing Initiative" (PMI) which is based on social marketing principles and targets young adults. The campaign's primary objectives are to delay sexual activity and promote the use of condoms among sexually active youth. The PSAs developed under PMI have been reported to be successful in increasing calls to the CDC National AIDS Hotline, achieving substantial media placement and donated airtime, and generating news coverage. The CDC will continue to evaluate the initiative to determine to what degree PMI achieves its "ultimate, stated, behavioral goals." (3)

(3) Holtgrave, D., Public communication strategies for HIV prevention: past and emerging roles, AIDS, 1997, 11 (suppl A): 5183-5190.

Points to Consider: Health Communications Campaigns

The ultimate goal of most persuasive campaigns is to influence the target audience to change, adopt, or stop a behavior. People's decisions to behave in a certain way is based on a number of factors, not simply personal knowledge acquired through direct exposure to information in the media. Behavior change occurs as a process, with individuals moving through a variety of stages including exposure, comprehension, skill acquisition, attitude change, and eventually behavior change. In addition, other mediators, such as audience characteristics, social and environmental considerations, and institutional factors may constrain individuals' ability to change. As such, how best to effect the adoption or change of specific behaviors depends on a variety of dependent and independent variables which need to be identified and taken into account if a PSA or other communications campaign is to be effective.

PSAs and other health messages with the same theme but a variety of at-risk audiences (e.g., preventing HIV/AIDS or violence) appear to be most effective when they are designed for and disseminated differentially to the appropriate segments of these target populations. Segmentation is often based on factors such as education, gender, culture, sexual orientation, and/or level of risk. To illustrate with those at risk for substance abuse: for some, prevention is the necessary message; for others, messages aimed at treatment and recovery are needed; and, for others, messages designed to retain or reinforce existing resistance behaviors and motivations are the most appropriate.

Some factors that influence the effectiveness of PSAs may be indirect or less obvious (e.g., institutional or environmental). For example, acceptance/rejection decisions by media gatekeepers may affect the design and ultimate outcome of PSAs. Television and radio station managers are often able to determine what type of PSA is aired and when. If PSAs are then designed to meet the gatekeeper's standards or criterion in order to gain acceptance, this may impact the effectiveness of the PSA in reaching and impacting the intended audience.

When developing a campaign and the messages within that campaign, theoretically informed, evidence-based proactive planning, execution and evaluation are critical steps to success. This includes pre-planning, pre-campaign formative research activities that assist in the identification of important independent and dependent variables (e.g., audience needs and beliefs) that can then be factored into the design, execution and assessment phases of the campaign.

Summary

Public health campaigns seek ultimately to change individuals' risk reduction/health promotion oriented behaviors. PSAs have demonstrated the ability to increase awareness of an issue, increase knowledge about that issue, increase self-efficacy and, in some cases, motivate people to action. These outcomes are all proximal to the formation of behavioral intentions, the initiation of behavior and/or the maintenance of behaviors. As such, PSAs, when well designed and executed, at a minimum have a role to play within the context of multichannel, multilevel, health promotion/disease prevention campaigns. The challenge for health campaign planners is to determine whether the PSA mechanism is appropriate for their health issue of concern and whether it is relatively more effective in achieving the identified behavioral objectives compared to other health communication strategies and approaches.

PAID- VERSUS DONATED-MEDIA STRATEGIES FOR PUBLIC SERVICE ANNOUNCEMENT CAMPAIGNS

JOHN P. MURRY, JR.
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Abstract Public service announcement (PSA) campaigns have traditionally relied on donated rather than paid advertising media. Recently, however, both government agencies and charitable organizations have questioned whether donated-media strategies should be abandoned for paid-media PSA campaigns. The present research examines this issue in a three-market field experiment comparing the effectiveness of "paid versus donated" PSA campaigns in decreasing youthful male drinking and driving. Dependent variables include (1) self-reports of behaviors from sample surveys and (2) official counts of incapacitating and fatal highway accidents. Results show that both campaigns were equally effective and both were cost efficient. Thus, in light of these results, it is recommended that social marketers not abandon donated-media PSA campaigns for paid-media PSA campaigns.

Public service announcements (PSAs) are a type of advertising, sponsored by either government agencies or other organizations, to promote causes and activities generally considered socially desirable (Garbett 1981). For example, Donovan and Leivers (1993) recently

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examined a PSA campaign's effect on racist beliefs. In addition to fighting racism, PSAs have also been used to combat a variety of other social problems, including drug abuse, high-risk sexual practices, drinking and driving, child abuse, illiteracy, decreased economic productivity, and battered women, to name just a few social problems being addressed with PSAs. Moreover, PSA campaigns have also been important fund-raising tools for charitable organizations such as the American Cancer Society.

Although PSAs are important tools in promoting social goals, their efficacy has been debated for over 4 decades (Hyman and Sheatley 1947; Mendelsohn 1973; Rothschild 1979; Salmon 1990; Singer, Rogers, and Glassman 1991; Wallack 1981). Many of the problems that have fueled this debate are caused by the inability of PSA campaigns to emulate expensive practices that are customary in better-funded consumer products' advertising campaigns (Bloom and Novelli 1981; Rothschild 1979). In this regard, the most obvious limitation is that PSA campaigns almost always rely on donated-media rather than paid-media schedules (Vingilis and Coultres 1990).

Some organizations that have traditionally relied on PSAs have become increasingly concerned about whether the problems associated with donated media outweigh the financial savings that these donations provide. This concern has prompted the U.S. Centers for Disease Control (CDC), the Surgeon General's Office, and the National Highway Traffic Safety Administration (NHTSA) to call for research to determine the relative impact of "paid versus donated" media campaigns on health behaviors (Donovan et al. 1991; Koop 1988; National Highway Traffic Safety Administration 1984). Like these government marketers, charitable organizations, such as the Red Cross, have examined the financial feasibility of using paid-media schedules for their fund-raising activities (Foltz 1989). These organizations believe they face an irreversible decision because once the media classifies them as "paid advertisers," they will be less able, and in the worst case unable, to obtain further donated media (Meyers 1988). Thus, the stakes are high in deciding to adopt a paid-media PSA strategy. Moreover, it is clear that more information is required about the advantages that a paid-media strategy might offer. The present research begins to fill this important gap by empirically evaluating the relative effectiveness of PSAs placed in paid versus donated-media schedules.

Reflecting the renewed interest in determining how mass communications can help address vexing social problems (Donovan et al. 1991; Hirschman 1991; Koop 1988; Marketing Science Institute 1992), this article begins by briefly reviewing the paid versus donated media issue in PSA campaigns. This is followed by a report on a multimarket field

Paid versus Donated Public

experiment that examined the role of paid media in PSA campaigns.

Background

This section briefly reviews historically had in targeting many government and private organizations, and PSA schedules.

PROBLEMS IN TARGETING ADVERTISING

By one estimate, PSA campaigns received more than 1 billion minutes of donated-media exposure in 1992 (Council 1992). However, leading because campaign results are often, or even whether target audiences. Instead, broadcaster PSA campaigns with less paying advertisers. Consequently, the campaign does not reach the target audience, compounded by the fact that repetition in order to be effective. Therefore, it is not surprising that these campaigns have limited success since they are not targeted audiences. Therefore, it is not surprising that these campaigns have limited success since they are not targeted audiences.

The recent "Partnership for a Drug-Free America" provides provocative data at health behaviors. Tracking illegal drugs and drug use below the level of donated-media advertising Agencies 1990). The experienced lower illegal donated-media coverage. Alternative explanations for these findings suggest that

experiment that examined the effectiveness of a donated-media versus a paid-media PSA channel strategy. The article concludes by discussing the implications this field experiment's findings have for the role of paid media in PSA campaigns.

Background

This section briefly reviews (1) the problems that PSA campaigns have historically had in targeting audiences, (2) the increased difficulty that many government and private organizations are experiencing in obtaining donated media, and (3) the financial feasibility of paid-media PSA schedules.

PROBLEMS IN TARGETING AUDIENCES

By one estimate, PSA campaigns receive over 3 billion dollars of donated-media exposure in the United States each year (Advertising Council 1992). However, the magnitude of these donations is misleading because campaign managers cannot control when, where, how often, or even whether targeted audiences are exposed to PSA messages. Instead, broadcasters and publishers have traditionally provided PSA campaigns with less desirable slots that they could not sell to paying advertisers. Consequently, much of the media donated for PSA campaigns does not reach intended audiences. This problem is compounded by the fact that difficult persuasion tasks, such as those undertaken in these campaigns, may require a sufficient level of message repetition in order to be successful (Pechmann and Stewart 1988). Therefore, it is not surprising that many donated-media campaigns have limited success since they often do not obtain the levels of repetition among targeted audiences normally required to bring about meaningful changes in behaviors (Rothschild 1979).

The recent "Partnership for a Drug-Free America" campaign provides provocative data about the influence of message repetition on health behaviors. Tracking studies revealed that attitudes toward illegal drugs and drug use behavior varied between cities in proportion to the level of donated-media exposure (American Association of Advertising Agencies 1990). Those cities with more donated-media exposure experienced lower illegal drug problems than those cities with less donated-media coverage. Although researchers can certainly raise alternative explanations for these nonexperimental data, at a minimum, these findings suggest that it is important to further examine the bene-

fits that may result if a targeted population is assured of receiving adequate exposure to PSA messages through paid-media schedules.

DECREASED AVAILABILITY OF DONATED-MEDIA SUPPORT

The donated-media support available for any one PSA campaign depends on both (1) the total or aggregate amount of donated media available for all campaigns and (2) the intensity of competition among different organizations for the donated media. As noted, PSAs are typically placed in those media slots not sold to advertisers. Consequently, both the quantity and quality of media exposure available for PSAs is inversely related to paying advertisers' media demand. This creates problems for implementing effective PSA campaigns because the available free media fluctuate with the general health of the economy (Lipman 1991).

Further, in the early 1980s, the Federal Communications Commission (FCC) relaxed its requirement when evaluating, for the purpose of license renewal, if a broadcasting station had indeed acted in the public interest. Whereas, formerly under a rigid "non-entertainment programming guideline," broadcasters were required to run PSAs for successful license renewal, there is currently no specific requirement to broadcast PSAs per se. Although broadcasters are still required to be responsive to the public interest, the means used to do so is not mandated (FCC 1981). Thus, changes in broadcast media regulation have also influenced the amount of "free" media available for all public information campaigns.

A second factor influencing the amount of donated media obtained is the large number of "good causes" seeking a finite amount of available free media slots (Mandese 1987). As mass media gatekeepers are inundated with requests for donated media and as competition for available PSA slots increases, it is increasingly difficult to convince the media of the virtue of any one PSA campaign. Consequently, the unparalleled support that the media currently provides for drug abuse and AIDS campaigns has made it much more difficult for many other organizations to gain the exposure levels they enjoyed 10 years ago (Foltz 1989; Singer, Rogers, and Glassman 1991). The importance of drug abuse and AIDS is beyond debate, but, the emergence of these two social problems does not diminish the importance of other social problems like drinking and driving. Further, given broadcast media deregulation, it is also unreasonable to expect the media as a whole to increase the total amount of free media. Taken together—the cyclical nature of the economy, changes in media regulation, and the increased competition for PSA slots—these circumstances have all made it more difficult for donated-media PSA campaigns to be successful.

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FINANCING PAID-MEDIA CAMPAIGNS

In the past, three different approaches have been used to fund the purchase of mass media schedules. First, several federal and state agencies include budget lines for mass media expenses. Although media budgets are uncommon at the U.S. Department of Health and Human Services or the National Highway Traffic Safety Administration (NHTSA), the U.S. Armed Forces, U.S. Postal Service, Amtrak, U.S. Immigration and Naturalization, and the U.S. Mint all have budgets for paid-media campaigns (Donovan et al. 1991). In fact, *Advertising Age* (1994) ranks the federal government as the thirty-fourth largest paid-media advertiser in the United States, spending some \$200 million annually in broadcast and print media.

Second, taxes have been assessed to "de-market" products with health risks. For example, a California cigarette excise tax finances mass media and other health education programs (Johnson 1990). Similar programs for alcohol, tobacco, or other health-related products could be collected through federal excise taxes to support paid-media campaigns. Third, corporations such as Converse and Johnson & Johnson provide financial support for several paid-media PSA campaigns (New York Times 1992), and tobacco and alcohol producers have become proactive with their own health education paid-media campaigns (Warner 1992). Therefore, although paid-media schedules currently constitute only a small part of all PSA campaigns, there are precedents indicating that paid-media schedules for PSAs are financially feasible.

Public service announcement campaign managers considering the use of paid-media PSA campaigns should evaluate the relative financial costs and benefits that paid schedules might provide. Whereas determining an appropriate dollar value to place on human suffering has long been a problem (Salmon 1990), in contrast, it is relatively straightforward to estimate the potential economic benefits that may result from successfully promoting many health-related behaviors. For example, a recent NHTSA (Blincoe and Faigin 1990) document reports that the average economic cost (e.g., medical costs, property damages, legal costs, etc.) of a single traffic fatality is just over \$2.6 million. Therefore, the 24,000 drinking-driving fatalities that occur each year (Koop 1988) have an annual economic cost to society of approximately \$62.4 billion dollars. Similar calculations show that costs associated with health-related outcomes and behaviors such as AIDS, smoking, or drug abuse also have large economic consequences. Important implications are (1) the financial benefits of many paid-media PSA campaigns can be evaluated and (2) due to the very high costs of some antisocial behaviors, campaigns need change only a small portion of behaviors in order to be cost-effective.

SUMMARY OF BACKGROUND REVIEW

Public service announcement campaigns have become an integral tool for promoting socially desirable behaviors; however, there has been a paucity of empirical research concerning the value of paid- versus donated-media PSA campaigns. Although armchair analysis may suggest that the time is right for switching from donated campaigns to paid PSA campaigns, firsthand experience evaluated by sound empirical research is what is needed at this point. Therefore, decision makers in both government and private sector organizations have called for field experiments examining the relative impact of paid- versus donated-media strategies.

Although the results of any individual field experiment will involve only one social issue or health problem, nevertheless, such results would begin to empirically address the larger issue of what role paid-media PSAs should play in addressing important social problems. As Donovan et al. (1991, p. 645) suggest, a study examining the relative effectiveness of a paid-media PSA schedule "would make a substantial contribution to resolving the broader issue of whether and how mass media should be used directly or indirectly to change or reinforce health-related behaviors."

Method

The drinking-driving problem provides an excellent context for examining the paid- versus donated-media question. First, each drinking-driving tragedy has large financial and human welfare consequences (Koop 1988). Second, the drinking-driving context presents a clear mass-media target in that 9 out of 10 teenage automobile accidents involve alcohol and, for 18-24-year-old males, drinking-driving accidents are the leading cause of death (Bowen 1988; Koop 1988). Finally, PSAs can potentially prevent youthful drinking-driving because they reach offenders not yet identified by the legal or alcohol-treatment systems. This distinction is important because 75 percent of all drinking-driving accidents are caused by drivers without prior drinking-driving offenses (Reagle 1988). Therefore, the present research was conducted to determine if a paid-media anti-drinking-driving campaign offered benefits beyond those found in a comparable donated-media campaign.

PSA MESSAGE DEVELOPMENT

The present study relied on lifestyle research (Lastovicka, Murry, and Joachimsthaler 1990; Lastovicka et al. 1987) to guide the development

of a mass media campaign for 18-24-year-old males who would have a spill-over effect on the more general population. Previous creative efforts were evaluated in a finding that young males who were thrill seekers. Young male drinkers would lead to negative consequences but they were controlled. Prior to producing the campaign, the ads were pretested in an intercept sample of 100. This pretesting led to six radio spots, on print ads. The "Juicy" creative award in 1991 led to the overall high

PSA CAMPAIGN EVALUATION

Quasi-experimental design versus donated-media. The real, on-air mass media campaign was comparable, geographically, and demographically. (1) self-report estimates of campaign and posttest of motor vehicle safety. This field experiment included a "paid-media" site.

The two types of campaigns were complementary but complementary. postsample survey (1979, p. 115) "was a very powerful change. To offset the negative effects were examined with a descriptive as a "multivariate" bell and Stanley (1986) test of quasi-experimental research design in media literature.

Public health communication strategies for HIV prevention: past and emerging roles

David R. Holtgrave

AIDS 1997, 11 (suppl A):S183-S190

Keywords: Mass media, HIV, AIDS, communications media, evaluation, cost and cost-benefit analysis

Introduction

For much of the general public, exposure to HIV prevention information comes in the form of news coverage and public service announcements. In at least three countries (Britain, Switzerland and the United States), every household has received a booklet of HIV-related information in national mailings [1,2]. Public information campaigns generally are seen as one key component of an overall, comprehensive HIV prevention program [3].

Although important, these standard and well-known uses of mass media reflect only a fraction of the potential of public health communication strategies. Public health communication has been defined as 'the use of communication techniques and technologies to (positively) influence individuals, populations, and organizations for the purpose of promoting conditions conducive to human and environmental health' [4]. Evidence of the diversity of public health communication strategies is to be found in a recent review of the field [4]. The review described five emerging areas of importance:

- (1) Social marketing (i.e. interventions, usually employing mass media, with clear objectives focused on the wants and needs of well-researched and well-defined audience segments);
- (2) 'Risk communication' (i.e. multi-directional dialogue about values and perceptions held by institutions and community members with the aim of achieving shared management of public health risks);
- (3) Media advocacy (i.e. the advancement of a public policy agenda via strategic use of mass media);

(4) Entertainment education (i.e. an enjoyable performance that aims to provide the audience with health-related information and skills);

(5) Interactive decision support systems (i.e. information sources that provide rapid and custom-tailored data for health-related decision making by individuals, groups and organizations) [4].

The first major purpose of the present review is to highlight very recent advances in these five areas as they specifically relate to HIV prevention.

When one thinks of the aims of HIV-related mass media efforts, it is often assumed that the proximal goal of a given campaign is to increase audience knowledge (primarily about HIV transmission), modify attitudes, or decrease risk behaviors, all with the ultimate, distal goal of decreasing HIV transmission. A recent review of communication campaigns on HIV-related issues emphasized that knowledge, attitudinal and behavioral goals can be conceptualized as individual level goals [5]. Other goals of communication campaigns may be at the group or community level [5]. Examples of group level goals include increasing communication and social ties among community members [5]. Community level goals also include changing the HIV/AIDS policy agenda, modifying community norms regarding risk behaviors, increasing solidarity with persons infected and affected by HIV, reducing disease incidence, and enhancing volunteerism for HIV-related services [5]. A given campaign may (and some would argue 'should') have goals at multiple levels [6].

The second major purpose of the present review is to describe how recent mass media efforts have gone beyond individual goals to attempt to achieve some emerging group and community level goals.

From the Center for AIDS Intervention Research, Medical College of Wisconsin, Milwaukee, Wisconsin, USA.

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The review of HIV-related communication campaigns also examined all empirical efforts (then available) to evaluate the ability of planned mass media efforts to achieve their goals [5]. Most of these empirical efforts focused on knowledge, attitude and behavioral outcome measures. Because the *XI International Conference on AIDS* in Vancouver included presentation of several more such empirical evaluations, the third major purpose of the present review is to update the previous summary of evaluations of communication campaigns in HIV prevention.

For ease of exposition, I accomplish these three major purposes in reverse order. Due to lack of space, I will not discuss important measurement and evaluation study design issues in detail, nor will I discuss any interventions that deal with only one or very small groups of participants; rather I refer the reader to overviews in these areas [1,6-8]. I will briefly conclude with additional challenges and roles for communication campaigns in HIV prevention.

Empirical evaluations of communication campaigns

In 1995, Flora *et al.* [5] used electronic database searching and reference tracing techniques to identify empirical outcome or impact evaluations of planned, HIV-related, mass media campaigns. They sought to include all (English language) studies in which data were collected to help determine whether the campaign met its stated goals (whatever the goals may be). They excluded studies that were formative or process evaluations only. Thirty-four studies from 13 different countries met the inclusion criteria. Because most of the studies were reported only as abstracts, little information could be obtained about the details of the campaign or its theoretical basis. Less than five studies employed a control group design (because of the lack of methodological detail in some abstracts, this number can not be stated precisely).

In the fall of 1996, this literature review was updated. Electronic database searching and reference tracing methods were employed; these techniques are excellent for locating articles and some abstracts, but they unfortunately tend to overlook some books, chapters and reports. The combined results of the review and the previous one are displayed in Table 1. Fifteen additional studies were identified, 12 of which were presented at the *XI International Conference on AIDS*. The new total of 49 studies in the literature now spans 18 countries. This represents a substantial increase in the size of the literature in just 1 year. Of course, since most of the new studies are available only as abstracts, the detail available is strictly limited and it is virtually impossible to summarize the components of the campaigns. It appears that

virtually none of the studies presented at the Vancouver conference employed control groups designs; most employed pre-post designs, post-test only designs, or time series strategies.

Most of the studies focused on individual level goals of knowledge, attitude or behavior change. Generally programs with the goal(s) of knowledge, attitude or behavior change were successful at achieving their goal(s).

Although this review focuses on outcome and impact evaluation, a comprehensive program evaluation should also include formative and process evaluation components. Methodological discussions of these topics are available [1,6,57], as are innovative examples of their application [58,59]. In addition, Wellings [6] describes the numerous methodological difficulties inherent in attempting to compare outcome and impact evaluations across different campaigns. Her paper is an excellent description of a European Community Concerted Action Programme to contrast and compare HIV prevention interventions for the general population in various geographical areas. A book-length version of the European Community Concerted Action Programme's overview is due to be published this year [60].

Group and community level goals

The final column of Table 1 indicates 'other' goals addressed in some of the empirical evaluation studies. A few of these goals meet the definition of group and community level goals adopted by Flora *et al.* [5]. For instance, several of the studies examined the community level goal of decreased HIV or sexually transmitted disease incidence.

Other studies examined the group or community level goal of media coverage induced by the planned communication campaign (hence, the behavior of the media becomes an outcome measure). There is also a large, related literature on AIDS coverage by the media (regardless of whether some planned communication campaign influenced the coverage or not). For example, a Swiss study systematically examined AIDS coverage by the print media for the period 1988-1990 [61]. During that time, the number and size of articles decreased slightly, and the content changed. For instance, in 1988, the topic of prevention was frequently treated in isolation, then it was progressively incorporated with other themes in subsequent years, generally as a reminder of the importance of prevention and the means by which one can avoid infection [61].

Some studies (Table 1) have assessed the monetary value of donated airtime for public service announcements. Unfortunately, there are no true studies of the cost-effectiveness of planned communication campaigns

Table 1. Empirical studies of planned HIV prevention mass media campaigns.

First author [reference]	Population	Primary channel	Outcome measure			
			Knowledge	Attitude	Behavior	Other
United States						
Gerbert [9]	General	Mailing				Recall of exposure to message
Bryce [10]	General, IDU	Mass media			+	Seek information; obtain services
Gentry [11]	General	TV, radio				Dollar value donated airtime
Keiser [12]	General	TV, radio				Media coverage
Snyder [13]	General	Mailing	+/-	o	o	Perceived risk
Woods [14]	General	TV, radio				Dollar value donated airtime
Caron [15]	College students	TV, radio		+	+	
Campsmith [16]	Adolescents	Print, radio			+	
Australia						
Ross [17]	General	Mass media		+		
Rigby [18]	General	TV	o	o		
Ross [19]	General	TV		+		
Bray [20]	General	TV	o	o		Anxiety
Brazil						
Fox [21]	Urban adults			+		Awareness, concern, perceived risk
Bulgaria						
Chileva [22]	General	Print				Media coverage
Colombia						
Garcia [23]	General	TV, radio, print				Seek services
France						
Moatti [24]	General adults	General media	+	+/-	+	Perceived risk
Pele [25]	General, gay men	TV, print		+		
Speisser [26]	General	Print, radio		+		
Gambia						
Sekou [27]	General	General media			+	
Germany						
Toppich [28]	General	Mass media			+	
India						
Wessels [29]	Youth	TV, radio, print	+			
Italy						
Bortolotti [30]	Drug users	Print			+	HIV seroconversion
Luzi [31]	General	TV, print	+		+	
Nurra [32]	General					Seek services
Japan						
Maeda [33]	Young adults	Mass media	+	+	+	
Hirose [34]	General	TV, print				Seek services
Mexico						
Izazola [35]					+	
Sepulveda [36]	General	Press, mass media	+	+	o	
Helguera [37]	General	Multiple				Social response
The Netherlands						
de Vroome [38]	General, high risk	Multiple	+		+	Condom sales, STD incidence
de Vroome [39]	General, high risk	Multiple	+	o	+	
Philippines						
Margo [40]	General	Multiple	+	+		Perceived risk
Switzerland						
Lehmann [41]	General	Print	+			
Hausser [42]	General	TV, print			+	
Dubois-Arber [43]	General	General media			+	
Stutz Steiger [44]	Clients of prostitutes	Print			o	
Wasserfallen [45]	General	Mass media			+	
Dubois-Arber [46]	General	Multiple	+	+	+	
Uganda						
Salaamu [47]	Youth, parents, teachers	Mass media	+			Cultural taboo
United Kingdom						
Weller [48]	Men	TV, print				Gonorrhea incidence
Mills [49]	General	TV, print	o		+	
Sherr [50]	General		o			Anxiety
Campbell [2]	General	TV, mailing	+			
Wober [51]	General	TV, print, radio	+			
Beck [52]	General	TV, print			+	
Lowbury [53]	General, high risk	TV, print, internet	+			HIV, STD incidence
Zaire						
Rukarangira [54]	General	Mass media	+			
Kyungu [55]	General	TV	+			
Kaseka [56]	General	TV, radio	+		+/-	HIV incidence

Updated from Flora *et al.* [5] by adding 15 new studies. '+' indicates that the program met the goal; 'o' indicates that the program tried but was unable to meet the goal; blank space indicates that the goal was not part of the campaign's purpose. IDU, injecting drug user; STD, sexually transmitted disease.

related to HIV issues, although such analyses would be useful for decision makers who must allocate resources [6]. A first step in this direction has been taken by studies that assess the cost, if not cost-effectiveness, of delivering various types of communication campaigns [62,63].

Another community level goal is reduction of discrimination against persons living with HIV infection or whose behaviors may put them at risk for infection (e.g. men who have sex with men). One study that met the inclusion criteria for Table 1 [25] determined that a communication campaign was important in reducing discriminatory attitudes towards homosexuality in France. Although not included in Table 1, there are other important, available descriptions of mass media efforts with the goal of reducing stigma (or increasing solidarity) in the countries of Peru, India, Germany, Australia and Switzerland [64-68]. For instance, a program in Germany [66] found that in 1987 one-third of the general population felt that persons living with AIDS should be isolated, and four-fifths of the population was not willing to assist persons living with HIV infection. A communication campaign has helped to alleviate such attitudes, according to the abstract [66]; however, no quantitative statements of effect size are readily retrievable.

Five areas of public health communication: an update

Social marketing

Social marketing strategies are probably the most well-developed of public health communication approaches [4]. These approaches have been used to address a wide variety of public health issues, including contraception, cardiovascular health, child health, and condom promotion [4]. Recently, the US Centers for Disease Control and Prevention (CDC) has begun a campaign labeled 'The Prevention Marketing Initiative' (PMI) based on social marketing principles [69]. PMI targets young adults. Its primary objectives are to delay sexual activity and promote the use of condoms among sexually active youth. PMI was developed partially in response to an external evaluation of CDC's mass media efforts; the external review suggested that CDC focus its mass media efforts on persons at elevated risk of infection [70]. The public service announcements developed under PMI were successful in increasing calls to the CDC National AIDS Hotline, achieving substantial media placement and donated airtime, and generating news coverage [69]. Consistent with the consumer orientation of social marketing principles, CDC has linked with five sites to serve as local PMI demonstration sites, developing their own social marketing programs of local relevance. These demonstration sites are the subject of intensive evaluation [71]. At this time, it is still unknown to what degree PMI will achieve its ultimate, stated, behavioral goals.

Social marketing strategies for HIV prevention have been employed in several countries: Mexico [72], the Dominican Republic [73], Canada [74-76], Brazil [77], Vietnam [78], and Haiti [79-82]. For instance, a condom social marketing program in the Dominican Republic [73] focused on commercial sex workers. The program used a variety of components: stickers for brothel walls, the *Maritza* comic books in which a commercial sex worker successfully reduces HIV risk, peer education activities, and the 'Mario' comic book that discusses condom use in a 'macho' manner.

Risk communication

Largely employed in environmental health arenas [4,83], 'risk communication' processes emphasize multi-directional dialogues between governmental institutions, industrial firms, and community groups and members. The ultimate goal is a democratic and equitable joint management of risks such as hazardous waste.

Although not usually labeled as a communication strategy, it could be argued that HIV Prevention Community Planning in the United States actually fosters a type of risk communication process. Community planning brings community groups and members infected and affected by HIV into the process of planning local HIV prevention programs [84-86]. Community planning groups prepare local epidemiological profiles, assess unmet prevention needs, prioritize these needs, identify prevention strategies to meet these needs, prioritize the prevention strategies, and review health department plans to allocate resources so as to ensure that actual expenditures are in line with community planning priorities. Key principles in community planning are inclusion (ensuring that all relevant groups are part of the process), representation (ensuring that the person who is supposed to speak for a community group actually does so), and parity (ensuring that each person at the community planning table has the necessary skills and opportunities to participate fully in the process). These principles are remarkably consistent with key aspects of risk communication. Early empirical evaluations of HIV prevention community planning efforts indicate that in many US jurisdictions, the goals of inclusion, representation and parity are being achieved [85-88].

The use of democratic principles in HIV-related public health policy also has been employed in other countries such as The Netherlands and Australia [89]. In addition, the related principle of client participation is central to program evaluation activities; one example of an evaluation in which this principle was employed was the assessment of a National AIDS Prevention Program for migrants in Switzerland [90].

Media advocacy

Media advocacy is the advancement of a public health policy agenda via strategic use of the media [4,91]. Before the policy agenda can be advanced, access to the media must be gained. Media access can be paid for, or it

can be earned (perhaps by staging newsworthy events, or by conducting and publicizing relevant research). One example of media advocacy has been the successful strategic campaign launched by the National Heart Savers Association against the US food industry for the use of tropical oils in their products [4].

Media advocacy has great potential for the promotion of important policies in HIV prevention. Public policy may be considered a type of HIV prevention intervention [92]. One area of possible application relates to the ban on US Federal funding for needle and syringe exchange programs (NSE). Data suggest that NSE are an effective and cost-effective harm reduction strategy for reducing HIV transmission among injecting drug users and their partners [93,94]. Some key policy makers have noted this analytic evidence yet stated their belief (not supported by data) that NSE lead to increased drug use; hence, they maintain their opposition to NSE. A recent news report states that former US Surgeon General Jocelyn Elders says the Administration was prepared to lift the ban on NSE funding until the US Congress was taken over by a Republican majority in 1994 [95]. A media advocacy effort could attempt to gauge (and possibly inform) public opinion on NSE, and then proceed to focus on policy makers themselves. Media advocacy has been successfully employed in The Netherlands and Switzerland to assist firms in avoiding potentially discriminatory testing policies for job applicants [61,89].

Entertainment education

Entertainment education might be labeled simply as fun with a purpose. Health-related messages may be woven into new or existing television or radio programs. One popular avenue for such messages have been soap operas [4]; for instance, one soap opera in Mexico promoting adult literacy attracted an audience of approximately one-third of all television viewers. A pro-development soap opera in India was the most popular telecast of the entire year [4]. Beside using television and radio, entertainment education may be incorporated into live theater [90,96], folk story telling, computer programs, and print media.

Several examples of entertainment education were presented at the *XI International Conference on AIDS* [65,97-99]. In the United Kingdom, the British Broadcasting Corporation teamed up with the Terrence Higgins Trust (a major AIDS service organization) on the storyline of the soap opera 'EastEnders'. The soap opera attempted to realistically portray people living with HIV. The soap opera has improved public understanding of HIV-related issues, increased knowledge and increased voluntary HIV testing [97]. A traditional Thai genre of song and drama was used to convey HIV-related messages to villages in non-urban areas of Northeast Thailand [98]. A project in India used docu-drama films to portray some challenges of living with HIV and AIDS [65]. In Australia, improvisational dramatic theater was used to assist development and education of the Brisbane gay community [99].

Interactive decision support systems

With the emergence of electronic communication channels and databases, a number of systems have been developed that can provide customized, timely information suitable for helping individuals, communities and organizations to make health-related decisions [4]. At CDC alone, some online, interactive databases include those focused on surveillance data, publications and statistical software programs [4].

In the last year [4], a number of interactive decision support systems relevant to HIV prevention have become available. Primarily, these are resources available on the World Wide Web. Some of the useful sites available for persons from around the globe seeking HIV-related information are the Joint United Nations Programme on HIV/AIDS (<http://www.unaids.org/>), the Office of HIV/AIDS and Sexually Transmitted Diseases, World Health Organization (http://www.who.ch/programmes/asd/asd_home.htm), the Center for AIDS Prevention Studies (CAPS), University of California at San Francisco (<http://www.epibiostat.ucsf.edu/capsweb>), and the Division of HIV/AIDS Prevention, CDC (http://www.cdc.gov/nchstp/hiv_aids/dhap.htm). Together, these sites provide a great deal of information about HIV prevention interventions, research, curriculum, publications, funding opportunities, links to service organizations, surveillance data, and policies. With a few clicks of a computer mouse, the person searching these sites can access a wide variety of important information, search it for specific areas of interest, and print out a customized set of up-to-date and relevant information. While it is nearly impossible to know exactly how such World Wide Web sites are used by people in their decision making about various HIV-related matters, the demand for such sites is high. These sites are visited thousands of times per month by users. Furthermore, users of the CAPS site were invited to leave comments regarding the utility of the site and have indicated that they found the information at and linkages from the site to be important for their work [100].

Further challenges and emerging goals

Besides the issues discussed above, there are several other important matters regarding the role of public health communication and mass media usages in HIV prevention.

Community planning groups and the use of mass media

Above, it has been noted that HIV prevention community planning and other participatory, democratic approaches to public health policy setting may be considered an implementation of risk communication principles. An important, related issue is that these participants in decision making must consider how to prioritize HIV prevention interventions, including mass

media and other communication campaigns. It is important that participants in policy making understand the various types of communication campaigns available, the relative merits of each, and the roles that each could play in a comprehensive HIV prevention program [6,96]. Documents such as this review can fill only a small percentage of these information needs. Fortunately, in some countries a system is in place by which participants in decision making can access technical assistance on social marketing and other communication interventions. This technical assistance is extremely important. However, community planners and other policy makers must also be challenged to consider all of the possible roles and goals of mass media efforts. For instance, in a given region, it may be important to consider the use of a novel mass media campaign to combat discrimination against persons infected with HIV and those at risk of infection. Meeting the information needs of those who actually allocate HIV prevention resources will require increased attention to cost-effectiveness evaluations of mass media efforts. Research in this area is urgently needed.

New knowledge and attitudinal challenges

Not long ago, it was empirically shown and generally accepted that knowledge about HIV transmission modes and protective behaviors was high in many countries [6,101]. However, new challenges about knowledge levels have arisen. First, studies have found that some persons whose behavior places them at risk of infection still have basic misconceptions about HIV transmission and prevention [102]. Second, as new generations of children and adolescents develop, they too require some basic HIV-related information. In addition, some attitudes of the young can place them at risk of infection. For instance, some young gay men believe that HIV is a disease of older gay men and is therefore not relevant to them [103]. These knowledge and attitudinal challenges require that we take an intergenerational, developmental view to communication campaigns. Third, the exciting promise of new drugs [104] for treating HIV disease have led to some confusion. Anecdotal evidence suggests that some people believe that there is now a cure for AIDS and that they need no longer worry about HIV infection or transmission. This complacency could lead to increases in risk behavior and infection. Communication campaigns must make it clear what the new therapies can and cannot accomplish, and what side-effects are possible; they might also emphasize the costs saved by society each time an HIV infection is prevented.

Increased role of private sector in the mass media

It has been recognized that the private sector sometimes can provide more explicit HIV prevention messages than governments [6]. Now, with the introduction of home-based HIV testing services, the private sector takes on a new mass media role, advertising their own prevention services. Important issues to monitor in the future are how these advertisements portray HIV prevention messages, how they contrast their offered services with

publicly-funded services, and when they are aired *vis-à-vis* HIV prevention public service announcements. A related, more general area of needed research would study how to optimally train private-sector health professionals to effectively work with the media to convey HIV-related messages.

In conclusion, public health communication strategies applied to HIV prevention will take on modified and new roles in the future and will require ever more careful evaluation. Their strategic importance in comprehensive HIV prevention programs will only increase.

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