Atkin, C. K. & Rice, R. E. (2013). Strategies and principles for using mass and online/digital media in health communication campaigns.
In D. K. Kim, A. Singhal, & G. Kreps (Eds.), *Health communication: Strategies for developing global health programs* (pp. 13-36). NY: Peter Lang.

Chapter 1

# Strategies and Principles for Using Mass and Online/Digital Media in Health Communication Campaigns

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## Introduction

Sophisticated public communication campaigns using mass and online media apply social science theories to strategically affect audience awareness, knowledge, attitudes and ultimately behavior across a variety of public service domains, most notably in health contexts. The following sections describe eight main strategies and principles for increasing their effectiveness: campaign design framework, formative evaluation, dual approaches, types and mix of messages, message content and style, mass media and online/digital communication channels, quantitative media dissemination factors, and summative and process evaluation.

## 1. Develop a Campaign Design Framework Based on Situation Analysis, Target Audiences and Behaviors, Models of Influence Pathways, Major Theories of Communication and Persuasion. These Provide the Foundation for the Nature of the Messages and Media Used in the Campaign

The initial step in campaign design is a conceptual examination of the situation to *determine opportunities and barriers* and to *identify specific outcome behaviors* of *specific subgroups of the public*. The second step is to trace backwards from the outcomes to identify their *proximate and distal determinants* (especially the role played by the mass media but also of societal and situational constraints), and then create *models* of the pathways of influence via attitudes, beliefs, knowledge, social influences, and environmental forces. The next step is to specify *goal (target) audiences* and *goal behaviors* that can be directly influenced by campaign messages and interventions.

A variety of *theoretical frameworks* is available to guide campaign design (Atkin & Rice, 2013; Glanz, Rimer, & Viswanath, 2008). The most comprehensive conceptualizations applied to campaigns are the communication-persuasion matrix and the social marketing framework. McGuire (2013) developed a classic *communication-persuasion matrix* featuring an input-output model; the five communication *input variables* include source, message, channel, and audience, and the *output process* proceeds through 13 stages from exposure through processing, learning, yielding, behavior, and integration, to encouraging others. This framework emphasizes the centrality of formative evaluation (discussed below) in selecting source messengers, designing mediated messages, and identifying the goal audience's media patterns (see Section 2).

*Social marketing* emphasizes an audience-centered consumer orientation and uses the media to attractively package the social product and to focus campaign strategies on attaining pragmatic goals (Kotler, Roberto, & Lee, 2002; McKenzie-Mohr, 2010). These goal responses vary in palatability associated with degree of effort, sacrifice, and monetary expense; a central strategic consideration in determining the degree of difficulty is receptiveness of the focal segment. Other key features are the multifaceted conceptions of product, costs and benefits, as well as audience segmentation, policy change, and competition. A valuable resource is the Centers for Disease Control and Prevention's online course for social marketing for nutrition, physical activity, and obesity-prevention programs, which covers problem description, formative evaluation, strategy development, intervention design, evaluation, and implementation (Detailed information available at CDC's website: http://www.cdc.gov/nccdphp/dnpa/socialmarketing/training/). The Social Marketing Institute develops social marketing campaigns based on marketing practices, and offers resources for carrying out and disseminating research, training and educating organizations, and sponsoring academic research (http://www.social-marketing.org/index.html).

*Community-based prevention marketing* is conducted within and guided by a social marketing perspective, emphasizing product, price, place, and promotion, competitive analysis (current risky behaviors), audience segmentation (to tailor the message and exchanges to specific groups in the community), formative evaluation (especially concerning the local audience's viewpoints), and ongoing monitoring and tracking evaluation (via surveys, measures of media exposure, website hits), that seeks satisfying exchanges (low social costs for changing behavior that fosters benefits) between promoter and audience (community members) (Bracht, 2001; Bryant et al., 2009; McKenzie-Mohr, 2010). Croft et al. (1994) described how a comprehensive community-based nutrition intervention to reduce risk of cardiovascular disease included community classes, grocery store tours, a supermarket point-of-purchase program, a restaurant labeling program, speakers' bureaus, home study courses, worksite nutrition programs, and mass media coverage (such as local radio and TV public service announcements, talk shows, and newspaper articles).



Focusing specifically on message design, the *message framing* theoretical approach (Quick & Bates, 2010) proposes message appeals with gain-frame promotion of positive behavior vs. loss-frame prevention of negative behavior (such as in fear-appeal campaigns; Yzer, Southwell, & Stephenson, 2013). Appropriate message framing (gain- versus loss-oriented) emphasizes the benefits and costs of prevention or detection/treatment, especially when matched to the goal audience's orientation (e.g., risk aversion, based on *perceptions* of and *sensitivity* to the possible outcomes of action or non-action, short-term and long-term) (Rothman, Bartels, Wlaschin, & Salovey, 2006). Very broadly, gain-framed messages are more appropriate for prevention, while loss-framed ones are more appropriate for detection/treatment, especially when goal audience members are involved with (or are encouraged to attend to) the particular issue (e.g., breast cancer screening), partially because they are more likely to engage in systematic processing. In particular, the advantages of gain-framed messages appear to accrue to promoting prevention behaviors, but not for attitudes, intentions, or detection (Gallagher & Updegraff, 2012).

Other frequent theoretical approaches include *social cognitive theory* (Bandura, 1986), the *theory of reasoned action* and the *theory of planned behavior* (Ajzen, Albarracin, & Hornik, 1997), the *diffusion of innovations* model (Rogers, 2003), and the *transtheoretical (stages of change) model of health behavior* (Prochaska & Velicer, 1997).

## 2. Perform Formative Evaluation by Gathering Information about Audience Predispositions, Channel Usage Patterns, Evaluation of Prospective Messengers and Appeals, and Social Structure Constraints, and Pretest Responses to Preliminary Versions of Messages

*Formative evaluation* research is necessary to identify and understand the goal audiences, which tend to differ in media use (channels, genres, fre-

quency), involvement in the issue, information-retention, attitudinal orientations, at-risk behaviors, at-risk conditions, demographic and socio-psychological characteristics (for example, gender, sensation-seeking, promotion orientation), location, sources of social influence and support, temporal variations, constraints from peers, culture, and societal structures (Atkin & Freimuth, 2013; Centers for Disease Control and Prevention, 2009; National Cancer Institute, 2009; Noar, 2006; Rice & Foote, 2013).

The first stage of formative evaluation involves *pre-production information gathering* to learn more about the situation and audiences. Databases, focus groups, personal interviews and observations, and custom surveys help to provide useful understanding and insights into audience predispositions. For example, formative evaluation for a campaign to reduce HIV-associated risk behaviors among African-Americans identified three major salient messages (Romer, et al., 2009). The analysis also uncovered "counter-narratives" that might allow the audience to resist dominant arguments and myths fostering risky sex (i.e., disassociate the belief that condoms reduce pleasure, waiting to initiate sex is a sign of respect, and use condoms even with steady partners). These insights provided the basis for developing dramatic depictions of modeling these narratives (somewhat similar to entertainment-education campaigns) in campaign spots via radio and television channels popular among the goal audience, for 15 months.

The other primary area of information gathering is about patterns of usage of specific media—typically amount of time viewing television, listening to radio, and reading print publications, and exposure to specific channels such as cable networks, local radio stations, and newspapers and magazines. These include circulation audits for print circulation and readership, pass-on readers, impacts and impressions (Audit Bureau of Circulation, Mediamark Research Inc.); ratings, households, reach, share, frequency, duration, impressions, loyalty for mass and online media and ad tracking (Arbitron, Burrelle's or Nielsen; Audience Dialogue, www.audiencedialogue.net; Webster, Phalen, & Lichty, 2006); media use and consumption patterns (Claritas' PRIZM segmentation, Simmons Market Research); ad viewing and attention (e.g., Starch Readership), recognition and recall; website navigation patterns and stickiness, website postings, email prompts, and social media links, likes or retweets (Alexa Internet, Google analytics, Twitalyzer; Danaher, Boles, Akers, Gordon, & Severson, 2006).

The second stage of formative research involves *pretesting* of rough versions of specific prospective media messages to stimulate qualitative reactions in focus group or in-theater sessions and to measure quantitative ratings in message testing labs. Pretesting helps to determine whether the audience regards the message content and style positively (e.g., informative, believable, motivating, convincing, useful, on-target, enjoyable) or negatively (e.g., preachy, disturbing, confusing, irritating, dull). Pretesting can detect problematic elements that may trigger psychological reactance, which can lead to boomerang effects that reinforce counter-productive behaviors (Fishbein et al., 2002; McGuire, 2013).



### 3. Utilize Dual Approaches in Using Media for Attaining Impact in Order to Achieve Direct Effects on Focal Segments of Audiences and Exert Influence Indirectly via Interpersonal Influencers and Policy Makers

Mass media campaigns must diversify the pathways of impact, including purposely activating multi-step flows. Most mass media campaigns aim messages *directly* at the *goal audiences*, such as at-risk subpopulations that might benefit most from the campaign. Campaigns often seek to attain impact by using either behavior-triggering or attitude-reinforcing media messages designed for people who are already favorably predisposed (e.g., applying the transtheoretical model). Another key audience segment is composed of those who have not yet tried the undesirable behavior but whose background characteristics suggest they are prone to do so soon. Goal audience segments that are already committed to unsuitable practices are high in priority but not readily influenced by directly targeted media-based campaigns. Other ways of subdividing the overall population for purposes of targeting via mass media include demographic or socio-psychological-based subgroups (e.g., higher- vs. lower-income strata, high vs. low sensation seekers, lifestyle categories), subgroups experiencing social obstacles in accomplishing certain behaviors, and members of different cultures.

There are two basic *indirect* influence strategies used in campaigns. One approach is to initiate a multi-step flow by disseminating messages to potential *interpersonal influencers* who are in a position to personally influence goal audience individuals (Rogers, 2003). Opinion leaders tend to be receptive to media campaign messages, and they can customize messages to the unique needs and values of individuals, and the relevant social norms, in a more precise manner than mediated messages (Rice, Wu, Li, Detels, & Rotheram-Borus, 2012; Valente, 2012). A more macro-oriented indirect in-

fluence campaign approach provides messages to *societal and organizational policymakers* who are responsible for devising constraints and creating opportunities that shape focal individuals' decisions and behaviors. In the past quarter century, reformers have successfully combined community organizing and media publicity to advance healthy public policies via *media advocacy* (The Berkeley Media Studies Group, http://www.bmsg.org/; Dorfman & Wallack, 2013). This approach typically frames public health issues by emphasizing policy-related systemic and societal solutions rather than individual responsibility for good health. News coverage of the campaign and its issues can shape the public agenda, and the policy agenda pertaining to new policy initiatives and rule-making.

### 4. Determine the Appropriate Mix of Informational and Persuasive Messages in Campaigns Based Primarily on Audience Predispositions

There are two basic kinds of *informational* messages. *Awareness* messages typically offer relatively simple content that informs people about the prevalence and risk of the issue and what behaviors to perform, specifies which segments should do it, or provides cues about when and where it should be done (e.g., a radio spot that reminds drivers to buckle safety belts in icy conditions). These awareness messages can stimulate the audience to pursue additional, more detailed content from resources such as web pages, books, or opinion leaders. *Instructional* messages present more complex "how to do it" information in campaigns seeking knowledge gain or skills acquisition (e.g., a magazine feature story that presents recipes for healthy dinners), along with messages specifically designed to enhance personal efficacy (e.g., bolstering resistance to non-complying peers).

The other type of message is the *persuasive* appeal, which features influential reasons why the audience should adopt an advocated action or avoid a proscribed behavior. This generally involves mechanisms of attitude creation or change, usually building on knowledge gain and belief formation (e.g., smoking-cessation TV spots designed to strengthen beliefs about severity of health harms, which in turn may alter attitudes toward tobacco use). For audience segments that are already favorably inclined, the campaign has the easier persuasive task of *reinforcing* existing predispositions (e.g., motivating behavioral maintenance). Because prolonged campaigns disseminate a broad array of persuasive messages, strategists typically marshal a variety of appeals.



### 5. Create Qualitatively Sophisticated Messages Featuring Credible Content, Engaging Style, Relevant Portrayals, Understandable Exposition, and Persuasive Incentives

Based on the formative evaluation discussed in Section 2, message design for mass media campaigns involves the strategic selection of substantive material and creative production values that emphasize one or more of five key qualitative factors (Atkin & Rice, 2013; Cho, 2012). *Credibility* refers to the believability of message content, as conveyed by convincing evidence, the trustworthiness and competence of the source (persons, characters, organizations) appearing in the message or the media vehicle disseminating the message (Metzger, Flanagin, Eyal, Lemus, & McCann, 2003). Second, the ideas and manner of presentation should be *engaging*, by using stylistic features that are attractive and entertaining, along with substantive content that is interesting or emotionally arousing.

Third, the presentation should include elements to boost personal *relevance*, so receivers regard the subject matter as applicable to their situation and needs. Next, the *understandability* of the message contributes to recipient processing and learning, provided that the material is presented in a comprehensive and comprehensible manner that is simple, explicit, and sufficiently detailed. The fifth and final qualitative factor involves *persuasive incentives*, notably motivational appeals to influence the audience. Note that all these factors are explicitly considered in the McGuire (2013) hierarchy-of-effects model. Persuasive media messages often utilize a basic expectancy-value mechanism through which content affects beliefs regarding the subjective likelihood of each outcome occurring and the severity of its consequences. The operational formula for preventing undesirable behaviors is *vulnerability* x *severity*, which is central to many fear appeals (Yzer, Southwell, & Stephenson, 2013).

For campaigns in the health domain, the array of *incentives* includes not only physical health, but time/effort, group, moral, legal, economic, social, psychological and aspirational aspects. Rather than over-emphasizing the narrow domain of negative health threats such as death or illness, campaigners diversify by including both negative appeals (e.g., psychological regret or social rejection) and positive incentives (e.g., physical well-being or saving money) (possibly using the prevention/promotion framing approach). Regarding the number of different incentives, it is generally advantageous to use multiple persuasive appeals across a series of messages in a campaign,

particularly when seeking to influence varied audiences. In conveying incentive appeals, campaign designers often provide evidence to support claims made in messages. The most effective type of evidence varies according to characteristics of the medium (e.g., short, image-oriented video, more informative audio, and interlinked multi-media online) and to audience predispositions and characteristics. For example, audiences who are knowledgeable tend to be more influenced by messages citing statistics (as in print or online media) or quoting technical experts, whereas dramatized case examples and testimonials by celebrities (as on television or online videos) work better for low-involvement audience segments (Perloff, 2003).

Message sources also convey qualitative features in media campaign messages. The *source messenger* appears in broadcast and print messages to provide information, demonstrate behavior, or present a testimonial. These messengers help enhance each qualitative factor by being *engaging* (displaying attractiveness or likability), *credible* (conveying trustworthiness or expertise; but are also affected by media credibility characteristics), and *relevant* to the audience (demonstrating that they share attributes similar to receivers). These qualities can attract audience attention and facilitate comprehension by personalizing abstract concepts, eliciting supportive cognitive responses during processing, heightening emotional arousal via identification or transfer of affect, and increasing retention and recall due to memorability and cues. The key categories of messengers appearing in mass media campaign messages are celebrities, public officials, topical expert specialists, professional performers, ordinary people, specially experienced individuals (e.g., victims or beneficiaries), unique characters (e.g., animated or costumed), and organizations (via a brand or logo).

## 6. Select the Mass Media and Online/Digital Communication Channels that Are Most Appropriate for Reaching and Influencing Key Audience Segments

### *Mass and local media*

In assessing each option for channeling campaign messages, campaign designers take into account myriad advantages and disadvantages along a number of communicative dimensions. Atkin and Salmon (2010) discuss channel differences in terms of *reach* (the proportion of population exposed to the message), *specialization* (enabling basic targeting to specific subgroups or



precise tailoring to individuals), *intrusiveness* (capacity for commanding attention), *personalization* (human relational nature of source-receiver interaction), *depth* (channel capacity for conveying detailed and complex content), *credibility* (believability of material conveyed), *agenda-setting* (potency of channel for raising salience priority of issues), *accessibility* (ease of placing messages in channel), and *economy* (low cost for producing and disseminating stimuli). Determining the most appropriate channels is based on budget, audience usage patterns, and the nature of the message, determined through formative evaluation (Section 2). Huge budgets for commercial spots on television and radio are no guarantee of success, however. Note, for example, the apparent failure of the extensively mass-mediated National Anti-Youth Drug campaign (Hornik, Jacobsohn, Orwin, Piesse, & Kalton, 2008), although other analyses have found specific positive results, especially for girls, high sensation seekers, and in combination with school-based prevention programs (http://www.whitehouse.gov/ondcp/Campaign-Effectiveness-and-Rigor).

*Community campaigns* use local media (from radio stations to social service center posters and brochures) to provide exposure to messages developed with community members (Bracht, 2001). The practice of *entertainment-education*, which involves embedding campaign topic-related material in entertaining contexts, has demonstrable potential for impact but low implementation in the US media compared to developing countries (Singhal, Cody, Rogers, & Sabido, 2004). The main problem in gaining visibility for health topics in the entertainment media is lack of access to popular vehicles, partially due to low campaign budgets and relatively dull subject matter. More subtle challenges include differing norms and goals between commercial and research professionals, as well as concerns by commercial broadcasters about advocacy and industry or sponsor critique. Thus an important potential audience for health messages is new scriptwriters for films, television, and online video, who can then apply entertainment-education resources within media programming (Beck, 2004). For example, see the evaluation of the treatment of organ donation in the primetime drama *Numb3rs*, sponsored by USC's Hollywood, Health & Society (Details available at http://hollywoodhealthandsociety.org/; Movius, Cody, Huang, Berkowitz, & Morgan, 2007). For health communication resources for entertainment writers and producers, and case examples of and storylines from entertainment-education, see the CDC's Gateway to Health Communication & Social Marketing Tools & Templates (For more information, check

CDC's website at http://www.cdc.gov/healthcommunication/ToolsTemplates/EntertainmentEd/index.html).

Campaigns may also rely on creative publicity techniques for generating magazine feature story coverage or placement in daytime TV talk shows. This strategy is most viable for certain topics in the health, safety, and environmental domain that are regarded by the public as risky, controversial, or personally salient.

*Online and digital media attributes*

Public communication campaigns increasingly emphasize digital/online media technologies (Lieberman, 2013; Murero & Rice, 2006; Noar & Harrington, 2012; Parker & Thorson, 2009; Strecher, 2007). Online health systems offer a variety of attributes that foster effective online interactions among users, such as interactivity, anonymity, narrowcasting, and tailoring, presence, homophily, social distance, and interaction management, which promote learning, social influence, stigma management, and coping (Walther, Pingree, Hawkins, & Buller, 2005).

*Interactivity* encompasses direction of communication and level of receiver control over the communication process, which shape relationships between user and source in the context of specific design features (e.g., games, email, and hyperlinks). The value of *anonymity* inherent in web information search and online discussion groups is valuable for private topics such as STD/HIV prevention and testing. *Narrowcasting* employs segmentation and targeting (key concepts in social marketing), which are especially applicable to Internet users.

*Tailoring* utilizes an online screening questionnaire to assess audience factors such as readiness stage, stylistic tastes, knowledge levels, current beliefs, and health condition, and then directs them to narrowly targeted and personalized messages or activities. This approach increases the likelihood of learning and persuasion while decreasing the potential boomerang effects. Lustria, Cortese, Noar, and Glueckauf (2009) reviewed 30 studies of computer-based tailoring interventions covering four general health areas: nutrition and diet, physical activity, alcoholism, and smoking cessation, most emphasizing risk prevention and health maintenance. Their Figure 2 provides a useful cross-tabulation of technical implementation strategies (extent and timing of program, online and digital media, features, and user tools) with message tailoring strategies (goal audience criteria, such as information needs and stages of change), and tailoring mechanisms (such as personalization and feedback). Because of the ability of online/digital campaigns to provide tailored messages, most online interventions reviewed by Cugelman, Thelwall, and Dawed (2011) applied strategies from the transtheoretical approach, which, along with self-efficacy and processes of change, were significantly more effective than other frameworks (Noar, Benac, & Harris (2007).



*Online and digital media applications*

Complementing mass media and workplace campaigns with a series of *emails* providing strategies, reminders, and links to online resources strengthens impacts, such as for a half-year worksite campaign aimed at increasing physical activity and fruit/vegetable consumption (Franklin, Rosenbaum, Carey, & Roizen, 2006). The *Internet* is a major source for online health information, support, discussion, therapy, support, prescriptions, and access to physicians (Murero & Rice, 2006; Rice, 2006). Computer-delivered intervention (including tailoring) improves knowledge, attitudes, intentions, health behaviors and general health maintenance, social support, quality of life, and self-efficacy, across a variety of health domains (Portnoy, Scott-Sheldon, Johnson, & Carey, 2008; Rains & Young, 2009). A meta-analysis of studies examining the role of the Internet in health behavior change reported an overall small but significant positive effect; stronger results were found for interventions applying health behavior theories, communication approaches, and behavior change techniques (Webb, Joseph, Yardley, & Michie, 2010). Another extensive meta-analysis of online interventions found small but consistent significant effects, though with over-time dropoff (Cugelman, Thelwall, & Dawed, 2011). Campaigns can utilize the *Internet* for low-cost message dissemination via online public service promos and spots (e.g., brief banner ad messages or solicitations to click through to a website) and long-form video messages on sites such as *YouTube.* For example, YouTube organ donation videos (and comments posted) stimulate actual organ donor registration (Tian, 2010).

*Websites* can provide the primary infrastructure for an integrated multimedia campaign. A meta-analysis comparing web-based to non-web-based interventions in 22 articles involving nearly 12,000 participants found improved health knowledge and/or behavioral outcomes in all but one of the studies (Wantland, Wantland, Portillo, Holzemer, Slaughter, & McGhee, 2004). The CHESS (Comprehensive Health Enhancement Support System)

provides an integrated system for a wide range of health crisis campaigns. Over-time use of the CHESS site offering information, support, decision and analysis tools related to breast cancer, compared to use of Internet links to high-quality breast cancer sites, and to a control group, showed greater log-ons, use of more health resources, and greater outcomes (quality of life, health-care competence, and social support) (Detailed information available at http://chess.wisc.edu/chess/projects/about_chess.aspx; Gustafson et al., 2008; Walther, Pingree, Hawkins, & Buller, 2005). The CDC's national VERB campaign promoting exercise among pre-teens attained wide-scale engagement (based on a hierarchy-of-effects framework) in website activities (Berkowitz et al., 2008).

*Texting* via mobile phones is well-suited to offer tailored, wide-reaching, interactive and continuing campaign interventions (Fjeldsoe, Marshall, & Miller, 2009). It has a variety of advantages as a medium for health campaigns: interactive as well as broadcast modes, asynchronous which increased convenience, short messages are less susceptible to selective perception, tailoring, widespread accessibility, appropriate to low-income or low-educated audiences, ability to provide prompts or random reminders, etc. Meta-analysis shows significant positive effects of text messaging as a tool for health behavior change (Cole-Lewis & Kershaw, 2010). Another meta-analysis concluded that health outcomes and care processes can be improved through complementing standard care with reminders, monitoring and managing diseases, and education via mobile phone voice and text messages (Krishna, Boren, & Balas, 2009). *Podcasts* can provide relevant audio information (e.g., social support, persuasive messages, or news items) to motivated audiences at their convenience, and would be especially relevant to low-literacy or non-English-speaking audiences.

The more interactive, social, communicative, and collaborative *web 2.0* applications also enable users to participate more directly in producing, sharing, and discussing health-promotion messages (Thacheray, Neiger, Hanson, & McKenzie, 2008). *Blogs* link users with similar information needs and concerns to share their views and experiences (Rains & Keating, 2011), while *wikis* support group collaboration. *Twitter* provides updates and protocol reminders to campaign-specific followers; however, tweets (like much Internet content) may include considerable misunderstandings or misuses of health information and medicines (Scanfeld, Scanfeld, & Larson, 2010). *Social bookmarking* allows health-oriented communities to develop and share useful online resources (Thackeray, Neiger, Hanson, & McKenzie, 2008).



For guidelines on using *social media* (blogs, video-sharing, mobile applications, RSS feeds, Facebook, Twitter, buttons and badges, e-cards, text messaging, widgets) for health campaign interventions, see Centers for Disease Control and Prevention (Detailed information available at CDC's website at http://www.cdc.gov/healthcommunication/ToolsTemplates/index.html).

Voice-response systems, interactive video, DVD and CD-ROM, mobile phones and *computer games* can be effective in reaching young people. Game players can acquire skills and improve self-efficacy from role-playing, modeling, and vicarious experiences, or directly experience health benefits through physical movement as part of the game (Lieberman, 2013). More broadly, a meta-analysis of video game research findings shows a positive impact on health behaviors such as chronic disease management, exercise, and diet (Baranowski, Buday, Thompson, & Baranowski, 2008).

### 7. Deploy Quantitative Media Dissemination Factors that Enhance Effects by Amplifying the Volume and Repetition of Messages, the Prominence and Scheduling of Placements, and the Length of the Campaign

A major problem in mass media campaigns is simply reaching the audience and attaining attention to the messages (Hornik, 2002; Rice & Foote, 2013). The exposure problem is also due to both *selective exposure* (notably when individuals with unhealthy habits defensively avoid threatening media messages, much easier to do with media than with interpersonal influences), and simple *lack of motivation* to access health information (notably when lower-income, less-educated at-risk segments of the population ignore health messages that are encountered). Audiences may also misperceive their susceptibility to negative consequences, fail to learn many types of informational content, deny the applicability of message incentives to self, defensively counter-argue against persuasive appeals, and reject unappealing behavioral recommendations.

However, four key quantitative dissemination factors can partially overcome some of those challenges, and improve campaign effectiveness. A substantial *volume* of messages provided by the media helps attain adequate reach and frequency of exposure, as well as audience responses such as comprehension, recognition, and image formation. An appropriate level of *repetition* of specific executions facilitates message comprehension and positive affect toward the recommended behavior, although overly high repetition can

produce wear-out or diminishing returns. Placement *prominence* of messages in conspicuous positions within media vehicles (e.g., front-page newspaper positioning, or high-rankings in popular search engine websites) enhances both exposure levels and perceived significance of the topic on the public agenda. Paid health promotion ads on *social media* sites have greater potential for impact because of more prominent placement and more precise targeting. Depending on campaign objectives, the *scheduling* of a fixed number of presentations may be most effectively concentrated over a short duration, dispersed thinly over a long period of time, or distributed in intermittent bursts of "flighting" (periods of no ads interspersed among periods of strategically timed ads) or "pulsing" (combining low-level continuous ads with flighting).

To maximize dissemination quantity, campaigners may gain greater media access by aggressively pursuing free public service time or space, soliciting monetary support from government and corporations to fund paid placements, skillfully using publicity techniques for generating entertainment and journalistic coverage, and exploiting low-cost channels of communication such as websites and social media. Since 1942, the Ad Council has helped create a wide range of pro-social campaigns, and provides extensive ad resources in the areas of community, education, and health/safety (http://www.adcouncil.org/default.aspx?id=15). However, effectiveness of PSAs varies extensively, and, if not designed carefully, may have negative impacts (Fishbein, Hall-Jamieson, Zimmer, von Haeften, & Nabi, 2002).

Moreover, the reach of a campaign can be widened by sensitizing audiences to appropriate content already available in the media and by stimulating subsequent information-seeking from specialty sources. The "mass" media include more than just radio, newspapers, magazines, and television; consider also films, press coverage, organizational and community public relations activities, posters and leaflets, "shopper" and free local papers, billboards and bus signs, toll-free hotlines, Internet sites and other digital and online media, school materials, work-site programs, direct marketing and coupons, merchandise with logos, music and concerts, information on the campaign resources themselves (e.g., condom packets, exercise cards), etc. (Noar, 2006). However, the primary challenge to mass media campaigns is the pervasive media environment promoting risky and unhealthy behaviors. For example, tobacco and smoking campaigns exist in a life-long environment of massive advertisements, media coverage, and entertainment media content promoting smoking (National Cancer Institute, 2008).



Regarding the *length* of a media campaign, the difficult health problems addressed by campaigners usually require exceptional persistence of effort over long periods of time. A campaign may require several months or even many years as successive phases are implemented. In many cases, perpetual campaigning is necessary because various goal audience segments are in constant need of influence, or are being regularly replaced (e.g., college students). Although lengthy campaigning can be quite expensive and probably pays diminishing returns over long periods, there are at least five types of subgroups that require lengthy time to be influenced: newcomers who move into the priority audience, backsliders who revert to prior misbehavior, evolvers who gradually adopt recommended practices, vacillators who need regular reinforcement to stay the course, and latecomers who eventually become receptive to the campaign. Further, summative evaluation and cost-effectiveness analyses can determine the relative value of such lengthy and focused media campaigns.

### 8. Conduct Summative and Process Evaluation Research to Measure Effects on Individuals' Knowledge, Attitudes and Behavior, and to Assess Outcomes among Policy Makers, Organizations, and Communities

*Summative evaluation* research is performed to quantitatively and qualitatively assess impact; cross-sectional, field experimental, and time-series designs are most widely used at this stage. *Process evaluation* assesses how well the planned implementation was accomplished (including placements of messages in media channels, using the measures in Sections 2 and 7), and how weaknesses or problems in message conduct and media exposure may have reduced the potential for the theoretical processes to actually obtain (Steckler & Linnan, 2006). Both kinds of evaluation research are conducted during and after campaigns. Evaluations also use many of the same general audience media use measures identified in Section 2.

At the individual level, evaluation researchers typically measure exposure to mediated messages and changes in awareness, knowledge, attitude and behavior. The preponderance of evaluation data suggests that campaigns exert moderate to small influences on cognitive outcomes, less influence on attitudinal outcomes, and still less influence on behavioral outcomes, and are typically more effective at prevention than cessation (Atkin & Rice, 2013; Snyder & LaCroix, 2013). Effects on behaviors depend on the dose of infor-

mation carried in the media channels, duration of campaign message dissemination, integration of mass media and interpersonal communication systems, and supplementation of media stimuli by interpersonal communication (Section 4) and social-change strategies (deterrence, enforcement, education and engineering of the physical context).

Evaluation may also assess campaign impacts on policy-makers, organizations, and communities, both via exposure to campaign media and messages, but also through coverage in the media and greater prominence in the public agenda (e.g., indirect influence via media advocacy, Section 3). These outcomes usually involve alterations in environmental factors that produce improvements in societal systems and consequently individual health status (Rice & Foote, 2013).

Desired changes in individual knowledge, attitudes or behavior are typically intended evaluation outcomes. Salmon and Murray-Johnson (2013) draw distinctions among various types of campaign effectiveness, including *definitional effectiveness* (e.g., defining a social phenomenon as a significant problem or elevating the topic on the public agenda via prominence in the mass media), *cost-effectiveness* (e.g., comparing mass media campaign messages vs. interpersonal interventions), and *programmatic effectiveness* (e.g., assessing campaign outcomes associated with the media campaign relative to stated goals and objectives). Emphasizing less traditional campaign effects, Cho and Salmon (2007) identify five dimensions where *unintended effects* may occur—time (short or long term), level (individual or societal), audience (targeted or other), content (related to specific content or indirectly related to the use of the medium), and valence (desirable or undesirable).

## Case Studies

There are, of course, many useful and exemplary case studies. For example, in the nearly two-year *Safer Sex* campaign using intensive television public service announcements, messages about safer sex specifically designed for sensation-seeking/impulsive-decision-making audiences in two cities achieved very high exposure and recall, which was associated with increased condom use, self-efficacy, and behavioral intentions, with no changes in the control city (Zimmerman et al., 2007). Edgar, Noar, and Freimuth (2008) present cases of the use of a wide array of communication channels (including entertainment media and Internet media) in several countries for HIV/AIDS issues.



Begun in 2000, *Truth* is the largest U.S. youth smoking campaign not directed by the tobacco industry, and integrates mass, online and social media (http://www.thetruth.com), with components targeted toward facts, music, games, and sports. Based on large nationally representative surveys, exposure to and recall of *Truth* campaign messages were associated with positive changes in attitudes, beliefs, and intentions to smoke. However, during the same time period, Philip Morris ads from their *Think. Don't Smoke* increased positive beliefs and attitudes toward the tobacco industry (Farrelly, Davis, Duke, & Messeri, 2009). California's *Anti-Tobacco Media Campaign* is one of the longest-running, most comprehensive, and best-funded anti-smoking efforts in the U.S. (More detailed information available at their website at http://www.cdph.ca.gov/programs/tobacco/Pages/CTCPMediaCampaign.aspx). The site notes the development of culturally and linguistically relevant campaign messages, and also documents difficulties in reducing smoking in adults versus kids.

The National *Youth Anti-Drug Media Campaign* produced extensive mass media exposure of rigorously designed messages (More information available at http://www.whitehouse.gov/ondcp/Campaign-Effectiveness-and-Rigor). This process first involved exploratory research involving literature reviews, expert advice, frequent studies of teens, parents, and community stakeholders, and ongoing recommendations from an advisory team. Focus groups of the goal audience in two different markets were conducted to select and improve the ad concepts. Copy-testing then sought responses from groups viewing the ad compared to control groups to verify the efficacy of the messages. Finally, regular tracking studies measured awareness and recall of the ads by goal audience members.

A campaign by the *Center for Science in the Public Interest* seeks to combat marketing of sweetened, high alcohol-concentration beverages ("alcopops") that appeal to young drinkers (Detailed information available at http://www.cspinet.org/booze/iss_alcopops.htm). The main media-based strategy was to generate news publicity, intended primarily for policy-makers in government and the alcohol industry (Freudenberg et al., 2009; one of their 12 case studies). For an analysis of a college campus risky-drinking campaign, see DeJong and Smith (2013).

The Johns Hopkins University *Center for Communication Programs* has summarized 52 lessons in 8 implementation stages from international health communication programs in 43 countries (Piotrow, Rimon, Merritt, & Saf-

fitz, 2003). Green and Tones (2010) also provide international cases of public information campaigns.

## Conclusion

Media-based health communication campaigns typically attain a low-to-modest rather than strong degree of impact. The limited effects are due to meager dissemination budgets, unsophisticated application of theory and models, poorly conceived strategic approaches, substantial resistance among key audience segments (individuals, cultural groups, and social structures), the complex or difficult nature of behaviors to be influenced (addiction, social rewards, societal systems), and the prevalence of (in some cases, massive and continuous, as in commercial advertising for unhealthy products) messages promoting the at-risk behaviors (e.g., smoking, drinking, fast foods, risky sex).

However, the evaluation research literature shows many success stories over the past several decades. For example, mass-mediated health campaigns have made significant progress in addressing important problems involving seat belt use, smoking, drunk driving, AIDS, and heart disease. The theoretical and practical literature suggests that campaign designers should give greater emphasis to relatively attainable impacts by engaging in more thorough formative evaluation, seeking more receptive focal segments, promoting more palatable positive products perceived to have a favorable benefit-cost ratio, creatively generating free publicity, and shifting campaign resources to indirect pathways that facilitate or reduce behavior of the goal audience segment via interpersonal, organizational, political and societal influences (Noar, 2006). Due to the current trends of campaigners employing sophisticated strategies, digital and online media enabling precise targeting and tailoring, and society giving increased priority to healthy and prosocial practices, it can be expected that mass-mediated health campaigns will produce stronger impacts in future years.

## Recommended Readings

Bartholomew, L. K., Parcel, G. S., Kok, G., & Gottlieb, N. H. (2011). *Planning health promotion programs: An intervention mapping approach.* San Francisco: Jossey-Bass.

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Rice, R. E., & Atkin, C. K. (Eds.) (2013). *Public communication campaigns* (4th ed.). Sage, Thousand Oaks, CA.

## Additional Resources

Centers for Disease Control and Prevention (n.d.) *CDC social media tools guidelines & best practices.* Atlanta, GA: CDC. Check its website, available at http://www.cdc.gov/SocialMedia/Tools/guidelines

The Community Guide, http://www.thecommunityguide.org/index.html

Crano, W. D., & Burgoon, M. (Eds.) (2002). *Mass media and drug prevention: Classic and contemporary theories and research.* Mahwah, NJ: Lawrence Erlbaum.

Health Communication Materials Network, http://www.m-mc.org/hcmn

Interactive Smart Chart, http://www.smartchart.org

McKenzie, J. F., Neiger, B. L., & Thackeray, R. (2012). National Cancer Institute's *Making health communication programs work: A planner's guide.* Check the website at http://www.cancer.gov/cancertopics/cancerlibrary/pinkbook

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