Title

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PUBLIC COMMUNICATION CAMPAIGNS: THEORETICAL PRINCIPLES AND PRACTICAL APPLICATIONS

Public communication campaigns can be broadly defined as (1) purposive attempts (2) to inform, persuade, or motivate behavior changes (3) in a relatively well-defined and large audience, (4) generally for noncommercial benefits to the individuals and/or society at large, (5) typically within a given time period, (6) by means of organized communication activities involving mass media, and (7) often complemented by interpersonal support (adapted and expanded from Rogers & Storey, 1987). The use of digital media in campaigns extends the traditional definition a bit. The International Society for Research on Internet Interventions (www.isrii.org) defined "Internet interventions [as] treatments, typically behaviorally based, that are operationalized and transformed for delivery via the Internet. Usually, they are highly structured; self-guided or partly self-guided; based on effective face-to-face interventions; personalized to the user; interactive; enhanced by graphics, animations, audio, and video; and tailored to provide follow-up and feedback," but do not include sites that just provide information (Ritterband, et al., 2006).

Paisley (2001) distinguished public service campaigns (in which goals are generally supported by a broad array of stakeholders) from advocacy campaigns (in which goals are controversial and challenged by significant stakeholders). Over time, some topics may shift from one type to another, such as gender equality or smoking. Paisley (1998, 2001) mentioned several other conceptual distinctions: (1) *Objectives or methods* (emphasizing campaigns as strategies of social control to achieve objectives, or campaigns as a genre of communication with associated methods, communication channels, and kinds of results), (2) *Strategies of change* (whether the campaign emphasizes education or providing information about how to change behaviors or attitudes, enforcement or negative consequences for not complying with accepted or desired behavior, or engineering or designing social systems to prevent unwanted behaviors or consequences), (3) *Individual or collective* benefits (whether campaigns emphasize individual or social changes and outcomes, (4) *First-party* and *second-party* entitlement (whether campaign sources pay the direct consequences and have a primary stake in the issue or whether they are not directly affected and represent other stakeholders who may not be able to present their case) and (5) *Types of stakeholders* (whether the primary campaign sponsors and actors are associations, government agencies, foundations, trade unions, corporations, mass media, and social scientists, as they all differentially affect the public agenda, funding sources, campaign design, access to media, objectives and audiences).

Extensive advances in research and practice related to campaign theorizing, design, implementation, evaluation, and critique have been introduced since our initial summary chapter (Rice & Atkin, 1994), and an increasing number campaigns have attained success in the past 15 years. Nevertheless, some current campaigns still fall far below expectations, certain theoretical aspects of campaigns are still only partially understood, and a variety of unexpected or uncontrollable factors may undermine the direction, implementation, and outcomes of campaigns. Only when we understand underlying general principles of communication, persuasion and social change, and the relationships among the components of a campaign, can

we properly design and evaluate campaign efforts. This is especially true precisely for the reasons that social science is often criticized by practitioners: Reality is too complex to identify what really causes what, and what is and is not effective, especially when perceptions are based solely on experience gained in a few campaigns.

The following sections summarize general campaign components according to a framework derived from both Atkin (2001) and McGuire (2001), with increased attention to implications of online/digital media for campaigns. Additional sources for campaign summaries and reviews are available in Table One; the appendix of Rice and Atkin (2001); Backer, Rogers, and Sopory (1992), who suggested 27 generalizations about successful health communication campaigns (pp. 30-32); and Salmon and Atkin (2003).

--- Table One Goes About Here ---

Understand Historical and Political Context

A rich history of American communication campaigns existed before the era of federal government and social science involvement (Paisley, 2001). Early examples include the pamphleteers and individual reformers in the 18th century such as Cotton Mather and public inoculations, Benjamin Franklin and abolitionism, Thomas Paine and independence, and Dorethea Dix and treatment of the mentally ill. The 19th century saw the rise of associations using legislative testimony, mass communication, confrontation and local organizing (Bracht, 2001) to promote slavery abolition, women's suffrage, temperance unions, and wilderness preservation. In the early 20th century, muckrakers harnessed the powerful reach of inexpensive newspapers to address issues such as child labor and adulterated food products. As the century progressed, the federal government played an increasingly central role with regulations concerning commerce, food and drugs, and the environment, as well as programs providing social services after the New Deal. By mid-century, campaigners were applying social science to the development and evaluation of campaigns; initial perspectives held that mass media campaigns had no direct effect, that audiences were largely uninterested or applied selective exposure and perception, and that most effects operated indirectly through opinion leaders, while more recent theories suggest that well-conceived campaigns can achieve moderate success by using appropriate mixes of social change, media advocacy, community participation, audience targeting, message design, channel usage, and time frames.

Also crucial to the success of campaigns is the ability to become an important and enduring part of the public agenda, and to obtain first-party entitlement for significant stakeholders (Paisley, 2001). Some topics rise and fall over time, such as energy conservation, global warming, busing, endangered species, cancer, HIV/AIDS, drugs, drunk driving, tobacco, starvation due to famine, abortion, or civil rights. It seems that some periods are more "ideological", at which time issues are debated in the public agenda more extensively. One challenge in campaigns is to understand and try to shape these agenda items, and to cut through the very cluttered set of public agenda items that compete for people's attention and understanding. Paisley (1998) concluded that campaigns must advise, inform, advocate, and reinforce rather than simply exhorting, because only the individual can grasp the various aspects of their social context.

Review the Realities, and Understand the Sociocultural Situation

In undertaking campaigns, it is advisable to first review the realities (choose a significant problem offering a cost-effective solution, and then identify available resources and determine the optimum apportionment), the sociocultural situation, and the campaign ethics.

This includes identifying the focal behaviors of high priority audiences, their media usage patterns, social factors and institutional constraints, and what constitutes meaningful and acceptable change. It also involves identifying whether the campaign objectives are essentially creating awareness, instructing/educating, or persuading. Among the "strategies of change" mentioned by Paisley, campaigns traditionally rely on the educational component rather than the enforcement or engineering aspects. The current trend broadens the scope to include a greater emphasis on environmental change to complement media influence at the individual level.

Part of this understanding is the philosophical foundation of the campaign. For example, the perspectives of Sense-Making, community and two-way symmetric public relations campaigns have reconceptualized audience members (including publics, communities and institutions) as peers and collaborators in the mutual and interactive development and implementation of a change effort (Bracht, 2001; Dervin & Frenette, 2001; Dozier, Grunig, & Grunig, 2001). These approaches differ from traditional campaigns by giving greater emphasis to audiences' social and cultural contexts, by replacing experts' goals with audience-derived goals, and by using audience networks as ways to generate, frame, and share messages (Dervin & Frenette, 2001).

All communication campaigns and their components involve a wide array of ethical issues, from underlying assumptions (such as individual or social causes) to actual intervention choices, although they are usually implicit and embedded within campaign decision-making processes (Guttman, 2003). Identifying and resolving these ethical issues have both moral grounds (attempting to change people) as well as practical benefits (such as increased trust and respect). Guttman reviews aspects of different perspectives on ethics, such as means/ends, do good/avoid harm, justice, connectedness, truth, completeness, correctness, sincerity, comprehensibility, and inclusion. Specific concerns relating to health communication interventions include: who chooses and who has the mandate to select and impose the campaign's goals; the extent to which audience segmentation creates inequities and unequal utilities; the implications and unintended consequences of targeting one vs. another segment; using persuasion strategies that involve exaggeration, omission, fear and emotional appeals; the extent to which tailoring to cultural meanings a form of co-optation, appropriation, or reinforcement of stereotyping or associated negative behaviors; the representation of blame, shame, culpability and responsibility in messages; unintended consequences such as harm, stigma, labeling, knowledge and social gaps; altering the role of health itself in the public agenda; and obligations the health campaigns have to individuals, the community, organizations, stakeholders, the profession, and society (Guttman, 2003).

Understand the Audience

One approach to improved understanding of the audience is segmentation – identifying subaudiences. Segmentation may involve demographics, media usage patterns, lifestyle, psychographics, ZIP code, uses and gratifications, predispositions toward the topic, and channel accessibility. This enables allocation of campaign efforts to the audience groups that are most in need of change and most receptive to the campaign, and to design messages appropriate to the audience preferences, media usage, and abilities.

Campaign designers typically emphasize three basic types of audiences. *Focal segments* are audiences grouped by levels of risk or illness, readiness, income and education, and other factors such as sensation-seeking. *Interpersonal influencers* are opinion leaders, media advocates, peer and role models, who can mediate the campaign (positively or negatively!) and help set the public agenda. *Societal policymakers* affect the legal, political and resource

infrastructure, such as through regulations on media messages, environmental conditions, or safety standards, and social action such as community-based campaigns, federal allocations (such as the gasoline or tobacco tax), and insurance and health care programs. Atkin (2001) argued that campaigns may want to develop a *product line* or continuum of intended outcomes, so that audiences with different levels of receptivity or resistance can find their comfortable location in the campaign mix.

One way of understanding the audience is the Sense-Making methodology, which aims to "ensure as far as possible that dialogue is encouraged in every aspect of communication campaign research, design, and implementation" (Dervin & Frenette, 2001, p. 72). The method helps participants communicate about their attempts to move through discontinuities (gaps in meaning across time, people and space) in their life experiences by means of making sense, internally and externally, in the context of the intersection of past, present and future. Cognitions, attitudes, beliefs, emotions, and narratives serve as bridges – or obstacles -- across these gaps. The primary interviewing approach is called the micro-moment time-line, whereby participants are asked to describe a situation and how they experienced it through time, identifying both how they saw themselves as stopped or moving at a particular moment on the timeline, and how various utilities helped them move through time and space.

The concept of *two-way symmetrical campaigns* derived from public relations theory (Dozier, Grunig, & Grunig, 2001, p. 239) emphasizes negotiating with an activist public, using conflict resolution in dealing with publics, helping management understand the opinions of particular publics, and determining how publics react to the organization. In particular, Dozier, et al. highlighted the significance of *invisible clients*, those organizations that employ public relations activities to influence audiences without being explicitly identified as associated with the message. Examples include the tobacco industry, political ideologies (see Proctor, 2001), the milk industry (through its "Got Milk?" campaigns – see Butler, 2001), and environmental lobbyists (Cox, 2006).

Apply Appropriate Theory

After assessing the factors described above, the campaign strategist should identify appropriate theoretical approaches. While campaigns are typically viewed as merely applied communication research, the most effective campaigns carefully review and apply relevant theories; further, campaign results can be used to extend and improve theories about media effects and social change. Atkin (2001) advocated using informed diversification of campaign approaches and channels rather than a single strategy. Salmon and Atkin (2003) briefly reviewed the frameworks and research on persuasive message strategies, including diverse incentive appeals (negative, positive, multiple), the use of evidence (one-sided vs. two-sided), and the addition of instruction (knowledge gain, skills acquisition, resistance to peer influence, media literacy, inoculation) and awareness (recognition, activation, compliance, information-seeking, sensitize) messages.

Theories most commonly invoked to guide successful campaigns include the following:

Social learning (Bandura, 1977b; Flora, 2001): Individuals are likely to exhibit behavior similar to that of role models who are credible, who explicitly model intended behaviors, and who receive appropriate negative or positive reinforcements.

Social comparison (Festinger, 1954; Flora, 2001): People compare the salience and outcomes of others' behavior, which, along with social norms, attitudes, and intentions, influence one's subsequent behavior.

Reasoned action (Ajzen & Fishbein, 1980): A combination of one's personal attitudes,

perceived norms of influential others, and motivation to comply provides a parsimonious model of predictors of intended behavior. This model is derived from *expectancy-value* theory, which postulates that one's beliefs about how likely a given behavior leads to certain consequences, multiplied by one's evaluation of those consequences, are likely to predict attitudes and behavior.

Self-efficacy (Bandura, 1977a): The extent to which one feels one has control over one's actions, or can in fact accomplish a task, affects the extent to which one engages in changing one's own attitudes and behaviors. Thus an intermediary goal of a campaign would be to improve the self-efficacy of the at-risk group, such as those attempting to stop smoking or adolescents attempting to learn and practice behaviors that reduce their risk of AIDS.

The extended parallel process model (EPPM) (Stephenson & Witte, 2001): Fear appeals, through arousal, perceived susceptibility and vulnerability, awareness of likelihood of a hazard, framing of messages in terms of potential gains or losses, and perceived threat, can be effective in changing risky attitudes and behaviors. However, two, parallel, responses to fear may occur: a cognitive process involving ways to control or avert a danger, which may take advantage of the health message using a fear appeal, and an emotional process that attempts to control the fear, often by denial or coping, which will generally reject the message due to the fear appeal. (The third possible response is to ignore the message if it is deemed irrelevant or insignificant to the respondent.) The EPPM argues that perceived threat influences the strength of a danger or fear control response, while perceived efficacy influences whether danger or fear control responses are elicited. So a fear appeal must successfully convey both that the threat is salient and significant, and that the audience member can do something about it, and probably by emphasizing efficacy before threat.

Diffusion and influence through social networks (Piotrow & Kincaid, 2001; Rice, 1993; Rogers, 1981): Ideas, norms, and practices are diffused through – or rejected by -- interpersonal networks because of the strong influence that evaluations and behavior of others – especially opinion leaders – have on network members. For example, students' estimates of their peers' drinking behaviors are typically significantly higher than the peers' actual behaviors; these inaccurate social projections encourage students to engage in excessive drinking until campaigns such as the RU Sure? Project (Lederman, et al., 2001) provide accurate evidence from the individuals' own peer networks. Thus, perceived network influence is an important goal as well as mechanism of campaigns taking social network theory seriously.

Integrative theory of behavior change (Cappella, Fishbein, Hornik, Ahern, & Sayeed, 2001): This model integrates three major theories: Health Belief Model, social cognitive theory, and the theory of reasoned action. Outcome behaviors are influenced by skills, environmental constraints, and intentions. Intentions are influenced by attitudes, norms, and self-efficacy. Attitudes are influenced by behavioral beliefs and their evaluative aspects. Norms are influenced by normative beliefs and motivations to comply (such as with network members or opinion leaders or enforcement threats). Self-efficacy is influenced by efficacy beliefs. All the beliefs are influenced by a variety of external variables (situational, institutional and infrastructural), demographics, attitudes, personality traits, and other individual differences, such as gender, race and culture). Different implications follow for the proximate influences (environmental, intention, and skills and attitudes), the intermediate influences (attitudes, norms, self-efficacy), the underlying beliefs (behavioral, normative and control), and background influences (past behavior, demographics and culture, attitudes toward the target behavior, personality and emotions, other individual differences, and exposure to the intervention or media messages)

(Fishbein & Cappella, 2006). Identifying what audience segments hold what beliefs, or what social groupings are more influenced by social norms, helps campaign implementers focus their efforts.

The transtheoretical (or stages of change) model (Buller, et al., 2001; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997): This model identifies subaudiences on the basis of their stage in the process of behavior change with respect to a specific health behavior: precontemplation, contemplation, preparation, action, or maintenance. Progression along these stages is influenced by a variety of processes: consciousness raising, dramatic relief, self-reevaluation, environmental reevaluation, self-liberation, helping relationships, counterconditioning, contingency management, stimulus, control, and social liberation. Thus, based on the audience's stage, a campaign should emphasize different processes, behaviors and messages. This is an ideal challenge for interactive web sites, as users can first assess their own stage, and then be provided material and activities appropriate for that stage and the associated processes, such as in

The *health communication-behavior change model*, the basis of the Stanford Three-Community Campaign to reduce cardiovascular disease through integrated community-side projects, outlines three major project components: communication inputs (media, face-to-face, and community programs), communication functions for the receiver (attention, information, incentives, models, training, cues to action, support, self-management) and behavior objectives for the receiver (awareness, knowledge, motivation, skills, action, practice self-management skills, social network members) (Flora, 2001).

Apply the Communication/Persuasion Matrix to Message Design

It is important to understand the role of and interaction among communication input variables and output variables. Communication *input variables* include source, message, channel, audience, and outcomes. Campaign *output variables* include the 13 possibly sequential persuasion steps of exposure, attention, liking, comprehension, generating related cognitions, acquiring skills, attitude change, storing, retrieving, decision to act in accord with retrieved position, action, cognitive integration of behavior, and encouraging others to behave similarly (McGuire, 2001). This model extends the traditional *instrumental learning* approach (Hovland, Janis, & Kelley, 1953). Several variants to the straightforward communication/persuasion matrix (McGuire, 2001) include the *elaboration likelihood model* (Petty & Cacioppo, 1986), *self-persuasion* (McGuire, 1960) and *alternate causal chains* (Bem, 1970).

Typical source (or messenger) variables include credibility, attractiveness and power. However, their effect may covary with other factors, such as attractiveness with formality of dress, and credibility with sameness of gender or ethnicity between source and audience. Interesting message variables include credibility, attractiveness, relevance, understandability, argument structure, evidence, one-sided vs. two-sided content, types of arguments, types of appeals, and style (humor, clarity). At the most elemental level, effective appeals generally associate some valued (positive/negative) incentive with a sufficient probability that the promised/threatened outcome will occur. Typical incentives relate to health, time/effort, economics, ideology, aspirations, social acceptance and status. For example, well-designed fear appeals can increase the smoker's perceived likelihood of social rejection even though they may not bring the distant likelihood of lung cancer to salient levels. Atkin (2001) asserted that probability is more effective than valence when both cannot be achieved, and that multiple appeals are a more efficient as well as effective strategy. Presentation of evidence is more important for forming beliefs when the source lacks complete credibility or when the audience is

highly involved. Other message variables include stylistic, modality, and production factors, which should be appropriately matched to the nature of the argument, audience, and desired outcomes.

Channel variables differ across various media in terms of reach, specialization, informativeness, interactivity, modalities, cognitive effort, effect on agenda setting, accessibility, homogeneity of audience, efficiency of production and dissemination, and context in which the audience uses the medium (Atkin, 2001; McGuire, 2001). Salmon and Atkin (2003) compared 25 channels across six major media features relevant to campaign design and effectiveness (access, reach, ability to reach specific target, depth [detailed and complex content], credibility, and agenda-setting). Other relevant features include intrusiveness, safeness, participation, sensory modalities, personalization, decodability, efficiency (both in production and dissemination). Audience variables include risk, cognitive development, education, and susceptibility to social influence (affected by anxiety, peer norms and behaviors, self-efficacy, compensatory mechanisms such as threat-avoiding coping habits). Central outcomes include beliefs, attitudes, behavior, persistence of outcome, and resistance to persuasion. McGuire (2001) discussed how each of these may be moderated by, or interact with, other factors.

Potentially valuable output variables to consider include audience choices and social settings of media use, differential paths to persuasion, varied sequencing of these 13 steps for different people or settings, the role played by liking, comprehension and recall in affecting behavioral outcomes, and whether the goal is to promote positive behaviors and attitudes or reduce or prevent negative ones. This latter issue, for example, raises questions of whether fear appeals, counter-arguing, or social benefits from alternative behaviors are most appropriate.

Atkin (2001) pointed out that depending on the nature of the campaign goal and type of message – awareness, instruction or persuasion – different input and output variables would be emphasized. For example, messages intended to create awareness need to stimulate and facilitate audience members to seek additional information, or sensitize or prime them to note particular kinds of messages. Some messages are designed to instruct or educate, such as procedures to use to resist peer pressure to engage in unhealthy behaviors, or to inoculate audiences against misleading advertisements. Finally, persuasion messages create or change attitudes through the promise, or association, of positive or negative incentives, located in the present or the future, in one's person or one's social interactions. Crucial to successful persuasion messages is activating or creating the salience and likelihood of positive outcomes. The communication inputs and the output response steps – creating what is typically called the communication/persuasion matrix -- interact to mediate the persuasive response, so all the stages must work together to identify the appropriate campaign components and timing.

Conduct Formative Evaluation

Formative Evaluation Stages

An important part of this campaign planning and design is *formative evaluation*, which provides data and perspectives to improve messages during the course of creation (Atkin & Freimuth, 2001; Flora, 2001), and helps avoid unintended outcomes such as boomerang effects or shifting unhealthy behaviors to other domains. A general goal of formative evaluation is to understand what McGuire called the "sociocultural situation," encompassing situational circumstances (e.g., economic, cultural, political, psychological, etc.) that instigate and maintain the undesirable target behavior or that sustain the desired target behavior. This understanding is obtained through *pre-production research*. Atkin and Freimuth identified four stages in preproduction research:

1. *Identify the target audiences:* Who is at risk, who is accessible through communication channels, who can influence others at risk, and who is most and least persuasible? The Stanford project also involved community stakeholders such as health agencies, commercial organizations (restaurants and work places), and community leaders, so its formative evaluation included an *organizational needs analysis* (Flora, 2001).

2. *Specify the target behavior*: Insofar as most global behaviors consist of component behaviors that are influenced by contextual factors, campaign messages should focus on specific effective component behaviors. For example, formative evaluation of weight-loss messages in the Stanford Community Studies found that whereas women were aware of their weight problems and motivated to change, men greatly underestimated their weight problem, were not generally motivated to change, and had low self-efficacy about their ability to lose weight (Flora, 2001).

3. *Elaborate intermediate responses:* The hierarchy-of-effects model suggests a long causal chain between exposure and integrated behavior. Formative evaluation can identify how these steps are linked and what intermediate steps are most amenable to campaign efforts. Some of the intermediate responses include knowledge and lexicon, beliefs and images, attitudes and values, salience priorities, and efficacy and skills. For example, Cialdini (2001) argued that campaigns must avoid unintentionally providing persuasive models of undesirable but popular norms while explicitly concentrating on desirable but unpopular prescriptive norms.

4. *Ascertain channel use:* Using any kind of media without knowing which media the target audience uses, at what times, for how long or how many times, and in what combination is an ineffective use of campaign resources. Formative evaluation can identify media exposure and attitudes toward the different media, either via custom surveys or utilization of marketing and advertising databases.

Next, *pre-testing research* is performed to refine the messages. Evaluators help develop key concepts by asking test audiences to suggest and amplify more appropriate message ideas or more relevant message sources (e.g., should the source be a doctor or a celebrity?). Words, phrases, or descriptions used by target audiences in their discussions about the campaign topic can also be incorporated into message content. Rough, preliminary versions of messages can be tested for the following attributes: attention, comprehensibility, strong and weak points, relevance, or controversial aspects. Several methods are useful in pretesting messages, including focus group interviews, in-depth interviews, central-location intercept interviews, self-administered questionnaires, theater testing, day-after recall, media gatekeeper review, and physiological response analysis.

Challenges to Formative Evaluation of Online/Digital Media Campaigns

With web-based interventions, formative evaluation and audience assessment stages need to identify whether the requirements of the site match users' computer/online literacy (concerning, reading, computer use, information searching, understanding health information, ability to contextualize the information). One approach is to provide something like the eHeals literacy scale, based in social cognitive and self-efficacy theories (Norman & Skinner, 2006), and tailor the interface to literacy levels.

Another challenge in designing online campaign components is to decide on and implement an appropriate information architecture. Danaher, McKay and Seeley (2005) identified four main types: free-form/matrix (provides a range of possibly interrelated hyperlinks for users to choose and "forage"), directive tunnel (step-by-step guidance through a structured sequence of pages), hierarchical (top-down, guiding the user to specific content), and hybrid

(using elements of the other designs, possibly at different stages of the intervention or different user responses). Each has varying implications for usability, perceived complexity, retracing one's path, mentally modeling the layered content, involvement, tailoring, and behavior change goals, as illustrated through analysis of several tobacco cessation sites. Given the range of content, software, and hardware components of online campaigns, system and research design and formative evaluation should involve interdisciplinary participants (designers, researchers) as well as users, which also means support for interdisciplinary projects by funding and implementation agencies, and the consideration of similarities across and overlaps between iterative/cyclic user-centered systems design and health services research paradigms (Pagliari, 2007). Formative evaluation of online campaigns often encounters many challenges, such as coordination of teams, understanding of differing terminologies and methods and forms of evidence, balancing design innovation with robust development, and the usual tensions between academic studies and applied projects.

One implication of taking advantage of web sites through interactivity and multi-media content is that the user's computer and connection bandwidth may be insufficient for interactivity and multi-media, or more fundamentally, the required server's bandwidth may not be sufficient for a given total of concurrent users. Danaher, et al. (2005) developed a bandwidth usage index (assessing how well a site can be used within dial-up or broadband conditions), and applied it to three intervention websites under a number of conditions, including comparing a video-rich version, an audio-rich version, and a web-enabled CD which contained the media-rich content. Even with a variety of bandwidth-reducing techniques (such as scaling, compression, streaming, preloading, etc.), only the web-enabled CD-ROM was suitable for dial-up use. As an example, even though from half to two-thirds of participants in two cancer program patient education web sites felt the sites were more useful than any other source on the topic, they still experienced problems with video and audio clips (Cumbo, et al., 2002).

Accessing the Media

Campaigns must make their messages available through a variety of communication media that are appropriate for the target audience. The message must also communicate specific information, understandings, and behaviors that are actually accessible, feasible, and culturally acceptable. (Rice & Atkin, 1989, p. 10). We have seen that the communication/persuasion matrix, along with formative evaluation, can be used to design or identify persuasive and informational attributes of source, message, and channel.

Social Marketing

A *social marketing* perspective also emphasizes the need to understand the competition, particularly alternative messages and behaviors. Social marketing is similar to communication campaigns, especially its emphasis on behavioral and not just awareness change, and altering the social structure so as to facilitate the intended behavioral changes, except for its reliance on commercial marketing concepts and its orientation toward the consumer (Alcalay & Bell, 2000). These include consumer product orientation, audience segmentation, channel analysis, strategy for the highest probability goals, and process tracking. The more familiar emphases of social marketing include product (may be an action or material), price (financial and social costs), place (distribution, access, and socially acceptable), promotion (developing attitudes and intentions leading to the behaviors), and positioning (maximize benefits and minimize cost, relative to other activities and materials, including re-positioning a familiar concept). Social marketing and product marketing have consequential differences, however, including: focusing on behavioral and social systems change (not merely preference or attitude), expected changes in a large

percentage of the relevant audience, salient and central attitudes and values, only a probability of causal outcomes or gratifications, long-term or preventative outcomes, a more neutral informational tone, dependency on trust based on credibility of the source and benefits to the consumer, and limited budget including in-kind services and volunteerism. Any mass media message competes with hundreds of other messages. Any concept competes with dozens of related mental concepts. So, there is a need to identify the "competitive advantage" of the particular campaign objective. For example, exercising as a means of preventing heart disease can also be advertised as a social activity.

Approaches to Media Dissemination: Placement, Data, Services

Alcalay and Taplin (1989) highlighted the importance and utility of *public relations* ("news about an issue, service, client, or product," p. 116) and *public affairs* ("lobbying and working on regulatory or legislative issues with administrators and legislators," p. 122). Because it has "third party" credibility, public relations can be very useful in not only increasing public awareness of a campaign, but also in deterring opposition to an otherwise controversial issue, such as family planning. Public affairs is important not only in shaping legislation that may advance campaign objectives, but also in gaining support for resources and spokespeople. Editorials, press releases, and hard news coverage may be powerful media modes, when managed properly.

Commercial *broadcast rating services* such as Nielsen can help identify the most effective and efficient channels. Similar data are available for newspapers, magazines, billboards, mailing lists, and even bus posters. By providing figures to calculate the percentage of the target audience exposed to the program or channel at specific time periods, as well as the extent to which audiences change across time periods or are consistent, campaign implementers can determine the *reach* (number of different individuals in the audience) or *frequency* (number of times any individual may be exposed). Different campaign objectives would be achieved through increased reach or increased frequency. For example, increasing awareness about a common issue by the public at large could be achieved more cost effectively through using a specific time/channel combination to maximize reach. However, achieving and maintaining learning or attitude change in a specific at-risk audience would require increased frequency, which may involve a different time/channel mix. A jazz or classical music station, for example, may have high frequency but low reach.

The global reach of some television programs provides new opportunities for taking advantage of minimal marginal costs after initial production, and of reaching youth audiences. For example, MTV aired a global media campaign, "Staying Alive," in 2002 to promote HIV prevention among 16- to 25-year-olds (Geary, et al., 2007), and made all the materials copyright free to non-MTV broadcasters. At least some portions of the campaign were available to nearly 800 million households in 166 countries, with example exposure rates among 16-25 year-olds of 12% in Kathmandu to 82% in Dakar.

The Advertising Council provides in-kind creative and agency services to support approximately 36 public communication campaigns a year in the United States. Further, in-place commercial distribution channels can be used to support delivery of campaign messages and materials. For example, the annual Muscular Dystrophy campaign enlists the cooperation of 7-11 convenience stores to provide immediate delivery channels across the United States. To overcome limitations in free access to the media, certain campaigns have sought government or corporate funding for paid message placement. The Office of National Drug Control Policy began requiring networks and stations to match the time that ONDCP buys with donated time for

other groups communicating about substance abuse prevention (Browning, 2002). Nationally, this approach has been most prevalent for drug, tobacco, and drunk driving prevention campaigns; a healthy media budget can significantly increase audience exposure to messages combating unhealthy behavior.

It is common practice to request local and sometimes national media to place *public service announcements* (PSAs). The practice of broadcasting PSAs was in large part an outgrowth of Federal Communication Commission requirements that stations using the broadcasting frequencies served the public interest and necessity. With the proliferation of media outlets and the deregulation of the media, opportunities to broadcast PSAs continue to decline. It can be argued that PSAs are typically of limited value anyway, because they cannot be scheduled for times when the specific target audience is most likely to be watching or listening, or in known amounts of exposure. Nevertheless, PSAs can be still be placed in specialized outlets such as local radio stations or community newspapers that are likely to reach a target audience, such as teenagers or retired people.

PSAs appear online, too (Browning, 2002). Examples range from the Benton Foundation/Ad Council "Connect for Kids" campaign that received nearly 1 million site visits per month, to a cancer research foundation that ran over 15 million online ads in two months but received only 9 new donors. Exposure can be substantial: Doubleclick provided around 200 million PSA impressions per month in 2001, and America Online provided about $25 million worth of online PSAs, supporting between 10 to 15 campaigns per month, though in a rather random fashion, filling unsold ad space. The Coalition for Organ Donation reported 109,000 visitors to its site, with around 6,000 coming from banner ads on a wide variety of websites. Keeping up with the changing media scene, The Interactive Advertising Bureau began in 1998 committing 5% of its online advertising for PSAs, while the Ad Council reported it received close to $400 million in donated online ad space in 2001. Youtube enables charity organizations to benefit from massive exposure. The channel (http://uk.youtube.com/user/DontYouForgetAboutMe) was launched in the UK in 2007, with the goal of bringing the plight of missing children to a wider and younger audience.

However, as the online PSAs are distributed through intermediaries, campaign sponsors have little control over or knowledge about how those other websites choose to place their banner ad, or what is the nature of the site's users. Indeed, often the target audience is among those least likely to have access to or have the knowledge and expertise to use the Internet. Extreme limitations exist in a message that must be delivered in a quickly observed 1" by 3" banner ad, which also have very low click-through rates (estimated at 0.5% in 2000). Internet ads – as well as traditional TV commercials – are also being blocked or skipped over with computer software and digital TV recorders. And many people are increasingly concerned about privacy, monitoring, and data-mining issues associated with computer/Internet use, and increasingly so with digital TV recording and even mobile phone use. Further, there is no associated "public service" mandate to motivate web sites to host online PSAs.

Education-Entertainment Approaches

Some campaigns have engaged in cooperative efforts with the entertainment industry to produce attractive music videos and PSAs, to insert themes in popular TV programs, or to create prosocial television series (Singhal, Cody, Rogers, & Sabido, 2004). Examples include the PBS Freestyle programs seeking to diversify gender occupation roles (LaRose, 1989), designated driver portrayals inserted in prime-time entertainment programs (Winsten & DeJong, 2001), and the South African TV series *Soul City* to promote healthy practices (Singhal & Rogers, 2001).

This form of campaign consciously mixes theories of *social modeling* (providing role models for behavior and attitudes), *parasocial interaction* (getting the audience personally involved in the characters and content), and *expectancy value* (combining perceived social norms with beliefs about the source's normative expectations) with commercial entertainment values, media personalities, and wide-scale distribution. Celebrities often provide credible and influential sources, especially for certain at-risk populations who distrust, or are not otherwise exposed to, traditional authority figures. This campaign approach also generates revenues through successful programming that allows sustainability, improvement, and expansion over time.

However, Singhal and Rogers (2001) noted a variety of ethical issues in such campaigns, including (1) how well the social change goals match the moral and values guidelines of the campaign, (2) who establishes just exactly what is or is not "prosocial", (3) the extent to which all audience segments receive the positive and helpful messages equally or eventually, (4) whether the entertaining message is somehow indirect or even subliminal rather than an explicit communication campaign, (5) how sociocultural equality – inclusion of all relevant voices – can be achieved through entertainment-education, and (6) how to avoid unintended negative effects.

Media Advocacy

A complementary approach to campaign implementation is *media advocacy* (Piotrow & Kincaid, 2001; Wallack & Dorfman, 2001). In line with the critique that most campaigns emphasize individual blame and personal responsibility, this approach emphasizes the wide range of social forces that influence public health, particularly the salient and consequential policy issues that are ignored by most communication campaigns. This approach has been notably successful using the media to initiate societal level reforms relating to alcohol and tobacco issues.

While the media are key vehicles for communication campaigns, certain types of media content can also produce a wide variety of contradictions for public communication campaigns (Wallack, 1989). A wide variety of unhealthy behaviors and antisocial attitudes are shown in both programs and commercials on television. Stereotypes of gender roles, race relations, age-specific behaviors, behavior by medical personnel, sexual relations, and treatments of physical and mental problems are all developed and reinforced through media portrayals that overwhelm attempts by other messages to reduce such stereotypes. In the media, health and social problems are also portrayed as individually caused and individually solved, avoiding discussion of the social and economic causes.

Instead, successful campaigns must be linked to broader community action (see Bracht, 2001; Dervin & Frennette, 2001; Dozier, Grunig, & Grunig, 2001; Flora, 2001). As the systems model proposed by Rice and Foote (2001) indicated, many broad and pervasive pre-state conditions can overwhelm or prevent any campaign intentions or messages. Thus, populations, policy, and public agendas should be the primary targets of health campaigns – the salient audiences are the stakeholders and potential participants in any social change process.

This requires a media advocacy approach – "the strategic use of mass media in combination with community organizing to advance healthy public policies" (Wallack & Dorfman, 2001, p. 393). It explicitly attempts to associate social problems with social structures and inequities, change public policy rather than individual behavior, reach opinion leaders and policymakers, work with groups to increase involvement in the communication process, and reduce the power gap instead of simply providing more information. The four primary activities involved in media advocacy include (1) develop an overall strategy that involves formulating policy options, identifying the stakeholders that have power to create relevant change and apply

pressure to foster change, and developing messages for these stakeholders, (2) set the agenda, including gaining access to the news media through stories, news events, and editorials, (3) shape the debate, including framing the public health problems as policy issues salient to significant audiences, emphasizing social accountability, and providing evidence for the broader claims, and (4) advance the policy, including maintaining interest, pressure and coverage over time.

Accessing Online and Digital Media

Increasing Use of Online and Digital Media for Communication Campaigns

The Internet is becoming a major source for online health information, discussion, therapy, access to physicians, and, more recently, campaigns and interventions (Rice, 2006; see also The International Society for Research on Internet Interventions, http://www.isrii.org). The Internet may be particularly relevant for college students and young adults, as they search (equally by men and women) for online health information more than other groups, although emphasizing certain kinds of health topics, such as diet and nutrition (Hanauer, et al., 2004). However, shortcomings of online health information include inconsistent quality, difficulties in finding and using the information, access problems for population segments, and harm from inaccurate or misleading information (Benigeri & Pluye, 2003; Rice & Katz, 2001).

The interactive CHESS system, designed for adolescents, was one of the first computer-based campaigns (Hawkins, et al., 1987). It provided confidential, nonjudgmental health information, behavioral change strategies, and sources of referral across five adolescent health areas: alcohol and other drugs, human sexuality, smoking prevention and cessation, stress management and diet and exercise. More recently, the number of Medline citations to "web-based therapies" rose 12-fold from 1996 to 2003 (569 citations overall), leading Wantland, et al. (2004) to prepare the first meta-analysis comparing behavioral change outcomes of web-based vs. non-web-based interventions. Twenty-two articles, involving nearly 12,000 participants, reported effect sizes from -.01 to .75. Outcomes involved exercise time, nutritional status knowledge, asthma treatment knowledge, healthcare participation, reduced decline in health, perception of body shape, and maintenance of weight loss. Other reviews of online/digital media interventions are provided by Griffiths, et al. (2006), Neuhauser and Kreps (2003), Rice and Katz (2001), and Walther, et al. (2005). Table Two provides some examples of such campaigns.

--- Table Two Goes About Here ---

Researchers are examining the potential roles of new communication media, such as electronic mail, voice response systems, interactive video, DVD and CD-ROM, and computer games, in reaching particular at-risk populations and in influencing learning, attitudes, and behaviors (Buller, et al., 2001; Lieberman, 2001; Piotrow & Kincaid, 2001; Rice, 1984; Rice & Katz, 2001). Lieberman (2001, p. 377) recommended that campaign designers take advantage of the interactive, multi-media, networked, personalized, and portable aspects of these new media. This allows computer-mediated campaigns to apply young people's media and genres, use characters that appeal to that age group, support information seeking, incorporate challenges and goals, use learning-by-doing, create functional learning environments, facilitate social interaction, allow user anonymity when appropriate, and involve young people in product design and testing.

Email is a straightforward campaign medium. Interpersonal components of campaigns might be extended through the use of email, such as in the Digital Heroes Campaign (DHC), in which online mentors were matched with 242 youth for two-years to foster better youth development (Rhodes, et al., 2006). One workplace health campaign sent emails daily for one

year providing health tips suggesting physical activity, increased fruit and vegetable intake, and relevant web-sites including self-monitoring and comparison tools (Franklin, et al., 2006).

Even the Internet will not be the only, or in some cases the best, form of convergence across digital communication/information technologies. Different technologies can be combined to take advantage of their specific features. For example, one trial assessed the effect on perceived control, intention to exercise, and moderate physical activity of a completely automated Internet and mobile phone system (compared to a no-support control group) (Hurling, et al., 2007). The participants entered their perceived barriers and received tailored solutions, a dialogue therapy module to help shape beliefs about exercise, a schedule for planning exercise sessions, mobile phone and/or email reminders, a message board for use by all participants, feedback on their activity, and a wrist-band accelerometer (which captured and reported activity data in real-time, via a wireless connection to the mobile phone). Adults who participated in an intervention featuring an automated, computer-controlled telephone system offering educational feedback, advice and behavioral counseling showed improvements in their nutrition behavior and overall diet (Delichatsios, et al., 2001).

As a greater percent of the US (and more so in most countries) has adopted mobile phones than the Internet, and as income is less a factor in the mobile phone digital divide than in the Internet digital divide (Rice & Katz, 2003), and because they are, well, mobile, personal, and increasingly multi-media, mobile phones may be more effective media for tailored, wide-reaching, interactive and continuing health interventions (Tufano & Karras, 2005). Computers and personal digital assistants (PDAs) are limited in developing countries because of their expense and requirement for additional equipment, such as relatively complex network connections. Cell phones, which are ubiquitous and cheaper than most computers and PDAs, offer a simple complement or alternative. Curioso (2006) described an application of telehealth program using cell phones and the Internet to collect, transmit and monitor data in real-time from female sex workers (FSW) who were part of a twenty-city randomized trial in Peru to reduce sexually transmitted diseases (STD). Electronic short message service (SMS) may be used to provide health promotional messages, though apparently more successfully for younger and higher social class users (Trappey & Woodside, 2005).

RSS feeds are already being used in campaigns such as the Johns Hopkins Bloomberg School of Public Health's Center for Communication Programs to distribute up-to-date changes and new entries about health information. Blogs allow users with similar health information needs and concerns to share their views and experiences. Podcasts are another, audio-based, means of providing relevant information to target audiences at their convenience, while wikis support collaboration among project members (Haylock & Rabi, 2007). The Kaiser Family Foundation's Program for the Study of Entertainment Media and Health is especially interested in how health-related and other nonprofits and government agencies can use new digital media such as social networking, user-generated content, and gaming to enhance their communications strategies (http://www.kff.org/about/entmediastudies.cfm).

Lieberman (2006) reviewed nine kinds of learning associated with videogame use. Four of those are directly relevant to campaigns: knowledge, skills and behaviors, self-regulation and therapy, and attitudes and values. Concerning knowledge, interactive games require the processing of new information and feedback in order to solve a problem. Interactive health games for those with chronic health conditions (such as diabetes or asthma) or in need of health knowledge (such as children's vegetable and fruit consumption) can improve self-care skills and behaviors, leading to improved health outcomes. Dealing with physical or mental treatment and

problems may be improved through interactive games as well, by means of increased self-regulation, emotion management, social interaction, distraction from pain, and tolerance of phobias. Self-efficacy can be improved through success in vicarious experiences. Role-playing and modeling through videogames may both allow more direct experience with modeled and rewarded behaviors, although most commercial popular games include negative and aggressive roles and behaviors. Three-dimensional massively multiplayer online role-playing games (MMORPGs) are another opportunity for promoting health and behavior change, allowing users to simulate behaviors and their consequences, in interaction with other users (by means of online avatars) (Annang, Muilenburg, & Strasser, 2007).

Characteristics of Online and Digital Media for Campaigns

Central to an understanding of the role of new media in campaigns are the concepts of *interactivity*, *narrowcasting*, and *tailoring*.

McMillan (2002) explicated two primary dimensions of *interactivity* -- direction of communication, and level of receiver control over the communication process. Based upon the two dimensions, the four kinds of relationships between the user and the source include *monologue*, *feedback*, *responsive dialogue*, and *mutual discourse*. These four cells can be associated with specific design features, such as surveys, games, purchasing products or services, email, hyperlinks, chat rooms, etc. Understanding the concept, and application, of interactivity has significant implications for both the underlying philosophy of an internet-based campaign as well as the design features and evaluation criteria – for example, concerning the directionality and symmetry of the relations between the source and the audience. However, the majority of health-related websites use some, but not many, interactive components, and those are more frequent in .com vs. .gov or .org. sites (McMillan, 2002; Rice, Peterson, & Christie, 2001; Stout, Villegas, & Kim, 2001).

In order to avoid by now familiar problems associated with online health information (noted above), Rimal and Adkins (2003) suggested applying social marketing principles to *narrowcasting via segmentation* and targeting Internet users. The goal is to find the best mix among the least number of media channels and messages to be effective, and the audience segment most homogenous (based on theory) about the particular risk. The characteristics of the various targeted media must be matched with the campaign goals, and the messages must be tailored to match the theoretically relevant audience characteristics. This is how the Internet and other digital media are especially relevant, as some of their characteristics are much better matched to some campaign goals, audience segments, and especially message tailoring. Interactive/individualized feedback is more effective at increasing motivation to make more healthy food choices than is general nutrition information, likely because of the increased attention and cognitive processing from the user, and less redundant content (Brug, Oenema, & Campbell, 2003). As an example of narrowcasting and the value of anonymity and peer communication, in an online survey of more than 4600 people, most people indicated that they would visit a STD/HIV prevention website to get information, but that they would not open an email or chat about the information within the website (Bull, McFarlane, & King, 2001). However, those most at risk were more likely to do so, implying a useful alternative to physical STD prevention settings and complement to STD information in clinic settings.

The CDC-sponsored Guide to Community Preventive Services (2005) has stressed the importance of *tailoring* to individual and/or targeted population characteristics (Tufano & Karras, 2005). “Tailoring is a process of designing messages to reflect individual’s needs, interests, abilities and motivations, which are derived from an individual assessment (Kreuter,

Farrell, Olevitch, & Brennan, 2000). Based on the screening data, the program chooses the most suitable responses, which are then integrated into an advice and displayed to the respondent" (Brunsting & van den Putte, 2006, pp. 314-315; see also Ryan & Lauver, 2002). Aspects of tailoring that seem particularly responsible for positive results is providing feedback, self-monitoring, and even the process of entering one's own data, in some cases fostered by regular prompts. Tailored communication is generally more effective than generic messages in promoting health behavior change (Neuhauser & Kreps, 2003).

Rimal and Adkins (2003) reviewed studies showing the positive outcomes (exposure, attention, use, recall, credibility, behavior change) of campaigns using tailored messages in general, and online- or digital media-based tailored message in particular. These positive outcomes seem to be due largely to increased relevance, perceived risk, and self-efficacy, all enhanced through feedback. Computers (online, disk-based, mobile, etc.) in particular support tailoring and feedback through interactivity ("complexity of choice, effort exerted by users, responsiveness, monitoring of information use, easy of adding information, and facilitation of interpersonal communication", p. 506 [Heeter, 1989], and "multimodality, telepresence, networkability, temporal flexibility, sensory vividness, and anonymity," p. 507 [Rimal & Flora, 1997]).

Computer-based interactivity, narrowcasting and tailoring are good matches with the transtheoretical (stages of change) model (Prochaska & Velicer, 1997) as the system can ask questions that identify the user's stage of change (and thus potential motivators such as intention, attitude, self-efficacy, subjective norms, etc.), and then provide appropriate information and activities. For example, a study to identify the demographic factors influencing 10,000 self-registered heavy drinkers' exposure, use, attrition, completion, and self-reported impact (on dependency, harms, and mental health) of a 6-week web-based intervention (Down Your Drink) (Linke, et al., 2007) was based explicitly on the transtheoretical model. There were six stages, with a different module each week, involving motivational enhancement, cognitive behavioral therapy, relapse prevention, drinking diary, consumption calculator, quizzes, behavioral analysis of drinking situations, email or SMS that send reminders and tips, and a nonmoderated listserve. Although attrition was high (83.5% did not finish all six weeks; most of these left after the first week; and those were more likely at risk of alcohol dependency and of harm from alcohol use), outcomes were all improved for those who did. The authors note that while attrition is high, the marginal cost for any completion is very low; consider that this intervention provided significant results on all outcome measures for over 1500 heavy drinkers. Brunsting and van den Putte (2006) analyzed the effectiveness of a Dutch computer-tailored intervention that targeted excessive alcohol users who are not inclined to seek treatment, and which also was based on the transtheoretical model. The site attracted over 100,000 users in the first two weeks, and 10,000 per month thereafter. Such tailored drink tests can also be integrated with other forms of support, such as, after receiving the tailored advice, calling a help-desk or sending questions about the advice by e-mail. Etter (2005) analyzed use and smoking quitting rates of nearly 12,000 users of two sites at time 1 and over 4,200 users at time 2. Only former smokers, and smokers in the contemplation stage of change, increased their abstinence rates after using the original version of a tailored program (Stop-tabac.ch) that was shorter and provided more information on nicotine dependence and nicotine replacement therapy, and less on health risks and coping strategies, compared to a more comprehensive and interactive version of the tailored program. An innovative use of "tailoring" is to provide an interactive website for patients to gain tailored feedback about their condition and then be provided related questions to ask their physicians

(Hartmann, et al., 2007). Other examples explicitly applying this model include the Consider This web-based smoking cessation and prevention program for children (Buller, et al., 2001), and children's interactive CD-ROMs and videogames (Lieberman, 2001).

Other relevant characteristics include "…presence, homophily, social distance [including stigma management], anonymity/privacy, and interaction management [including both degree of participation and forms of expression]" (Walther, et al., 2005). Walther, et al. explored the theoretical foundations for why each of these attributes should facilitate such outcomes, through mediating processes of learning, social influence (including patient compliance) and coping.

Engage the Community

A related means of integrating media and interpersonal communication is to conduct and involve campaign activities at and by the community level (Bracht, 2001). Dearing (2001, p. 305) observed that "social change occurs because of complementary and reinforcing information circulating through social and organized systems that constitute a community…[by means of] multiple positively related interventions at multiple levels of impact with a given geographic area." Note that while we list community engagement late in the list of campaign components a truly community-based campaign would engage stakeholders right from the start. Indeed, many funding agencies now require community involvement as part of the design and implementation protocol. One of the central motivations for community-based campaigns is to empower communities, their voluntary associations and their members through local initiation and activities. This "social ecology-based" approach is fundamentally different from the typical "social planning" approach in which external change agencies providing expertise and solutions for individuals (or "clients") within a community but with some form of community sponsorship (Dearing, 2003). Dearing reviewed the elements of successful community organizing, emphasizing the necessary but difficult balance between external and community-based resources, expertise, and agendas. Sustainability and institutionalization of the initiative's objectives should be a central focus for health communication practitioners.

Bracht (2001) described five key stages in organizing community campaigns: (1) Conduct a community analysis, including identifying the community's assets and history; defining the community according to geographic, population, and political jurisdiction; collecting data with community participation; and assessing community capacity and readiness for change; (2) Design and initiate the campaign, including developing an organizational structure for collaboration, increasing community participation and membership in the organization, and developing an initial intervention plan; (3) Implement the campaign, including clarifying the roles and responsibilities of all partners, providing orientation and training to citizens and volunteers, refining the intervention plan to accommodate local contexts, and generate broad citizen participation; (4) Consolidate program maintenance, including maintaining high levels of volunteer effort, and continuing to integrate intervention activities into community networks; and (5) Disseminate results and foster sustainability of the community campaign, including reassessing campaign activities and outcomes, refining the sustainability plan, and updating the community analysis.

Community-level approaches were emphasized in the Stanford heart disease prevention programs (Flora, 2001). Three models of community mobilization were applied as appropriate: (1) *consensus development*, or participation by diverse community members, (2) *social action*, or mobilizing the community to create new social structures and engage in the political process, and (3) *social planning*, or using expert data to propose and plan system-wide change. Campaign messages, resources, and activities were developed and implemented through media, training

instructors, workplace contests and workshops, schools, restaurants and grocery stores, health professionals, and contests or lotteries.

New media may be especially useful for community campaigns. In 2001, a Canadian urban community used an interactive web site (with messages about health risks and about city council events) and email as the primary components (in addition to public posters and billboards, and media coverage) of a campaign to advocate revising a smoking bylaw (to better protect children under 18 from second-hand smoke) in a conservative province resistant to government regulation. An internet survey and focus group found that over two-thirds contacted the city council during the campaign (about a third had ever contacted the council before the campaign), and half indicated they were more likely to become involved in civic issues, partially due to increased capacity for political involvement (Grierson, et al., 2006). This lead to a final revision of the smoking bylaws, though not as complete as had been desired. Involvement in the web site influenced 76.4% to discuss the bylaw with others, and 63.8% to forward the site link to friends. Evaluation of the campaign emphasized the importance of "community capacity building", which includes individual and collective assets from community residents to improve quality of life, especially when some issue inspires or threatens their well-being, and which requires reliable access to decision-making process and to the knowledge and skills necessary to create community change. Citizen participation (diverse members, collective action, and defining as well as implementing change) and social trust are two major indicators of community capacity building (Grierson, et al., 2006).

Online or CD-ROM resources are becoming available for community campaign development and implementation. Finnegan, et al. (2001) describe the use of the World Wide Web to make available to communities intervention technology addressing the problem of patient delay in seeking care for heart attack symptoms, based on their experiences with an 18-month 20-community treatment/control field experiment involving the effectiveness of fostering rapid response to heart attacks. They discuss the 10 steps they used in implementing the site, similar to stages in social marketing: Preliminary questions, data gathering, 2) Define scope and mission, 3) Detailed outline of Web site sections, 4) Visual representation of site organization, 5) Site layout, page design decisions, and user interface, 6) Collection of materials, 7) Technical training, 8) Technical development (implementation) of the design, 9) Development and implementation of a maintenance plan, and 10) Development and implementation of an evaluation plan. The site provided detailed information on how to develop community-based interventions, including case material from each of the field experiment treatment communities. CD-ROMs for health communication campaign planning and evaluation are available from the Centers for Disease Control (CDCynergy) and the Johns Hopkins School of Public Health's Center for Communication Program (SCOPE--Strategic Communication Planning & Evaluation). Other community-oriented campaign resources include The Benton Foundation (2007), The Communications Network (2007), Smart Chart 2.0 (2007), and The SPIN Project (2007) (all specifically oriented toward nonprofit organizations).

Lieberman (2006) advocated integrating community campaigns with online community games, which involve considerable social interaction, knowledge sharing, collaboration, and collective benefits, with both diverse as well as very targeted participants. Associated with the popular games are fan sites and discussion groups, which increase identification, knowledge, and social contacts. Mobile services and devices are also becoming part of virtual communities for health interventions (Leimeister & Krcmar, 2006), as they allow real anytime-anyplace access to the community platform.

Conduct Summative Evaluation

"Evaluation is the systematic application of research procedures to understand the conceptualization, design, implementation, and utility of interventions" (Valente, 2001, p. 106). Valente proposed that a comprehensive evaluation framework includes (1) assessing needs, (2) conducting formative research to design messages, (3) designing treatments, comparisons, instruments, and monitoring methods, (4) process research, (5) summative research, and (6) sharing results with stakeholders and other researchers. Developing an evaluation plan as an initial part of the campaign forces implementers and researchers to explicitly state the desired outcomes of the campaign, and how it will be implemented to obtain those goals. The actual financial and time costs of evaluation are real, but are extremely valuable investments, both for the current campaign stakeholders as well as for stakeholders of subsequent campaigns.

Valente (2001, 2002) summarized classical study designs that help reduce threats to validity due to selectivity, testing, history and maturation, and sensitization. Levels and timing of interventions and outcomes influence whether cross-sectional, cohort, panel, time-series or event-history designs are most appropriate, and whether interventions occur at the individual, group or community. Other factors to consider are the roles of self-selection, treatment diffusion across communities, and communication and influence through interpersonal and mediated networks.

Proper summative evaluation can distinguish between *theory failure,* the extent to which underlying causal chains are rejected by the evaluation results, and *process or program failure*, the extent to which the implementation of the campaign was inadequate or incorrect, thus allocating blame, credit, and lessons for future campaigns accordingly (Valente, 2002). Note that theory drives the design of messages and interventions, and thus the basis for evaluation, as theory is required to specify the causal processes and temporal sequence of inputs and outcomes. *Summative evaluation* consists of identifying and measuring answers to question about six campaign aspects: (1) the *audience* (e.g., size, characteristics), (2) *implementation* of the planned campaign components (e.g., dissemination of messages and/or services), (3) *effectiveness* (e.g., influence on attitudes, behaviors, and health conditions), (4) *impacts* on larger aggregations (e.g., families or government agencies), (5) *cost* (e.g., total expenditures, and cost-effectiveness), and (6) *causal processes* (e.g., isolating the reasons why effects occurred or not) (Flay & Cook, 1989).

A Systems Perspective

Rice and Foote (2001) suggested a *systems-theoretical* approach to planning campaign evaluation, with particular application to health communication campaigns in developing countries. The basic assumption underlying this systems approach is that campaign inputs intended to alter prior states are mediated by a set of system constraints and enter into a process whereby some inputs are converted into outputs, thus evolving into a new post-state and altering system constraints. Campaign evaluation planning must match the timing and nature of inputs (such as media channels, messages, and material resources) and measurements with relevant phases of the system. The approach includes these stages: (1) specifying the goals and underlying assumptions of the project, (2) specifying the model at the project level, (3) specifying prior states, system phases, and system constraints, (4) specifying immediate as well as long-term intended post states, and guarding against unintended outcomes (boomerang effects), such as normalizing the unhealthy behavior, psychological reactance, and generating anxiety through fear appeals to those with low self-efficacy (Atkin, 2001), (5) specifying the model at the individual and the social (e.g., community network) levels, (6) choosing among

research approaches appropriate to the system, and (7) assessing implications for design.

As a part of a process evaluation, Rice and Foote distinguished between *planned*, *real*, and *engaged* inputs. Informed campaign evaluations should measure and analyze these kinds of inputs separately. For example, Synder's (2001) meta-analysis of 48 U.S. health campaigns found that an average of only 40% of people in intervention communities reported being exposed to their particular campaign. The Stanford Five-Community Study collected extensive data on message objectives, content, reach, and exposure, so it could explicitly evaluate the quantity of programming, broadcasting and interpersonal delivery, and engagement of a broad range of communication interventions. Similarly comprehensive programs of systems planning and integrated campaigns have been applied to complex problems such as rat control in grain-producing countries and community-wide issues such as adolescent drinking (Adhikarya, 2001; Bracht, 2001).

Challenges to Evaluating Online/Digital Media Campaigns

While online/digital media campaign components provide many benefits and opportunities (see below), they also present many new challenges. These include the increasing inability to identify and to reach known subpopulations, the shift from the broadcast mode of traditional mass media to the increased personalization of new media, the individual user's creation of and even interaction with specific sequences and forms of content, the use of multiple media forms to learn more about a particular topic, and the significance of peer-to-peer communication (Livingstone, 2004). These challenges create several methodological problems, including trying to observe actual behavior, and determining the meaning of these individually-created multi-media experiences (with sites and content that themselves change or even disappear without any archival record).

Other challenges include how recruitment methods, and patient characteristics, are related to participation rates, engagement, and continued participation (Glasgow, et al., 2007). Getting people to use web-based interventions, even when randomly assigned into that condition, is difficult (Verheijden, et al., 2004). There is considerable variation in how to assess "exposure" to the intervention. Using the example of ChewFree.com, a randomized control trial of a smokeless tobacco cessation program on the web, Danaher, et al. (2006) identified and defined measures such as email prompts (related to the intended "quit date" tailored to the quitting method, support messages, and messages encouraging those who were not using the site regularly), sessions/visits (number, duration, pattern, usage atrophy rate), and viewing (number, page types, postings). Online interventions run the risk of not only selective enrollment, but also selective retention (that is, use over multiple times, or through the length of the intervention). Verheijden, et al.'s (2007) analysis of the use of a tailored online lifestyle/physical speculated that the minimization of stigmatization about bodyweight through individual, anonymous Internet sites may help account for the greater ongoing use by the specific target obese audience; but they also note that other target categories (those higher in physical activity and in vegetable consumption) were less likely to continue using the site. Another challenge to the use of interactive and tailored sites is determining the reliability and validity of the measures, because of different psychometric properties (for example, different groups of respondents answer only different small subsets of the entire set of questions, questions may be grouped on the basis of commonly understood symptoms rather than an underlying concept, sufficient sample size for each subset of answered items may be difficult to determine) (Ruland, Bakken, & Røislien, 2007). Dynamic, hyperlinked web sites are not amenable to all traditional evaluation methods, and few standard criteria yet exist for evaluating health-related web sites. Schneider, et al. (2001) developed a multi-method

evaluation of the US federal Medicare site (online survey of Internet users, online survey of visitors to the site, an expert review, focus groups, and a focus group with visually impaired Internet users). They recommend using the above methods as well as usability testing, interviews with web site managers, interviews with stakeholders, online focus groups, asynchronous forums, web usage/log analysis, analysis of emails from users, and backward compatibility assessments (to see how users with older browsers or systems would experience the site).

Assessing Effectiveness and Effects

Regarding the degree of effects, a meta-analysis of 48 mediated health campaigns (Snyder, 2001) showed 7% to 10% more overall behavior change by people in intervention communities than in control communities, representing a correlation of .09. Promoting new behaviors seems more effective than stopping old behaviors or preventing new behaviors (12% compared to 5% and 4%), and enforcement strategies and provision of new information both noticeably increased outcomes (17% and 14% change).

However, assessing campaign effectiveness is not easily achieved, even with sophisticated summative evaluation designs. This is because "effects" are not the same as "effectiveness" and what constitutes "effectiveness" itself is controversial and often ambiguous (Salmon & Murray-Johnson, 2001; Atkin & Salmon, 2003). At least six measures of "effectiveness" may be considered.

1. *Definitional effectiveness* is somewhat political: it is the extent to which various stakeholders attain success in having a social phenomenon defined as a social problem. As noted above, Paisley (2001) considered this problem in terms of getting the problem on the public agenda – just how important <u>is</u> this health problem, anyway? -- and defining campaign interests as first-party or second-party advocacy. For example, Butler (2001) showed how the "Got Milk?" campaign was fraught with issues of industry sponsorship and lack of evaluation in spite of federal regulations and counter-indicative research.

2. *Ideological effectiveness* concerns whether the problem is defined as primarily individual or social; that is, should alcohol abuse be seen, and treated as, primarily an issue of individual responsibility (as in the "designated driver" television campaign – see Winsten & DeJong, 2001), or should it be considered as embedded in extensive advertising and entertainment portrayals of drinking?

3. *Political effectiveness* is the extent to which a campaign creates visibility or symbolic value for some stakeholder, regardless of other outcome measures.

4. *Contextual effectiveness* assesses the extent to which the intervention achieved its goals within a particular context. For example, education, enforcement or engineering approaches are differently appropriate for different problems (Paisley, 2001), so it would be unfair to evaluate (and probably unwise to implement) an attitude-change campaign if engineering approaches are the most suitable (such as reducing automobile exhaust).

5. *Cost-effectiveness* concerns the tradeoffs between different inputs and outputs, over time. For example, prevention campaigns may in fact save much more money over time than treatment campaigns, but the outcomes are harder to measure and occur over lengthier time spans. Further, treating some problems (such as those with low prevalence, or those that generate widespread fear) may generate increased costs in other areas, thus lowering health effectiveness overall.

6. Finally, *programmatic effectiveness* is probably the most familiar approach, whereby campaign performance is assessed relative to its stated goals and objectives.

Salmon and Murray-Johnson showed that campaigns should be assessed on two

dimensions: whether or not effects were obtained, and whether or not the campaign was effective. The resulting four conditions lead to very different overall evaluations. For example, public service announcements for local health agencies may be quite effective in attaining high and measurable exposure while failing to achieve an effect in measurably increasing referrals or visits or reduced illness.

Unintended Effects

Campaign evaluations rarely consider potential unintended harmful consequences (such as decreasing pressure to provide interpersonal support, increased isolation, reducing the visibility of the problem and thus reinforcing the stigma, etc.), or of associated costs not specifically part of the intervention (such as costs to local health services or patients' social networks) (Griffiths, et al., 2006). Discussion among participants in a online campaign intervention (such as through a chat or discussion feature) is one possible unintended effect, as it may generate a boomerang effect (due to increased discussion about the topic, earlier counter-arguing, greater portrayal of consensus or majority attitudes, possibly by more dominant or deviant members) or increased adherence to initial beliefs (David, Cappella, & Fishbein, 2006). Cho and Salmon (2007) developed a typology of unintended effects that provides a conceptual framework for such possibilities. Their model first identifies five dimensions where unintended campaign 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). Across these five dimensions, 11 types of unintended effects may differentially occur (for example, all 11 may be associated with undesirable valence, but only three are associated with short-term): obfuscation, dissonance, boomerang, epidemic of apprehension, desensitization, culpability, opportunity cost, social reproduction, social norming, enabling, and system activation (pp. 299-301).

Consider Ongoing Challenges

A variety of theoretical and practical challenges and tensions continue to exist in the design, implementation, and evaluation of public communication campaigns. Many important social problems involve *collective benefits* (such as reduced litter), yet most campaigns have succeeded only when they promote *individual benefits*. How can campaigns increase the salience of collective benefits, the focus of many campaigns in China (see Liu, 2001), or the foundation of environmental campaigns (Cox, 2006)? What is the proper mix of *education* and *entertainment*? Will or should new "infotainment" campaigns be embedded in the commercial media mainstream (Singhal, et al., 2004; Singhal & Rogers, 2002)? How can campaigns, which generally use the media channels, overcome the *simultaneous pervasive negative influence of the mass media* on campaign issues such as drinking, violence and environmental damage (Moser & Dilling, 2007; Wallack & Dorfman, 2001)? Few theories or campaign designs explicitly distinguish *short-term* from *long-term* effects and objectives. What should be the relative emphasis on each, and how can campaigns achieve longer term outcomes (McGuire, 2001; Valente, 2002)? What is the proper mix of *interpersonal*, *mass media* and *new interactive media* communication for specific campaign goals (Cappella, et al., 2001; Rice & Katz, 2001; Murero & Rice, 2006)? How can campaigns successfully promote a *prevention* approach in order to avoid the more expensive *treatment* approach typically favored by organizations, government agencies, and the electorate (Dervin & Frennette, 2001; Rice, 2001; Wallack & Dorfman, 2001)? What are the relative influences of *individual differences* versus *social structure* on the problems targeted by communication campaigns (Piotrow & Kincaid, 2001; Rice & Foote, 2001)? How can campaigns *communicate effectively with young people*, who have fundamentally different

evaluations of risk and future consequences, who are using radically different interactive and personal media, and who are deeply embedded in both face-to-face and, increasingly, online and wireless peer networks (Kim, Kim, Park, & Rice, 2007; Piotrow & Kincaid, 2001)? Finally, how can campaigns resolve the wide-ranging *ethical implications* of the many choices required throughout the process (Guttman, 2003)?

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Table One.
Recent campaign resource books
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An increasing number of monographs, textbooks, and readers have been published on the subject of campaign communication, primarily by scholars in the areas of mass communication, social psychology, and public health. This section briefly identifies the basic content of key books published since 2000:

- Crano and Burgoon (2002) organized a series of theoretical perspectives and research studies focusing of the role of the media in drug abuse prevention
- Cox (2006) focused on the role of media and public forums (scientists, lobbyists, corporations, advocacy groups, etc.) in shaping perceptions of the environment and actions relating to the environment
- Edgar, Noar and Freimuth (2007) analyzed public and private communication about HIV/AIDS in the US and other countries
- Hornik (2002) presented 16 major studies using various methods to investigate health communication programs in many nations
- Klingermann and Roemmele (2002) packaged an array of chapters about public information campaigns in European countries, with an emphasis on practical applications
- Kotler, et al. (2002) discussed social marketing approaches to health promotion
- Lederman and Stewart (2005) examined campaign strategies in the context of alcohol prevention programs
- Moser and Dilling (2007) presented various perspectives on effective communication, public outreach and education influencing policy, collective action and behavior change related to climate change
- Perloff (2003) described persuasion theories and applications relevant to campaign message design
- Rice and Atkin (2001) assembled more than two dozen perspectives on public communication campaigns (this chapter summarizes main points of many of these)
- Rice and Katz (2001) and Murero and Rice (2006) brought together a wide range of researchers who analyzed changes in health care, information seeking, and support associated with internet technologies
- Singhal, et al. (2004) traced the history and review international cases of the expanding practice of entertainment-education to promote health
- Stiff and Mongeau (2003) provided an overview of theoretical models pertinent to persuasive strategies in communication campaigns
- Thompson, Dorsey, Miller, and Parrott (2003) presented a comprehensive handbook featuring coverage of health campaigns
- Thorogood and Coombes (2004) provided a tutorial on methods (qualitative and quantitative) for implementing and evaluating health promotion interventions
- Tones and Green (2004) offered an international perspective on the complexities of health promotion strategies
- Valente (2002) comprehensively explained the frameworks, theories, research designs, and analytical methods used to evaluate health promotion programs
- Wilbur (2006) provided a tutorial on social marketing and then applies the principles to water-related environmental contexts.

- Witte, Meyer and Martell (2001) presented a detailed blueprint for constructing effective health messages
- The U.S. Department of Health and Human Services (2003) developed an elaborate manual presenting useful guidance on the design of health programs

Table Two.
Examples of online and digital media campaigns
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- Some of the variety available using online campaigns is illustrated by comparing two sites about road safety: a Canadian site providing information (50000victimes.com) and a Spanish site (http://www.meimportaunhuevo.com/) providing an interactive game in which the user tries to avoid having eggs fall off a conveyor belt, with the last egg having the name of a person under 25 the user named earlier.
- "Check Your Drinking" is a component of the online Alcohol Help Center, which compares participants' self-reported drinking to others in similar demographics (Cunningham, et al., 2006). Users in one small trial reported greater usefulness and accuracy (for problem drinkers compared to moderate drinkers), and decreased drinking three months later. Two potentials of such sites is the ability to be used by groups who might not otherwise seek help from clinics and agency services, and to improve the screening questions over time.
- A Canadian campaign (http://www.protectyourhead.com/) (with associated print ads) to raise awareness around the risks of brain injuries seeks to convince people to wear a helmet every time they perform potentially risky activities, such as biking, skating, but also working in a construction site. The website features a 3D brain that simulates what everyday social situations may be like after suffering brain injury. Users can take a series of tests by answering questions or playing little games that show how one's capabilities may result if the head is not protected.
- A Spanish campaign draws attention on the importance of donating blood on a regular basis (http://www.5segons.com/watch.php?id=2&v=K9hsIu6jPIg).
- An alcohol education CD-ROM featuring video, text, music, graphics, and animation was most effective at reducing estimates of peer alcohol consumption among students compared to a lecture about alcohol education and to a control group (Reis, Riley, & Baer, 2000).
- An intriguing, if somewhat disgusting, viral campaign (http://www.pourquoitutousses.be/site/index.asp) launched in Belgium by OgilvyInteractive for Pfizer and the World No Tobacco Day allows visitors to send "personalized" smoker's coughs to their friends, adjusted by volume, duration and dryness of the cough.
- CDC's 2006 Seasonal Influenza Campaign used new media to enhance promotion of influenza vaccination uptake among traditional and new audiences, including: specialized podcast episodes, wide distribution of a customized graphical bug, a webinar for blog writers, virtual vaccinations for younger audiences, and messaging via online social networks (Edgerton, et al., 2007).
- From Australia, an edutainment "Battle for the Bronchs" site (http://www.battleforthebronchs.com.au/) is an interactive comic book combining live action video set in an illustrated city inside a pair of lungs, aimed at young people who may suffer from asthma but tend to ignore the warning signs and avoid traditional health management messages.
- In France a new site was launched to spread the word about the risk of sexual encounters, and explain to teenagers (but not only to them) what can put them at risk of contracting AIDS. The site, called www.touteslesrencontressontpossibles.com (all possible encounters) was developed using a style that is serious but engagingly amusing at the same time. The site uses graphics and drawings to picture typical summer situations and send out straightforward messages to teens. Users can select an avatar and follow the path unveiled after the choice.

- In the UK, MTV launched an educational advergame (http://www.staying-alive.org/me/game/index.html) to guide teens through life's sensitive issues. The edugame was produced with the support of the Youth Peer Education Network and it represents a good example of online communication to teens.
- The ElectroCity (http://electrocity.co.nz/) site was designed to allow users to become involved with virtual town planning in order to better understand the generation, costs, and effects of energy. It also provides prizes and encourages users to forward the link to others.

Note: the non-referenced examples are from www.adverblog.com