

COMMUNICATING HIGHWAY SAFETY: WHAT WORKS

EXECUTIVE SUMMARY

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INTRODUCTION

The proposition that public information campaigns can produce significant changes in attitudes and values on social issues has received scant support from the cumulative evidence of mass communication effects research in the past 25 years. Nevertheless, the public information industry continues to mount such campaigns, implicitly taking it on faith that they produce the desired effects. This faith is rarely put to the test.

This study reports on a meta-analysis of systematic tests of the effectiveness of information campaigns applied to highway safety. Few topics in transportation are of greater significance, now and in the future, than making today's roads safe for those who use them. In the developed world, highway crashes constitute a major public health problem; in the United States, they are the leading cause of injury deaths and the sixth leading cause of death overall. In the developing world, growing motorization will likely lead to similar consequences.

With regard to highway safety, the oft-quoted line from Walt Kelly's "Pogo" comic strip is apt: "We have met the enemy and it is us." It is the active involvement of the general public in operating motor vehicles that at once is responsible for much of the problem and greatly complicates the solution. This study aims to assist the formulation of policy by examining the empirical evidence currently available on the ability of several forms of communication efforts and activities to increase knowledge about and affect attitudes and behavior toward highway safety practices.

OBJECTIVES

This project has two objectives.

The first objective is to provide a comparative synthesis of what works and what does not in highway safety campaigns across a large number of topical areas that have a mass media component. First priority was given to the exploration of campaigns for accident prevention in highways targeting high- and low-risk audience segments. However, this literature review also included campaigns on other risk- and health- related topics that might have a bearing on the way highway safety messages can be successfully deployed. Therefore, to develop generalizations to answer the basic question "What works?" a comparative synthesis of campaign experiences in widely different topical areas was conducted.

This was accomplished by conducting an extensive literature review to determine the current state of knowledge concerning what works and what has significant potential for wide use in future highway safety campaigns. The synthesis contains strategies and tactics that have been found to be feasible and effective under specific internal conditions that governed the conduct of such campaigns as well as the general context under which the campaigns were designed and implemented.

The works cited in this report dealt with communication campaigns that are centrally organized around mass media (television, radio, print ads, and the like), although they also typically include community action and interpersonal approaches as well. While the discussion may include expert

opinions, this report relied heavily on empirically based studies, especially those that demonstrated valid and well-documented research designs.

A comparative synthesis over such a wide range of topics and a broad variety of campaign strategies is expected to lead to the rethinking of conventional wisdom, to the development of new research hypothesis, and to the formulation of innovative strategies for campaign design.

The second objective is to provide the Iowa Safety Management System (Iowa SMS) with an annotated bibliography of empirical studies that will serve as baseline data that could be referenced for current and future projects that entail communicating preventive behavior to the general public.

In a separate appendix (available from Iowa SMS on request), published and unpublished literature on the goals, designs, activities, and outcomes of pertinent campaigns were compiled for review. Particular emphasis was placed on evaluative literature that extracted generalizations about campaign effectiveness from the standpoint of media professionals, government, and private practitioners, outside third-party sponsors, and consumers.

METHOD

Development of an Analytic Framework

An analytic framework for investigating campaigns on various topics was first created. The framework includes (1) the types of *media components* (the delivery systems or communication channels for the campaign content), (2) the types of *collaboration* (among both individuals and organizations), (3) the *context* or environment in which the campaign is intended to have impact, (4) the *structure* or procedural steps into which campaigns are organized, (5) the *principles for what works* in a campaign, and (6) the desired level of *effects* of a campaign on its target audience. The principles for “what works” in this preliminary framework appear in the list of generalizations presented below.

1. Media components:

- Public service announcements (PSAs)—radio and TV
- News programs—radio and TV
- Information programs—radio and TV talk shows, interview shows, and documentaries
- Entertainment television programs—radio, soap operas, and TV movies
- Celebrity personal appearances
- Fund raising events
- Print media—newspapers, magazines, and booklets
- Posters
- On-line sources such as dedicated websites
- Feature films
- Radio—discussion and interviews
- Special events—contests, expositions, and awards

2. Collaborators:

- Mass media
- Government
- Preventive health care professionals
- Community/advocacy leaders
- Media experts and expert organizations
- Media trade/professional organizations

3. Context:

- Health care system
- Highway safety system
- Schools
- Family
- Workplace
- Government
- Community

4. Structure of campaigns:

- Setting objectives
- Evaluation research
- Collaborating individuals and groups
- Design
- Production
- On-going operation
- Formative evaluation
- Re-development
- Outcome evaluation

5. Principles for what works:

- Use multiple media
- Combine media with interpersonal strategies
- Segment audience
- Use celebrities to get attention and entertainment programs to sustain attention
- Provide simple, clear messages
- Emphasize positive behavior more than negative consequences
- Emphasize current rewards, not distant negative consequences
- Involve key power figures and organizations
- Take advantage of timing
- Use formative evaluation

6. Effects:

- Awareness
- Factual information
- Attitude
- Intention
- Behavior
- Continued use
- Maintenance

Comprehensive Literature Review

The research team began by identifying a number of campaigns in various behavior subject areas. Published and unpublished literature on the goals, designs, activities, and outcomes of campaigns were then identified for review. We placed particular emphasis on the evaluative literature that extracted generalizations about campaign effectiveness from the standpoint of mass media professionals, highway safety professionals, and outside third-party sponsors and consumers.

We used the following sources for the literature review:

- Principal university libraries at Iowa State University and the University of Iowa.
- Computer searches of the literature using standard search strategies. (The main output of these searches were empirically based journal articles and highway safety trade magazine reports, health and accident-prevention popular journals, and official government reports from agencies that deal with highway safety.)
- Inquiries to colleagues for unpublished or “fugitive” literature about communication campaigns and their media components.

We then reviewed the resulting literature base extensively. A preliminary synthesis culminated in our preparation of an annotated bibliography, with one- or two-paragraph annotations summarizing the intents, methods, and results of the various items included in the literature review.

Development of Generalizations

We developed a comprehensive computerized database containing the results of the literature review. We then analyzed this database to derive the generalizations.

LIMITATIONS OF THE STUDY

Meta-analysis is a method of summarizing the results of empirical studies within the behavioral, social, and health sciences. It can be understood as a form of survey research in which research reports, rather than people, are surveyed. A coding form is developed, a sample of population or research reports is gathered, and each research study is “interviewed” by a coder who reads it carefully and codes the appropriate information about its characteristics and quantitative findings. The resulting data are then analyzed using special adaptations to investigate and describe the pattern of findings in the selected set of studies.

Meta-analysis is only one of the many ways to summarize, integrate, and interpret selected sets of scholarly works in various disciplines. It has an important, but somewhat circumscribed domain of applicability. First, meta-analysis applies only to empirical research studies; it cannot be used to summarize theoretical papers, conventional research reviews, magazine articles, opinion pieces, policy proposals, and the like. Second, it applies only to research studies that produce quantitative findings, that is, studies using quantitative measurement of variables and reporting descriptive or inferential statistics to summarize the resulting data. This rules out qualitative forms of research such as case studies, ethnography, and “naturalistic” inquiry. Third, because meta-analysis focuses on the aggregation and comparison of findings of different research studies, it is necessary that the findings be of the sort that can be meaningfully compared. *As such, this analysis is limited only to studies whose concepts have been strictly defined in order to allow for observation and measurement inherent in scientific inquiry.*

OVERVIEW OF FINDINGS

The assumptions, premises, and results underlying communication campaigns to enhance traffic safety are examined based on content analyses of program materials and documented on-site observations. Results reveal cause for guarded optimism in program planning, and a move toward multi-component programs addressing multiple levels of social, psychological, and structural influences on driver behavior. Despite these encouraging trends, the programs generally lack a strong theoretical base and tend to view problems as located exclusively within the individual (e.g., Forster 1982). In addition, few programs provide adequate evaluations of their activities. In short, the actual impact of mass communication remains unproven because of a perceived lag in the development of adequate evaluation techniques.

For instance, in reviewing 24 published evaluative studies of mass media campaigns as a means of encouraging the use of automobile seat belts, only nine were found to meet minimal methodological criteria; and few were free from design problems. Overall, the present review provides little evidence to support implementation of “mass media only” programs to modify negative traffic safety behaviors, at least in their present form, but some changes have been demonstrated when media are combined with other community components. These programs generally use an integrated set of approaches involving mass communication, face-to-face program elements, community action, and small-scale education activities.

Though mass media alone probably cannot alter behavior, it can introduce broad health promotion concepts and accurate information on safe traffic measures and, in conjunction with

other program elements, may be able to achieve lasting attitudinal and behavioral change. Examples drawn from campaigns to reduce drunk driving and to increase the use of child safety seats, seat belts, and motorcycle helmets illustrate how education (both public information and more formalized education) can help catalyze other actions. Education by itself, however, has not generally resulted in significant changes in the behaviors targeted, but education of the public and advocacy groups has often helped enact necessary legislation, transmit knowledge about the provisions and penalties of laws in ways that increase their deterrent effect, and generate public support for law enforcement programs. This sequence has frequently resulted in major behavioral changes. Even in such cases, however, when enforcement is inconsistent, public compliance frequently decreases. Approaches to traffic safety that emphasize the need for long-term individual- and community-based measures are found to be especially crucial for addressing complex problems like drinking and driving that are determined by a myriad of lifestyle and psychosocial factors.

The literature review uncovers 25 characteristics of communication campaigns that succeeded and stand a greater chance of achieving knowledge, attitude, and behavioral change. The most important of these 25 characteristics are further examined in the full report, and the evidence of their significance is illustrated by communication efforts that employed them.

Generalizations about highway safety campaigns:

1. More effective campaigns use multiple media (television, radio, print, on-line channels, and so on).
2. More effective campaigns combine mass media with community, small group, and individual activities, supported by an existing community structure (this involves a “systems approach” to campaigns).
3. More effective campaigns carefully target or segment the audience that the campaign is intended to reach.
4. Repetition of a single message makes for a more effective campaign.
5. Campaigns for preventive behavior are more effective if they emphasize the negative consequences of current behavior. Arousing fear (at least in the context of highway safety) has been found to be highly to moderately successful as a campaign strategy.
6. Campaigns are more effective if they emphasize current rewards rather than the avoidance of distant negative consequences.
7. More effective campaigns involved in their design and operation key power figures and groups in mass media organizations, in government and nongovernmental bodies.
8. The timing of a campaign (when it is introduced, what else is happening during its operations, and the like) helps to determine campaign effectiveness.
9. More effective campaigns utilize formative evaluation techniques to appraise and improve the campaigns during planning and while they are in operation.
10. More effective campaigns set fairly modest, attainable goals in terms of behavioral change.
11. The use of commercial marketing and social marketing strategies has potential for increasing the effectiveness of a campaign.
12. More effective campaigns use educational messages in entertainment contexts (called the education-entertainment strategy).

13. More effective campaigns address the larger social-structural and environmental factors impinging on highway safety problems the campaigns are attempting to influence (e.g., basic driving literacy, lack of opportunities to be educated about the rules of the road).
14. More effective campaigns are coordinated with direct service delivery components (e.g., hot line numbers for information or counseling), so that immediate follow-through can take place if behavior change begins to occur.
15. Segmentation of campaign audiences by demographics is often relatively ineffective, compared with segmentation by psychographic variables based upon attitudes, values, and beliefs.
16. More effective campaigns direct messages to people linked to targeted individuals, especially individuals with direct interpersonal influence, such as peers and parents.
17. More effective campaigns choose their positive role models for social learning carefully, as these individuals may become negative role models through their personal actions (e.g., celebrities involved in anti-drunk driving campaigns who later are discovered to have substance abuse problems themselves).
18. If fear appeals are used for campaign messages, they should be coupled with mechanisms for reducing the anxiety that is created.
19. Public service announcements alone generally do not effectively bring about behavioral change. PSAs should be combined with other campaign activities to make a difference.
20. More effective campaigns use the news media as means of increasing their visibility.
21. More effective campaigns go in tandem with an aggressive enforcement strategy.
22. More effective campaigns address the existing knowledge and beliefs of target audiences that are impeding adoption of desired behaviors.
23. More effective campaigns communicate incentives or benefits for adopting desired behaviors that build on the existing motives, needs, and values of target audiences.
24. More effective campaigns focus target audiences' attention on immediate, high-probability consequences of safe driving behaviors.
25. More effective campaigns use pre-testing to ensure that campaign messages have the expected effects on target audiences.



*This report is a completed strategy from the
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**TOOLBOX of Highway Safety Strategies
Chapter 1
Increasing Driver Safety Awareness**

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