

Developing the Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit

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More than 37,000 people died and 2,746,000 people were injured driving, riding, or walking on U.S. roads in 2017. (National Highway Traffic Safety Administration, 2018). Some of the primary risk factors associated with traffic-related injuries and fatalities included: excessive speed; driving under the influence of alcohol and/or other drugs; drowsy driving; improper use of seat belts and child restraints; lack of driving experience; and distraction (Transport Research and Injury Prevention Programme, 2016).

Preventing traffic-related injuries and fatalities requires targeted interventions that promote safe behaviors and deter unsafe behaviors. Behavior change campaigns are one strategy for reducing the risk factors associated with traffic injuries and deaths. Behavior change campaigns are a planned set of activities involving organized communication and are implemented over a set period to persuade people to modify their behavior. They can be combined with other traffic safety strategies and countermeasures, such as driver education and training, infrastructure, law enforcement, and legislation (Delhomme et al., 2009).

This research brief describes findings from the [Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit](#) project. This project was developed as a hands-on resource to help traffic safety practitioners plan, design, implement, and evaluate behavior change campaigns that are grounded in scientific evidence. The toolkit includes a roadmap for practitioners, a one-page overview of the phases and steps for developing behavior change campaigns, as well as information and resources about each phase and step. Supplemental resources include a list of references for the toolkit, case studies of four behavior change campaigns that are evidence-based and effective and focused on traffic safety and public health, additional examples of evidence-based and effective behavior change campaigns, and this research brief.

METHODS

A literature review was conducted using the PubMed database for peer-reviewed, scientific literature, to identify evidence-based and effective behavior change campaigns in the traffic safety and public health fields. The search combined keywords related to 1) campaigns, 2) evaluation, 3) public health topic areas of interest including traffic safety, tobacco cessation, cancer prevention, and HIV/AIDS prevention; and 4) risk factors associated with traffic injuries and fatalities (e.g., “seat belt use” and “distracted”). The four public health areas of interest used in the key word searches were selected a priori by the research team because there are effective, well-known behavior change campaigns in these fields.

The literature searches targeted English-language articles published between 2004 and 2019. The initial searches resulted in 518 articles. Two staff members reviewed each article title in PubMed to determine the relevance of each article. This reduced the number of potentially relevant articles to 237. They then read each article abstract and, if necessary, the full text of the article to determine inclusion. This reduced the number of relevant articles to 48. The inclusion criteria were:

- **Campaign design:** Campaign included a communication or education component or activity
- **Campaign location:** Campaign was implemented in the United States, with the exception of a limited

number of international campaigns that included a communication or education component

- **Evaluation:** The article described an evaluation of the campaign that used an accepted research design (pre- or non-experimental, quasi-experimental, or experimental) and clearly stated behavioral outcome measures
- **Results:** Campaign evaluation showed overall positive results

The research team reviewed each of the 48 articles and determined whether the campaigns were evidence-based or effective using these three criteria:

- **Publication of evidence:** Campaign evaluation findings were reported in at least one peer-reviewed journal article that described the evaluation and documented successful behavior change outcomes
- **Evidence of effectiveness:** The campaign produced positive behavior changes using clearly stated outcome measures
- **Evaluation design:** The campaign evaluation used a rigorous design and, to the extent possible, objective measures to gather credible evidence of campaign effectiveness

The 48 campaigns were then reviewed to identify a subset of evidence-based and effective campaigns that could serve as relevant examples for the toolkit, based on the health topic and behavioral outcomes assessed in the evaluation. This resulted in a final list of 25 assessments of 19 campaigns that were evidence-based and effective, which were recommended as examples to feature in the toolkit. The campaigns addressed the following topics: traffic safety (n=8), tobacco cessation or education (n=6), cancer prevention (n=2), healthy weight and lifestyle

RESULTS

The [Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit](#) consists of a roadmap for practitioners (Figure 1) and describes the five phases for developing behavior change campaigns.

Each phase consists of multiple steps. Readers of the toolkit are encouraged to progress through these phases

(n=2), and maternal and child health (n=1). A description of each campaign is presented in the appendices of the toolkit. An environmental scan was also conducted to identify unpublished (gray) literature about campaign planning, design, implementation, and evaluation.

Following the literature review and environmental scan, one-hour, semi-structured telephone interviews were conducted with 20 professionals who had expertise in traffic safety, behavior change campaign design and implementation, evaluation, and/or health communication. The purpose of the interviews was to gather relevant information, best practices, lessons learned, and resources for the toolkit.

A subset of the key informants (n=12) were lead or secondary authors from the 25 evidence-based and effective evaluations identified through the literature review. These interviews focused on gathering information and lessons learned about the behavior change campaigns described in the articles. Additional key informants (n=8) were also identified as experts in traffic safety, health communication, and behavior change. The respondents in this group were asked to review and provide feedback on the toolkit outline and structure.

NORC at the University of Chicago conducted a thematic analysis of the interview data using NVivo software (QSR International Pty Ltd., Melbourne, Australia). The results are described in the toolkit and include examples, considerations, and quotes from respondents. The content and structure of the toolkit was created with the evidence gathered through the literature review and environmental scan. In addition, written case studies were developed describing four of the campaigns identified in the literature review. These case studies are available in the toolkit appendices.

sequentially but may start at any phase or step based on current needs, resources, and progress.

The toolkit is not a substitute for seeking expertise and support from partners. Practitioners with limited experience should engage partners and stakeholders who can support their work in these phases and steps.

Figure 1. Roadmap for Practitioners



**Phase 1:
Understand Behavior Change Campaigns and Theory**

- Step 1. Understand the purpose and goals** of traffic safety behavior change campaigns
- Step 2. Understand the theoretical basis** for behavior change campaigns
- Step 3. Review Commonly used theories, models, and frameworks** for behavior change

**Phase 2:
Develop a Campaign Plan and Strategy**

- Step 1. Assess the health behavior** by conducting a needs assessment and needs analysis
- Step 2. Define objectives and goals** of the campaign
- Step 3. Define the intended audience** by conducting an audience analysis
- Step 4. Choose communication settings, channels, and activities** for campaign messages
- Step 5. Identify partners** and develop partnering plans
- Step 6. Develop a campaign strategy**, including communication and evaluation plans, a logic model, and guiding theory

**Phase 3:
Develop and Pre-Test Messages**

- Step 1. Develop message concepts** using frame analysis and pre-test the concepts
- Step 2. Develop messages and materials** and ensure messages match the intended settings and channels
- Step 3. Pre-test messages and materials** with the intended audience

**Phase 4:
Implement the Campaign**

- Step 1. Launch the campaign;** determine the launch date and if there will be a kickoff event
- Step 2. Manage the campaign** by overseeing activities, staff, and budget
- Step 3. Monitor the campaign and conduct a process evaluation** to determine if the campaign is meeting its goals and if changes are needed
- Step 4. Engage partners** during implementation

**Phase 5:
Evaluate the Campaign**

- Step 1. Engage stakeholders** to prepare for evaluation
- Step 2. Describe the campaign** and refer to evaluation plans developed during the planning stage
- Step 3. Focus the evaluation design** by developing research questions and determining methods
- Step 4. Gather credible evidence**, and determine indicators and data sources
- Step 5. Justify conclusions** and recommendations
- Step 6. Ensure use of evaluation findings and share lessons learned** to refine or adjust the campaign

Phase 1: Understand Behavior Change Campaigns and Theory

Prior to developing a campaign, practitioners are advised to follow three steps: 1) understand the purpose and goals of behavior change campaigns 2) understand the theoretical basis for behavior change campaigns, and 3) review commonly used theories, models, and frameworks for behavior change.

Behavior change campaigns in the scope of traffic safety use organized communication strategies to deliver messages designed to influence people to modify their behaviors. Campaigns may be implemented alone but can be more effective when combined with other strategies or countermeasures, such as education, rewards, and law enforcement (Delhomme et al., 2009; The Community Guide). Behavior change theory seeks to explain a health behavior and its underlying factors, and the context within which the behavior occurs. Practitioners can apply one or more theories to campaign planning, design, implementation, and evaluation (Nilson, 2015). Examples of commonly used behavioral theories in traffic safety identified for the toolkit include the Health Belief Model, Theory of Planned Behavior, Social Cognitive Theory, and Transtheoretical Model/Stages of Change.

Phase 2: Develop a Campaign Plan and Strategy

Practitioners are advised to follow six steps to develop a campaign plan and strategy. These steps are adapted from the National Cancer Institute (NCI)'s Making Health Communication Programs Work (2004), an in-depth, step-by-step guide for developing health communication programs.

The six steps are: 1) assess the health behavior 2) define behavior change objectives and goals 3) define the intended audience 4) choose communication settings, channels, and activities 5) identify partners and develop partnering plans, and 6) develop an overarching campaign strategy and draft communication and evaluation plans.

Planning is crucial for ensuring the success of campaigns. After completing these steps, practitioners should be able to fully describe the health behavior, primary goal of the campaign, intended audience, and appropriate communications for reaching the intended audience.

Practitioners are advised to develop a communication plan, media plan, partnering plan, implementation plan, timeline, draft evaluation plan, logic model, and implementation plan.

Phase 3: Develop and Pre-Test Messages

Using the plans developed during phase 2, practitioners should then develop and pre-test the campaign messages and materials. Three steps, adapted from NCI (2004), are prescribed: 1) develop and pre-test message concepts 2) develop messages and materials, and 3) pre-test messages and materials.

Testing the campaign concepts, words, and images with the intended audience helps ensure campaign messages are relevant, compelling, memorable, authentic, and tailored to the audience. Testing also helps identify other ideas from the audience for campaign messages and materials. Depending on the campaign budget and the preferences of the audience, practitioners may decide to use a combination of media channels, such as print, broadcast, or digital media. Selecting the appropriate channels is critical to reaching the intended audience, and testing the campaign messages and channels ensures that the messages are clear and actionable for the intended audience.

Phase 4: Implement the Campaign

Practitioners are advised to establish implementation plans during phase 2 and to follow those plans during implementation. Practitioners should follow four steps during implementation: 1) launch the campaign 2) manage the campaign 3) monitor the campaign and conduct a process evaluation, and 4) engage partners during implementation.

After the launch, daily campaign management is necessary to ensure the campaign strategy, activities, and schedule are followed. Monitoring, the process of tracking campaign implementation ensures progress towards goals and provides data necessary for conducting the process evaluation. Finally, partners can contribute to management and oversight. They can also serve as community champions who support implementation and can share the campaign messages and materials with the intended audience.

Phase 5: Evaluate the Campaign

Six steps are recommended to measure the campaign's efficacy.

These steps are based on the Framework for Program Evaluation in Public Health (CDC, 1999) and informed by The Art of Appropriate Evaluation: A Guide for Highway Safety Program Managers (Pullen-Seufert & Hall, 2008). Each step is connected, and the early stages provide the

groundwork needed for subsequent steps: 1) engage stakeholders 2) describe the campaign 3) focus the evaluation design 4) gather credible evidence 5) justify conclusions, and 6) ensure use of evaluation findings and share lessons learned.

During the design of the evaluation, be sure that the data sources and methods are appropriate and realistic given the goals of the campaign and available resources.

DISCUSSION

In an era of limited resources, traffic safety practitioners must know what methods to use and where to find existing evidence to develop successful behavior change campaigns. The Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit was developed to provide these professionals with a hands-on resource for developing behavior change campaigns that are grounded in evidence.

The toolkit includes a roadmap for practitioners, and supplemental resources, such as case studies of four behavior change campaigns that are evidence-based and effective. Practitioners can design and implement behavior change campaigns by following the phases and steps outlined in the toolkit, including understanding behavior change campaigns and theory, developing a campaign plan and strategy, developing and pre-testing messages, implementing the campaign, and evaluating the campaign. Each phase is crucial for establishing the groundwork for a successful campaign.

This project is unique for several reasons. First, it explored behavior change campaigns in the traffic safety and broader public health field to draw upon the best available evidence, and lessons learned from different campaigns. Second, the methods included both a literature review and telephone interviews; therefore, the toolkit includes findings from the literature as well as guidance and lessons learned from practitioners and experts. Finally, the toolkit was designed to support practitioners in any phase of campaign development.

Behavior change campaigns require careful planning, a clear understanding of the intended audience, effective partnerships with stakeholders, and continuous evaluation of campaign processes and outcomes. When implemented in collaboration with partners and stakeholders, this toolkit can help practitioners to design a behavior change campaign that promotes safe behaviors or deters unsafe practices among road users, with the ultimate goal of traffic safety improvement.

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The AAA Foundation for Traffic Safety is a 501(c)(3) nonprofit, publicly supported charitable research and education organization. It was founded in 1947 by the American Automobile Association to conduct research to address growing highway safety issues. The organization's mission is to identify traffic safety problems, foster research that seeks solutions and disseminate information and educational materials. AAA Foundation funding comes from voluntary, tax-deductible contributions from motor clubs associated with the American Automobile Association and the Canadian Automobile Association, individual AAA club members, insurance companies and other individuals or groups.

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