Evaluating Mass Media Anti-Smoking Campaigns

Marc Boulay, PhD
Center for Communication Programs
Johns Hopkins Bloomberg School of Public Health

Learning Objectives

- Understand the objectives of mass media campaign evaluation
- Understand the process for developing mass media anti-smoking campaign evaluation
- Understand the basic approaches used to evaluate the effects of a mass media anti-smoking campaign
Evaluating Mass Media Anti-Smoking Campaigns: Marc Boulay, PhD

The Role of Mass Media Campaigns in Tobacco Control

- Comprehensive tobacco control interventions often include mass media campaigns
- These interventions typically seek to discourage people from starting to smoke and to encourage smokers to stop
- Mass media channels provide an opportunity to reach very large numbers of people with anti-smoking messages
- If effective, mass media anti-smoking campaigns reduce smoking on a large scale at a relatively low cost

We Evaluate these Campaigns to Learn the Following:

- Whether the program discouraged people from starting to smoke and/or encouraged smokers to stop?
- How the program affected decisions to smoke?
- What could have been done to make the campaign more effective?
Steps in Developing an Evaluation

1. Identify the conceptual model guiding the program

2. Define the indicators to measure the elements in the conceptual model

3. Design the study to measure and analyze these indicators

Step 1: Identifying the Conceptual Model

- All programs have an underlying theory that specifies how the program expects to achieve its objectives

- For communication programs, this theory will typically describe the psychosocial factors that:
  - Influence the outcome behavior (i.e., smoking)
  - Are expected to be influenced by exposure to the program’s messages
An Illustrative Conceptual Model

- Formative research (including literature reviews, qualitative studies with audience groups, and secondary analyses of existing data) should guide the development of this conceptual model.

How to Identify the Campaign’s Conceptual Model

- Meet with program developers and stakeholders to identify the conceptual model
  - What are the behavioral objectives of the campaign?
  - What psychosocial factors related to smoking are addressed by the campaign’s messages?
    - What factors are not being addressed by the campaign?
  - Who is the audience and how are messages being communicated to them (e.g., channel, time, frequency, etc.)?
  - What contextual factors may also affect smoking?
Benefits of Using a Conceptual Model

- The conceptual model will:
  - Tell you what you need to measure
  - Broaden success beyond the final outcome
  - Improve ability to attribute effects to the program
  - Provide a detailed understanding of how the program did and did not work

Step 2: Defining Indicators

- Indicators are needed for each item in the conceptual model

- These indicators should be “SMART”
  - Specific
  - Measurable
  - Attainable
  - Results-oriented
  - Timed/time-bound
Measuring Program Implementation

- Monitor program implementation to ensure that the communication activities are occurring as planned (process evaluation)

- This typically occurs throughout the program implementation period

- Indicators for program implementation often rely on existing or readily available data to enable frequent (e.g., monthly or quarterly) assessments

Indicators for Measuring Program Implementation

- Example indicators for program outputs
  - Number of television spots broadcast in the past month
  - Number of posters distributed in the past month

- If possible, try to identify available sources of data to monitor reach of the program
  - Insert questions into existing surveys
  - Record amount of telephone calls to advertised number
Measuring Program Effect

- Audience surveys are typically used to measure the remaining items in the conceptual model and assess the effects of the program (summative evaluation).

- Exposure to the program’s messages is the fundamental measure linking observed effects in smoking to the campaign.

- Effects of this exposure can be classified as either intermediate or summary outcomes:
  - Intermediate outcomes are the direct effects of exposure on the knowledge, attitudes, and beliefs that influence smoking decisions.
  - Summary outcomes are the indirect effects of exposure (through the intermediate effects) on smoking itself.

Measuring Exposure to the Program

- Exposure is typically measured by asking survey respondents to report whether they have heard or seen your campaign materials in the project implementation period.

- It may also be useful to measure exposure to pro-tobacco advertisements as a contextual variable.
### Unaided and Aided Measures of Program Exposure

- **Unaided questions** ask people to recall anti-smoking messages without providing campaign-specific information
  - Stronger measure that requires a greater level of involvement with the campaign material
  - May not identify individuals with low levels of exposure

- **Aided questions** ask people to recall specific campaign advertisements
  - Weaker measure that may be subject to courtesy bias
  - May be more useful for campaigns with low levels of implementation

### Unaided and Aided Questions of Program Exposure

- **Unaided questions**
  - Have you seen any anti-smoking advertisements in the past year?
  - If so, please describe the ads you saw
  - Individuals are identified as exposed if they are able to sufficiently describe a campaign ad

- **Aided questions**
  - Have you seen any anti-smoking advertisements in the past year that had the slogan __X__?
### Indicators for Measuring Program Exposure

- Percentage of respondents that recall any campaign advertisement in a given time period (use implementation period)

- Percentage of respondents that recall [none/a small number/a large number] of campaign advertisements in a given time period
  - To examine a dose-response relationship

### Measuring the Intermediate Effects of a Campaign

- Communication programs affect behaviors through the decision-making process
  - The conceptual model should describe the psychosocial factors identified as influencing decisions to smoke

- Refer to prior studies to identify existing and validated approaches for measuring these factors

- Ensure that the questions match the campaign’s messages
### Measuring Smoking

- Several questions for measuring smoking and smoking cessation have been developed
  - Any smoking in the past month?
  - Smoked at least 100 cigarettes in your lifetime?
  - Smoked in the past year but not in the past month?
  - Reported quitting in the past six months?
  - Etc.

- Choice of measure may depend on campaign’s objectives
  - Smoking cessation or smoking prevention
  - Youth or adults

### Step 3: Study Design

- The standard study design for evaluating anti-smoking advertisements seeks to answer three main questions:
  - Did smoking and factors related to smoking change following the program?
  - Was smoking and the factors related to smoking associated with exposure to the program?
  - Do the answers to questions one and two remain even when we account for alternative explanations?
Measuring Change over Time

- Conduct a baseline survey prior to the start of your campaign and an endline survey following the completion of your campaign

- In both surveys
  - Use identical measures for the indicators in the conceptual model to measure change over time
  - Use identical sampling strategies to remove the possibility that sample differences caused the change

- Monitor changes in the context (i.e., price changes, new taxes, etc.)

Comparison between Baseline and Endline Surveys

Results from Comparison Between Baseline and Endline Surveys

- % of respondents who have smoked in the past 30 days

- Baseline
- Post intervention

© 2008 Johns Hopkins Bloomberg School of Public Health
Evaluating Mass Media Anti-Smoking Campaigns: Marc Boulay, PhD

Exposure and Outcomes

- Experimental designs that randomly allocate individuals to exposed or unexposed groups are not typically feasible for large scale communication programs.

- Two approaches for allocating individuals to exposure groups:
  - Quasi-experimental approaches that identify locations in which the anti-smoking advertisements were not broadcast.
  - Self-allocation based on individual’s self-reported exposure to the program.

Allocating Individuals to Exposure Groups

- Select two types of areas to conduct evaluation surveys:
  - Intervention areas in which the advertisements were broadcast.
  - Comparison areas in which the advertisements were not broadcast.

- Greater reductions in smoking in intervention areas relative to comparison areas would suggest a program effect.

- Avoids self-selection bias.

- But, comparison areas may differ from intervention areas in important ways.
Self-Allocation to Exposure Groups

- Conduct surveys in broadcast area
- Use respondents' self-reported measures of exposure to group respondents
- Lower levels of smoking among exposed respondents relative to unexposed respondents would suggest a program effect
- Possible bias: individuals already motivated to stop smoking may be more inclined to recall ads
  - This increases the importance to understand underlying differences between exposed and unexposed groups
Additional Analyses

- Examining changes over time and associations with exposure for smoking will assess whether program achieved ultimate objective

- Conduct similar analyses with intermediate outcomes to identify other lessons
  - Effects on intermediate outcomes will suggest how the program influenced smoking decisions
  - Intermediate outcomes that did not change will suggest areas of improvement for subsequent programs
Summary

- Evaluate mass media campaigns to assess their effectiveness and to develop lessons that will inform future programs.

- Use the program’s conceptual model to determine the relevant indicators to measure in the evaluation.

- Identify the effects of the campaign by:
  - Comparing baseline and endline measures to assess change over time.
  - Comparing exposed and unexposed groups to link change to campaign.