

**SELECTING AND PRIORITIZING TARGET BEHAVIORS
IN PUBLIC HEALTH PROGRAMS**

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I. INTRODUCTION

The selection and prioritization of target behaviors is one of the most difficult decisions made during the planning of public health programs. Traditionally public health planners, in an effort to provide comprehensive information on the health problem, have included too many behaviors and messages in their programs with the result of very little impact on behavior change. A common element of public health programs which have achieved demonstrated behavior change is their focus on a limited number of feasible target behaviors. In order to achieve behavior change, public health planners must eliminate the majority of the "medically-ideal behaviors" and select a core of feasible target behaviors as the focus of their program.

There are two major criteria for the selection and prioritization of target behaviors - potential impact on the health problem and amenability to change:

- **Potential Impact:** Some behaviors have more potential impact on the health problem. Often communication programs have promoted behaviors which have no clearly demonstrated relationship to the specific health problem. For example, although boiling water is an important behavior to **prevent infant diarrhea**, it is not a necessary step to **treat dehydration**. Boiled water has little impact on the efficacy of rehydration and the high cost in time and resources required to boil and cool the water may actually deter the mother from using ORS.

- **Amenability to Change:** Some behaviors are more easily changed than others. Although health practices may appear simple, they often are a complex set of decisions and actions. Some behaviors are too complex to introduce at one time, others are simply not feasible for the target audience and others are incompatible with social and cultural norms.

As illustrated in the following figure, selecting target behaviors is a process of elimination wherein the planning team excludes those behaviors which have no demonstrated impact on the specific health problem and which are not feasible for the target audience to adopt. The final target behaviors of the program will be a highly selective subset of the medically-prescribed ideal behaviors.

This process of elimination utilizes the following questions to hone the long list of medically ideal behaviors down to the core set of target behaviors.

Is this ideal behavior really critical to obtain an impact on this specific health problem? If it is not, it is eliminated from the list of target behaviors.

Is the ideal behavior really feasible for the audience to perform? The planning team should have an in-depth understanding of the target audience in order to answer the following questions which identify the environmental constraints affecting adoption.

- Do any of the ideal behaviors have negative consequences to the person performing the behavior?
- Are any of the ideal behaviors incompatible with what the person is already doing, socio-cultural norms or acceptable practices?
- Do any of the ideal behaviors require an unrealistic rate of frequency?
- Do any of the ideal behaviors require an unrealistic duration?
- Do any of the ideal behaviors have too high a cost in terms of either time, energy, social status, money or materials?
- Are any of the ideal behaviors too complex and not easily divided into a small number of elements or steps?

Those behaviors which are not feasible due to any of these criteria should be eliminated.

Are there any existing behaviors which are similar to or are approximations to the ideal behavior? Can these be shaped into an effective health practice through training and skill development?

Public health programs are more likely to achieve behavior change if they build on what people are already doing correctly. If existing behaviors are similar to any of the remaining ideal behaviors, they should be included in the list of target behaviors. Communication strategies and training can then be designed

to shape these approximations towards the ideal behavior.

In some cases, the ideal behaviors are necessary to have an impact on the specific health problem, but are not feasible for the target audience to perform in their ideal form. If this is the case, the planning team should negotiate with a technical or medical specialist an intermediate point between the ideal and existing behaviors which could still have some health impact. For example, in a Guatemalan handwashing program, the planning team identified 26 times a day that mothers should wash her hands (before feeding the child, before preparing food, after using the latrine, after changing a dirty diaper, upon entering the home, upon arising and before touching the water used to drink or cook with.) Correct handwashing needed an average of 600 c.c. of water and 60 seconds to perform. In this case, the ideal behavior obviously had too high a cost for the target audience. The interdisciplinary team negotiated with the epidemiologist in order to understand which times handwashing could have the most impact on diarrhea morbidity. As a result, the list of target behaviors was reduced from nine to three -- handwashing before a child under three-years-old feeds himself and handwashing before preparing and administering foods for children under three-years-old.

If the resulting list of target behaviors is still too numerous to be manageable, the planning team will need to prioritize them and determine which should be focused on initially and which can be introduced later in the program.

This abbreviated list of feasible target behaviors allows the team to design program strategies which focus more explicitly and effectively on behavior change and maintenance.

II. STEPS IN SELECTING AND PRIORITIZING BEHAVIORS

STEP 1: Analyze the Health Practice

Although health practices frequently appear simple, they actually are a complex set of people's decisions and actions which must be thoroughly understood before the team can move to planning an effective program. The process begins, therefore, with a thorough analysis of the ideal health practice using relevant information collected through discussions with communication professionals and technical experts and a review of secondary research results. During this step, the team defines the "medically ideal behavior" - a detailed list of discrete, sequential steps of the antecedents, behaviors and consequences of the health practice in its most ideal form. This is the critical time to engage an interdisciplinary team of decision-makers, medical specialists, educators, anthropologists and other researchers in a dialogue about what the behavior should look like, what knowledge and skills are necessary to practice it and what consequences it generates. Frequently, the medical community has different recommendations on how to prevent or treat the health problem, educators recommend different ways to instruct and motivate target audiences, and anthropologists have a more in-depth understanding of current beliefs, practices and social structures which

influence health practices. Public health decision-makers may also need to review policy concerning a specific health issue for its behavioral, as well as financial and logistical, implications. Likewise, if the ideal behavior is linked to a clinic procedure, clinic personnel need to be involved in planning and operationalizing changes in clinic policy to support the desired health behaviors.

These interdisciplinary discussions result in a list of specific steps which, if performed sequentially would produce the behavior in its most medically ideal form. In compiling the list, the team would consider: **antecedents** -- enabling knowledge and physical materials necessary to perform the behavior, **behaviors** -- the specific sequential steps required to perform the behavior correctly, and **consequences** -- both natural consequences which planners believe to exist and ideas for artificial consequences which could be temporarily introduced. During the process, the interdisciplinary team should be creative and brainstorm various alternatives in each category. Focused research will provide information about the target audience to fill in the gaps in the team's knowledge.

STEP 2: Conduct Formative Research

After reviewing secondary research, the team will find certain areas in which additional research needs to be conducted in order to select and prioritize target behaviors. For example, a study may need to be conducted with the specific target audience of the program, or behavioral observation may need to be done in order to corroborate the findings of a survey.

A variety of qualitative and quantitative research techniques can be used to understand target audiences' knowledge, beliefs, practices and the consequences of those practices relevant to the health problem. Behavior analysis contributes some new techniques which rely on systematic, direct observation of behavior and complement research techniques which rely on verbal report; these include home/clinic trials and performance, narrative, duration, frequency and behavioral products observation.

STEP 3: Review the formative research to understand existing behaviors and the consequences which maintain them.

The planning process begins with a review of the data concerning target audiences' current beliefs, knowledge and practices relating to the health problem in order to decide which behaviors have the most potential impact on the health problem and which are most amenable to change.

STEP 4: Review the list of "ideal" behaviors and add steps which assessment research has identified as appropriate and necessary for the correct performance and maintenance of the health practice. For example, in a Vitamin A program, research identified a food rich in this vitamin which mothers were already preparing and which the team had not considered in their initial list.

STEP 5: Select target behaviors. Target behaviors are the minimum number of core behaviors or behavioral steps essential for the health practice to be effective. Their selection requires excluding all behaviors which have no potential impact on the health problem and which are not amenable to change, reducing the list to a manageable core which will be the focus of the public health program. The Behavior Analysis Scale is a useful tool to assist in this step.

STEP 6: Prioritize the behaviors and assign them to the various phases of the program. Behaviors related to the desired health practices are frequently too numerous and complex to introduce, change and maintain at one time. Public health communication plans, therefore frequently entail several "phases" to introduce ideas/behaviors/products, teach skills and maintain behaviors over time.

III. THE BEHAVIOR ANALYSIS SCALE

The Behavior Analysis Scale is a tool which has been utilized to select target behaviors in diarrheal disease control, acute respiratory infections, breastfeeding, nutrition and water and sanitation programs. It includes nine criteria against which a potential target behavior can be rated from 0 to 5. The resulting "score" helps planners see which of many behaviors have the most potential for impact on the health problem and are most amenable to change:

POTENTIAL FOR IMPACT

- **What impact** does the behavior have on the health problem being addressed?

AMENABILITY TO CHANGE

- **Does the behavior have positive consequences** which are immediately perceivable to the person performing it?
- **Is the behavior compatible** with what the person is already doing? The behavior does not presently exist, but if it were practiced, it would fall within socio-cultural norms or acceptable practices.
- **Does the behavior require a low frequency rate?** Does it require a rate of performance which makes it fit easily into a person's daily routine?
- **Is the behavior of short duration or require little persistence?**
- **Does the behavior have low cost?** This may include time, energy or social status costs, as well as financial or material costs.
- **Does the behavior have approximations?** Is the desired behavior similar to those which the person is already performing?

- **Is the behavior easily divided** into a small number of elements or steps?
(complexity)

- **Is the behavior readily observable** by an outside evaluator? Diffusion of innovation theory suggests that people more readily adopt behaviors that they can observe in their neighbors or other salient individuals in their social system. Being able to observe a behavior or the results of a behavior is also important in the monitoring and evaluation of program impact.

The Behavior Analysis Scale is applied by an interdisciplinary group made up of technical experts, communicators, health educators, and social scientists. The scale helps to guide the interdisciplinary team in comparing formative research conducted with the target audiences with the detailed list of discrete steps necessary to perform the health practice in its medically ideal form. For each criteria, a behavior is assigned a value from zero to five depending on whether the behavior demonstrates none of the criterion - a score of zero, up to a score of five - the behavior demonstrates the criterion very strongly. For example, for positive consequences, zero means that performing the behavioral step produces no positive consequence which can be perceived by the person performing it and five means that performing the behavior produces major consequences which are easily perceived. Scores from the nine categories are added and those behaviors with the highest total scores are those which should be considered as reasonable target behaviors. The higher its score, the more likely the behavior could be adopted and could have an effect on the health problem.

The application of the Behavior Analysis Scale is not a rigorous scientific methodology. In applying the Scale, the interdisciplinary team may find that, even with research results, they still have to make decisions without sufficient scientific information or with available information that is contradictory or unreliable. The behavioral ratings from the scale frequently are a compromise which represents the group's best judgement, however, it permits all of the principal concerns from a variety of disciplines to be discussed neutrally and systematically.

IV. CASE STUDY: SELECTING AND PRIORITIZING TARGET BEHAVIORS IN A WATER AND SANITATION COMMUNICATION PROGRAM

In 1988, the Nutrition Institute for Central America and Panama (INCAP) received funding from the World Health Organization to implement the "Introduction of Piped Water in Traditional Rural Guatemala Households - Evaluation of Impact on Behaviors Related to Water and Sanitation on Diarrhea, with Development of an Education Intervention to Increase the Impact (WBDE)" project. One of the objectives of this study was to evaluate the impact of an education intervention on water-related behaviors and diarrheal morbidity in Santa Maria de Jesus, a rural village 55 kilometers from Guatemala City.

A Risk Factor Study was conducted to evaluate the association between risk behaviors related to water availability and use with diarrheal morbidity and growth among children 0-35 months of age. Nine practices were identified as most highly correlated with diarrhea morbidity, two of which - handwashing and drinking water management - were related to water. After selecting "mother's handwashing" as the target health practice for the program, an interdisciplinary team, made up of an epidemiologist, a physician, two health communicators, a health educator, a regional health trainer, and an anthropologist met to define the medically-ideal behavioral steps necessary to perform correct handwashing and drinking water management and to identify areas of formative research necessary to understand the target audiences beliefs, knowledge, and practices related to handwashing and water management.

The learning process began when the interdisciplinary team began to develop the list of discrete, sequential steps they felt were necessary to perform handwashing correctly. The anthropologist guided the team in washing their hands using materials generally found in the home (water taken from a large jug, using a small bowl to rinse the hands, etc.) The team timed the duration of each handwashing and measured the amount of water used. They found that what had originally appeared to be a relatively simple behavior, actually needed 45 steps to perform correctly. Nine items related to **when** the mother should wash her hands -- after using the latrine, after changing a dirty diaper, before preparing food, before eating, before giving food to the infant, upon entering the home, before going to bed, and before touching the water used to drink or cook with. Correct handwashing required an average of 600 c.c. of water. Estimating two minutes for each handwashing, the team discovered that if a mother performed "correct handwashing", she would actually spend almost an hour a day washing her hands! The amount of water needed required that the mother carry an additional jug of water to her home each day, just for her own correct handwashing.

Defining the ideal behavior was critical to the interdisciplinary team in understanding the complexity and cost of the health practice and identifying areas of research to be conducted during assessment. It demonstrated that handwashing in its ideal form has a very high cost to the mother in terms of both time and water expended. The team realized they needed to lower this cost if they wanted to increase handwashing. They decided to product test the Tippy-Tap, a simple handwashing device originally developed in Africa, which reduces the amount of water needed for handwashing. However, fifty-four behavioral steps were identified for the fabrication, installation and maintenance of the Tippy-Tap. The team decided to use in-depth interviews and focus group discussions to understand how other family members could be incorporated into the communication strategy to perform some of the steps needed to make, install and maintain this device.

After conducting the research, the interdisciplinary team met again to use the results to prioritize and select target behaviors and define communication strategies necessary to increase correct handwashing. They applied the Behavior Analysis Scale to select target behaviors. The discussions were lively as each discipline presented their rationale for their scores. The epidemiologist assessed each step in terms of

potential impact on the health problem - diarrhea morbidity. At the same time, the anthropologist and social science researcher looked most closely at behavioral approximations, compatibility and the cost the behavioral steps had to mothers compared to what they were already doing. Application of the Behavior Analysis Scale helped the team reduce the target handwashing behaviors from 54 to the 22 which became the focus of the communication intervention.

THE BEHAVIOR ANALYSIS SCALE

POTENTIAL IMPACT ON THE HEALTH PROBLEM

Health Impact of the Behavior

- 0 No impact on health problem
- 10 Some impact
- 20 Significant impact
- 30 Very Significant impact
- 40 Eliminates the health problem

AMENABILITY TO CHANGE

Positive Consequences of the Behavior

- 0 None which mother could perceive
- 1 Little perceptible consequences
- 2 Some consequences
- 3 Significant consequences
- 4 Very Significant consequences
- 5 Major perceptible consequences

Cost of Engaging in the Behaviors

- 0 Requires unavailable resources or demands unrealistic effort
- 1 Requires very significant resources or effort expenditure
- 2 Requires significant resources or effort
- 3 Requires some resources or effort
- 4 Requires few resources or little effort
- 5 Requires only existing resources

Compatibility with Existing Practices

- 0 Totally incompatible
- 1 Very significant incompatibility
- 2 Significant incompatibility
- 3 Some incompatibility
- 4 Little incompatibility
- 5 Already widely practiced

Complexity of the Behavior

- 0 Unrealistically complex
- 1 Involves a great many elements
- 2 Involves many elements
- 3 Involves several elements
- 4 Involves few elements
- 5 Involves one element

Frequency of Behavior

- 0 Must be done at unrealistically high rate to achieve any benefit
- 1 Must be done hourly
- 2 Must be done several times each day
- 3 Must be done daily
- 4 May be done every few days
- 5 May be done occasionally and still have significant value

Persistence

- 0 Requires compliance over an unrealistically long period of time
- 1 Requires compliance over a very substantial period of time
- 2 Requires compliance for a week or more
- 3 Requires compliance for several days
- 4 Requires compliance for a day
- 5 Can be accomplished in a brief time

Observability

- 0 Cannot be observed by an outsider
- 1 Is very difficult to observe
- 2 Is difficult to observe
- 3 Is observable
- 4 Is readily observable
- 5 Cannot be missed

Approximations Available

- 0 Nothing like this is done now
- 1 An existing practice is slightly similar
- 2 An existing practice is somewhat similar
- 3 An existing practice is similar
- 4 Several existing practices are similar
- 5 Several existing practices are very similar

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