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section four

Theory in Health Promotion Practice

Health promotion is an applied field and theory is one important tool in the service of program development and evaluation. In this section we provide an overview of multi-level planning and program evaluation, translation, and dissemination. Finally we provide an example of a theory-based, multi-level program. Throughout these chapters, we discuss the central role of theory in health promotion practice.

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chapter thirteen

Multilevel Program Planning

Plans get you into things but you've got to work your way out.

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—Will Rogers

In theory, theory and practice are the same thing. In practice they're not.

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—Jan L. A. van de Snepscheut

Any time things appear to be going better, you have overlooked something.

■ ■ ■ ■ ■ ■ ■ ■ ■ ■

—Anonymous

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PRECIS

Planning models are designed to facilitate the identification of goals and objectives. This chapter describes three planning models, PRECEDE-PROCEED, intervention mapping, and Multiple Approaches to Community Health (MATCH).

OBJECTIVES

Upon completion of this chapter, the reader will be able to

1. Describe the key features of the PRECEDE-PROCEED model.
2. Describe the key features of intervention mapping.
3. Describe the key features of Multiple Approaches to Community Health (MATCH) planning model.
4. Describe three common and three unique features of the PRECEDE-PROCEED model, intervention mapping, and MATCH.
5. Describe how theory can be integrated into each planning model.
6. Apply MATCH to a health concern and population of interest.

INTRODUCTION

As we have discussed throughout this book, influences on health and behavior occur at multiple societal levels. In public health and health promotion research and practice, we are interested in identifying and addressing the factors at individual, interpersonal, community,

No one program can or needs to address all levels of influence, but programs are best informed by an assessment of the contributions from each level and the effectiveness of programs can be improved when interventions are developed for and delivered at multiple societal levels.

government/policy, and cultural levels that may be important for a particular health problem and population. No one program can or needs to address all levels of influence, but programs are best informed by an assessment of the contributions from each level and the effectiveness of programs can be improved when interventions are developed for and delivered at multiple societal levels.

A number of social ecological conceptualizations have been formulated and numerous authors have discussed how multiple societal levels affect health and behavior (Simons-Morton, Simons-Morton, Parcel, & Bunker, 1988; Simons-Morton, Greene, & Gottlieb, 1995; Sallis & Owen, 2002; Stokols, 1996; Glass & McAtee, 2006; Huang & Glass, 2008). Increasingly, contemporary health promotion practice emphasizes multilevel planning, recognizing that health and behavior and the influences on them are complex and not simply matters of personal decision making or willpower.

Many notable thinkers (Glass & McAtee, 2006; McLeroy, Bibeau, Steckler, & Glanz, 1988; Stokols, 1996; Commers, Gottlieb, & Kok, 2007; Kok, Gottlieb, Commers, & Smerecnik, 2008; DiClemente, Crosby, & Kegler, 2006) have argued for greater public health emphasis on changing the broad societal factors that contribute so importantly to health outcomes. Our view in this book is that it is useful and necessary to understand how each societal level may contribute to particular health problems and to develop multilevel programs as possible. Notably, it may be useful and effective to intervene not only with the population about whose behavior and health we are concerned (the personal health behavior of the at risk population) but also with health-related (behavior that affects the health and health behavior of others) and health protective behavior (behavior intended to affect others, health and behavior). Therefore, it is often useful for health promotion planners to address not only those at risk but also those who influence the behavior and environmental conditions associated with the health and behavior of the population of interest.

Planning is a general process employed in many fields, and there are many planning models designed for various purposes. The purpose of any planning model is to provide a framework for creating effective programs by identifying important goals, objectives, and intervention actions. Modern planning approaches recognize that it may be useful to address multiple potential intervention targets, objectives, and approaches.

In this chapter, we briefly discuss the following three multilevel planning models that are prominent in health promotion: PRECEDE-PROCEED, intervention mapping, and Multiple Approaches to Community Health (MATCH). Each of these planning models provides useful guidance to health promotion professionals. Because entire books are devoted to these planning approaches, here we orient the reader to their main features.

PRECEDE-PROCEED

Probably no book has been as influential to health promotion training and practice as *Health Promotion Planning: An Educational and Environmental Approach* (Green & Kreuter, 2005). The **PRECEDE-PROCEED model (PPM)** is a planning tool, not a theory.

However, the model can suggest logical applications of theory. The initial model included only PRECEDE, which focused on diagnostic procedures. PROCEED was added to recent iterations of the model to address the need for action planning. The basic premise of the PPM is that program planners should identify a range of individual and environmental influences on important health problems. Accordingly, the model encourages multilevel programming as described in Chapter 2. In particular, planning should guide the development of programs to alter individual and environmental influences on behavior and health. The key features of PPM include community involvement in the planning process, data-based (epidemiologic) assessment of behavior and health, an emphasis on both individual behavior and environment, and the integration of evaluation into the planning process.

PRECEDE is an acronym for Predisposing, Reinforcing, and Enabling Constructs in Educational and Environmental Diagnosis and Evaluation.

PRECEDE is an acronym for Predisposing, Reinforcing, and Enabling Constructs in Educational and Environmental Diagnosis and Evaluation. Accordingly, individual behavior is viewed as being influenced by predisposing, reinforcing, and enabling factors. By conducting extensive diagnoses of behav-

ioral and environmental factors for a particular health problem and particular population, the planner can identify the factors that are most important and then develop educational or other change approaches for those factors. The model describes predisposing factors as the cognitions that motivate behavior. Reinforcing factors include factors that encourage the behavior, including social and physical rewards. Enabling factors are conditions of the person or the environment that facilitate performance of an action and include availability, accessibility, and affordability of health care and other resources. The key to PRECEDE is diagnosing the predisposing, reinforcing, and enabling factors for any particular health problem by reviewing the empirical literature and conducting needs assessments. Health promotion is defined as health education and policy-regulation-organization. Education is envisioned to have a role in the development, adoption, and implementation of policy, regulation, and organization, but these elements of “health promotion” are considered to be distinct and independent.

PPM is an ecological model by virtue of its recognition of both individual and environmental influences on health and behavior. In particular, the inclusion of enabling factors provided an important perspective previously lacking in planning models that behavior and health are influenced by environmental factors. Therefore, PPM provides a structure for thinking about the environmental factors that may be associated with particular health and health behavior concerns. While predisposing factors provide a structure for thinking about the cognitive factors that may be associated with personal health behavior, the planner must integrate theory as possible. Gielen and McDonald (2002) have provided suggestions for incorporating theory into PPM.

The PPM includes several stages of assessment.

Steps 1 and 2: Social and Epidemiological Assessment

Step 1 of the PPM is to assess quality of life issues particularly relevant to the members of the community of interest. This assessment is based on the assumption that community involvement and “ownership” can improve the development, adoption, and maintenance

of programs. This assessment stage is also the ideal time to begin the process of building community coalitions that can guide the planning, implementation, and evaluation of the health promotion program. Step 2 is to develop an epidemiologic assessment to determine the prevalence and severity of health problems. The idea is to develop and prioritize measurable health goals. These health goals should be written carefully to specify the exact degree of desired improvement in a quantifiable health indicator and to include a definite time frame for reaching the goal. For example, “By the year 2015, the number of people living in the community who are classified as obese will be reduced by 50%.”

Step 3: Behavioral and Environmental Assessment

Step 3 identifies behavioral and environmental factors associated with the objectives identified in previous phases. The Step 3 factors will become objectives emphasized in the following PPM phases. The logic is that behavior and environment influence health outcomes, as shown in **Figure 13-1**. If the health outcome is a reduction in cardiovascular disease, logical personal behaviors of interest would be improved diet and physical activity and logical environmental factors might include an increase in walking and biking routes and a decrease in fast-food restaurants. Of course, the environment can influence the health outcome directly or through a change in behavior. Also, tobacco access laws may be associated with cardiovascular disease due to their effects on smoking prevalence, while clean water policies would impact health directly. Therefore, a number of environmental objectives might be identified.

Step 4: Educational and Organizational Assessment

Step 4 calls for identifying predisposing, reinforcing, and enabling factors associated with the subobjectives identified in Step 3. Each of these factors is briefly defined below:

- Predisposing factors include cognitive variables such as knowledge, perceptions, and attitudes toward a particular health behavior.
- Reinforcing factors may be internal (self-reward) or external inducements (e.g., social, physical, financial) for performing a behavior.
- Enabling factors may also be internal, such as skills, or external environmental factors that influence convenience, opportunity, or barriers to behavior.

Returning to the example of obesity reduction, let’s assume that one objective is to promote the consumption of vegetables and reduce consumption of high-fat meats.

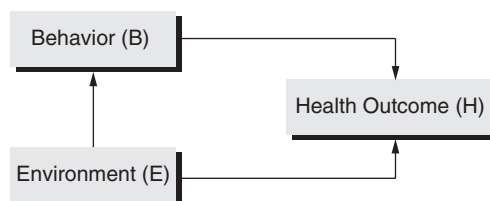


Figure 13-1 The relationship between behavior, environment, and health outcome(s).

In Step 4, of PPM, the planner would identify possible predisposing, reinforcing, and enabling factors associated with this behavior. Predisposing factors would include knowledge, beliefs, and attitudes related to diet. Reinforcing factors would include personal and social reinforcement for dietary behavior. Enabling factors would include personal skills for eating a low-fat, high vegetable diet, as well as environmental factors such as the availability of fresh produce, policies regarding government subsidies for meat production, and the like. The identified factors become potential intervention objectives.

The assessments of these factors usually entails literature reviews, surveys, and needs assessments. Of course, theory can be important in developing and measuring these variables. In the case of diet, for instance, the theory of planned behavior (see Chapter 4) would suggest that beliefs and norms regarding vegetable consumption may be associated with actual consumption. Similarly, operant conditioning and social cognitive theory would suggest that the availability of fresh fruits and vegetables and the ability to procure and prepare them would be important. Role models and inducements for consuming fruits and vegetables, reinforcing factors in PPM, would also be associated with consumption. In the PPM, these would be considered enabling factors.

Once the important predisposing, reinforcing, and enabling factors relative to the first objective have been identified, the next step is to prioritize these factors according to their relative importance and their degree of “changeability.” Generally, most cognitions are changeable, while objectives that are under the control of others, things like policy, environmental conditions, and even social support, may be more difficult to change. Generally, an objective can be classified as changeable when there is evidence from the evaluation of other programs that such change is possible. Of course, it is not always possible to determine objectively the changeability of an objective, and the planner must often make a judgment. The planner is encouraged to identify those objectives that are both important and changeable. Generally, the most important factors that also rank high in their potential for being changed through intervention then become the top program priorities. Of course, the planner might consider including some not so important objectives that are highly changeable to increase the “success efficacy” of the intervention developed for and directed at the at risk population. The next set of required actions is to repeat the entire analysis with each program outcome goal. The entire process of identifying predisposing, reinforcing, and enabling factors must then be repeated from the beginning as the resulting predisposing, reinforcing, and enabling factors may be unique for each goal.

Step 5: Administrative and Policy Assessment

Step 5 is an analysis of available and needed administrative and policy resources for program development. Administrative resources include time, finances, resources, and barriers to implementation. Policy assessment focuses on the existing policies, regulations, and organizations as they relate to the proposed program.

According to PPM, health education remains the front line method of changing predisposing factors.

According to PPM, health education remains the front line method of changing predisposing factors. Health education can alter knowledge, beliefs, or attitudes. Health education may also

be an important method for providing reinforcement to promote repetition of personal health behaviors. Ultimately, however, behavior is a function not only of dispositions, but also of policy, regulation, and organizational structure. Thus, there is a need to change policy, regulation, and organization, the PRO of PROCEED (termed elsewhere in this book as protective health behavior). Of course, changing policy, regulation, and organizational structure is challenging, but the benefits can be extremely productive, especially with respect to addressing the enabling factors, such as accessibility, affordability, and availability.

Consider, for example, the public health challenges associated with cancer screening (e.g., mammography, Pap testing, colonoscopy). Although health education programs can predispose people to be screened for cancer, the extent to which personal motivation is translated into action is likely to be a function of environmental factors that facilitate or inhibit screening behavior. If, for example, Pap testing services are offered only from 9:00 AM to 5:00 PM on weekdays, the screening procedure is basically not available to women who must work during those hours to earn a living. In rural areas, if the closest clinic offering women Pap testing services is too far to travel, then the service is not accessible. If the provider of the service is male, then many traditionally acculturated Hispanic women may not find Pap testing acceptable given their proscriptions against letting men other than their husbands view their genitals. Finally, if the out-of-pocket costs of Pap testing are perceived as being “too much” for women, then the service will not be used. In each example, the PRO implications are quite clear—make changes in existing structures and related environmental factors that will remedy the structural barriers to Pap testing.

Step 6: Implementation

Implementation is seldom easy and attention to the factors associated with quality implementation is important. These factors include hiring and training staff, developing and providing materials, and recruitment and publicity.

Steps 7–9: Evaluation

Process evaluation (Step 7) is designed to determine the extent to which the intervention is conducted as designed. This assurance is critical to the success of the program simply because even the best-laid plans can easily go wrong during program implementation. The key word at this juncture is fidelity. In essence, staff may or not faithfully execute plans made in Steps 2 through 5, thus monitoring followed by corrective feedback is useful. This process of monitoring and correction is iterative and ongoing, ending only when the program comes to close.

Impact evaluation (Step 8) focuses on the extent to which the program, once implemented, has effects on the objectives developed in Step 3. Step 9 evaluates the effect of the program on health outcomes. Sometimes impact evaluation may be more important than outcome evaluation, simply because behavioral and environmental changes do not always readily translate into more favorable health outcomes. Impact evaluation may show, for example, that targeted behaviors and environmental factors changed and this success could be considered a harbinger of eventual declines in the disease or condition that was initially

targeted in Step 2. Unfortunately, with chronic disease prevention, the effects of behavioral and environmental changes on pathology may a decade or more to materialize.

Implications for Health Promotion Planning

1. PPM is a well-known planning model commonly taught in academic health promotion programs.
2. PPM was the one of first planning models to emphasize the establishment of program goals and objectives based on epidemiological analyses.
3. PPM is ecological in its emphasis on both individual behavior and environmental factors.
4. PPM provides an emphasis on assessments of various sorts that can lead to the development of program goals and objectives.
5. PPM emphasizes predisposing, reinforcing, and enabling factors, which were derived from theory, but are not related to any particular theory. In PPM, predisposing factors are those of the at-risk population, focusing on personal health behavior but not on health-related or protective health behavior. Reinforcing factors can relate to things within the at-risk population's control and to factors outside the individual's control. Similarly, enabling factors include both individual skills and environmental factors external to the individual.
6. The conceptualization of health promotion to include education and policy, reinforcement, and organization views change from an outcomes rather than a inputs perspective. By conceptualizing policies and regulations as interventions, rather than objectives, PPM takes a sort of top-down approach, as if enlightened administrators could be expected to adopt protective health behavior in the form of thoughtful policies in the absence of health promotion efforts. Moreover, PPM does not do a very good job of describing how public health professionals can alter policies and environmental conditions. In this book, we prefer to view changes in policies, structures, and procedures that impact on the health of the at-risk population as program objectives.

INTERVENTION MAPPING

Intervention mapping (mapping) is a planning model unique in its emphasis on the selection of theory-based methods and the practical application of these methods for specific, objective-driven program purposes. Intervention mapping takes an ecological approach, along the lines of PRECEDE and MATCH, concerned with the interrelationships between the biologic, psychological, and behavioral aspects of the individual and the physical, social, and cultural environment (Bartholomew, Parcel, Kok, & Gottlieb, 2006, pp. 5–7). The framework includes five stages or products: (1) proximal program objectives at multiple levels, (2) theory-based methods and strategies, (3) program plan, (4) adoption and implementation plan, and (5) evaluation. Intervention mapping takes its name from the process of mapping the possible methods and strategies that could be used to address possible personal and environmental factors associated with specified outcomes. Intervention mapping shares many concepts and elements of PRECEDE-PROCEED and with the MATCH framework (presented in the next section of this chapter).

Step 1: Preparing Matrices of Proximal Program Objectives

This step involves developing objectives at multiple societal levels. The logical assumption is that behaviors and environmental conditions are associated with health outcomes, and the key tasks are to identify these factors and develop specific performance objectives (these are statements that specify the desired changes in measurable ways). Another important assumption is that health and behavior concerns vary according to population characteristics such as age, race, income, and geography. Therefore, objectives should be specific to populations “*at risk*” and a wide range of behavioral and environmental objectives should be developed for any particular *at-risk* population. Objectives are performance oriented in that they address specific and measurable actions or outcomes. Examples are provided in **Table 13-1**.

In this manner objectives can be developed that identify specific knowledge, beliefs, attitudes, expectations, norms, and other cognitions and actions the program seeks to affect with respect to the *at-risk* population and with respect to external determinants. The book, *Intervention Mapping: Designing Theory-Based Health Promotion Programs*, contains a great deal of useful detail about developing and writing objectives.

Step 2: Select Theory-Based Intervention Methods and Practical Strategies

Intervention methods typically derive from theory, so a solid theoretical grounding is essential for method identification and application.

Intervention methods typically derive from theory, so a solid theoretical grounding is essential for method identification and application. A method is a specific application of a strategy or process for changing cognitions behavior, and/or environmental conditions (these terms and concepts are the same as presented in Chapter 8). A teaching–learning strategy describes the practical application of a method for a particular intervention context, adapted to a particular population, setting, and objective. Methods can have application at various societal levels but must be adapted for specific purposes. Core processes that may be useful for identifying appropriate methods include brainstorming, literature reviews (particularly syntheses of the strength of the available evidence), and analysis of surveys and needs assessments collected for the purpose of the study, and other sources. The more familiar a planner is with the fundamentals of behavioral theories and the literature on theory-based interventions, the better able he or she is to identify appropriate theory and select methods for

Table 13-1 Examples of Behavior Objectives

Reduce average daily fat intake to 30% of total calories.

Increase the use of condoms every time from 55% to 80%.

Objectives for environmental conditions might include the following:

Reduce fat served in school lunches to 30% of calories

Make condoms easily available to 100% of the target population

various objectives and contexts. A key task is to link appropriate methods and strategies to objectives. For example, if the hypothesized objective is a change in knowledge, the method might be information sharing and the strategy might be lectures, demonstrations, newsletters, or workbooks. If the hypothesized mediator were risk perception, possible methods might include persuasive communications, modeling, or risk appraisal. Strategies for delivering these methods usefully might vary, depending on the characteristics of the at-risk population and context (as part of a course, at a clinic, in the community, etc.). If the objective is to change the environment, for example, social norms, policy, resource allocation, or program adoption, the methods might include media, advocacy, political pressure, community organizing, or the like. Again, methods and strategies would depend on the objective, population, and context. Intervention planning proposes the development of a matrix that includes for each objective possible methods and strategies. The matrix is then used to develop the program components and materials.

While mapping emphasizes theory-based methods, it does not emphasize or describe any particular theories or intervention conceptualizations. This sort of information must be obtained from this book and other sources.

Step 3: Produce Program Components and Materials

Effective programs do not come into existence without a great deal of hard work. Methods and strategies need to be translated into program plans that consider who will implement the program, where and how it will be implemented, and other contextual factors.

Because the goal in health promotion is to facilitate healthful behavior and environment, programs tend to be complex, often with multiple units or components.

Because the goal in health promotion is to facilitate healthful behavior and environment, programs tend to be complex, often with multiple units or components. Each component or unit might contain a unique combination of strategies and methods. Mapping heavily emphasizes communication channels and types of media that may be appropriate for various

objectives and contexts. Mapping also emphasizes the development of program materials, including print and other media, to support the selected methods. This development can be done within the program using advanced computer applications or by hiring outside media development consultants.

Step 4: Planning Program Adoption, Implementation, and Sustainability

Many programs are developed but are not adopted, are poorly implemented, or are not sustained. There is an excellent literature on diffusion (see Chapter 7) that indicates that adoption of an innovation is more likely when possible adopters appreciate the relative advantages of an innovation compared with existing practice. Therefore, the first thing a planner needs to do is obtain evidence that the innovation, the program in this case, has advantages. Usually, this is accomplished by conducting pilot studies. However, even if the decision makers appreciate the relative advantages of the innovation, it can take a lot to overcome inertia. Therefore, it is often necessary to develop a plan to facilitate adoption that takes into account the considerations of the decision makers and involved others, the potential costs of the program and how these can be managed, as well as the

relative advantages of the innovation compared with existing practice. For example, a school administrator is unlikely to adopt a program that teachers do not endorse, no matter how good it is, so it would be advantageous to get the active support of the teachers.

Quality implementation is also difficult to achieve. Many programs start out with resources to support a pilot program, a demonstration, or a randomized trial of the program. In these cases, resources are often available to hire and train staff and provide incentives. Once the demonstration is over and the resources decline, implementation depends on committees composed of health and education professionals and in some cases lay volunteers. Mapping argues that a matrix like the one employed to identify implementation objectives, methods, and strategies can also be used to facilitate diffusion and sustainability or institutionalization of the program.

Step 5: Planning for Evaluation

Evaluation serves many purposes, including assessment of how the program was conducted, its immediate effects on the proximal outcomes, and sometimes long-term evaluation of program effects on behavior and health outcomes. Logical decisions about which programs to use can only be made if information is available about their effects. Process evaluation is concerned with the extent and quality of program implementation. It examines the extent to which activities were conducted and the fidelity with which they were delivered. It might also evaluate costs, resources, and user perceptions and attitudes. The goal is usually to determine that the program was delivered sufficiently for there to be a realistic expectation of effects. Other evaluation goals are to determine actual program effects, which mapping refers to as *effect evaluation*, which PPM and MATCH refer to as impact and outcome evaluation, and which is otherwise called *summative evaluation*. Effect evaluation assesses program effects on proximal program objectives (usually knowledge, beliefs, and attitudes), behavior, and health. Intervention mapping emphasizes the specification of an evaluation model that shows the theoretical pathways from implementation to outcomes.

Implications for Health Promotion Practice

Mapping provides an important and useful approach to health promotion intervention planning:

1. Emphasis on multilevel program planning.
2. Emphasis on the utility of theory for identifying intervention methods.
3. Emphasis on the wide range of strategies and methods available for health promotion activities.
4. Logical sequence of planning activities.
5. Planning steps well linked to diffusion and related concepts.
6. Provides many details, practical examples, and recommendations for program planning.

MATCH

Here, we present the Multiple Approaches to Community Health (MATCH) ecological planning model. MATCH is designed to facilitate program planning, including the selection

and integration of theory (Simons-Morton et al., 1988; Simons-Morton, Greene, & Gottlieb, 1995). As with all planning models, the purpose of MATCH is to provide a practical framework for program planning. MATCH is a socio-ecologic planning framework that can guide the creation and implementation of effective health education and health promotion programs when based on sound assessment and conducted within the context of good planning.

MATCH provides a process for incorporating the findings from needs assessments, literature reviews, theory, and logic into effective programs. These assessments enable the planner to identify the most important at-risk group or groups and select a reasonable number of objectives at each of several levels, giving the program focus and increasing its potential for success. Because of insufficient time and resources, not all possible factors and levels influencing a health problem can be addressed. Therefore, the most important factors must be identified, and often, only these can be addressed programmatically. Even when only a limited number of intervention objectives are addressed, awareness of the full range of possible objectives allows the health promotion professional to establish realistic expectations for the program and to evaluate the results. Program effectiveness and efficiency depend greatly on correct focus, and planning can increase substantially the likelihood that the program will achieve its objectives and goals.

MATCH is both a conceptual and practical program-planning model. MATCH has been used for conceptualizing intervention research (Simons-Morton et al., 2005); as a framework for workshops and conferences for the development of health education and promotion graduate curricula, and as a guide for numerous multilevel programs (Simons-Morton, Parcel, Baranowski, Forthofer, & Ohara, 1991; Simons-Morton, Haynie, Saylor, Crump, & Chen, 2005; Simons-Morton, Hartos, Leaf, & Preusser, 2006a). A marriage of the PRECEED and MATCH frameworks has been employed in a series of Centers for Disease Control and Prevention handbooks on the prevention of smoking, physical activity, and alcohol (Brink, Simons-Morton, Parcel, & Tiernan, 1988). MATCH provides one of the primary foundations for intervention mapping (Bartholomew et al., 2006).

As shown in **Figure 13-2**, MATCH includes a set of five phases, each with several steps that can assist the planner in developing effective programs by establishing the links between health outcomes, program objectives, and intervention approaches. These steps are highly practical and provide a formula for creating and executing effective health promotion programming. MATCH is distinct from more general planning models in that it provides step-by-step procedures specifically created for health promotion program development. MATCH is a practical guide for developing interventions that have the greatest likelihood of achieving the intended impact on the program goals.

Ecological Conceptualization

Like other modern conceptualizations of health promotion, and consistent with the premise of this book, MATCH provides a socio-ecologic perspective and a basis for developing programs that include multiple interventions so that both personal health behaviors and environmental conditions can be addressed. MATCH recognizes that the factors influencing health and health behavior are interrelated and occur at multiple societal levels. MATCH challenges the planner to think comprehensively by taking into account the many

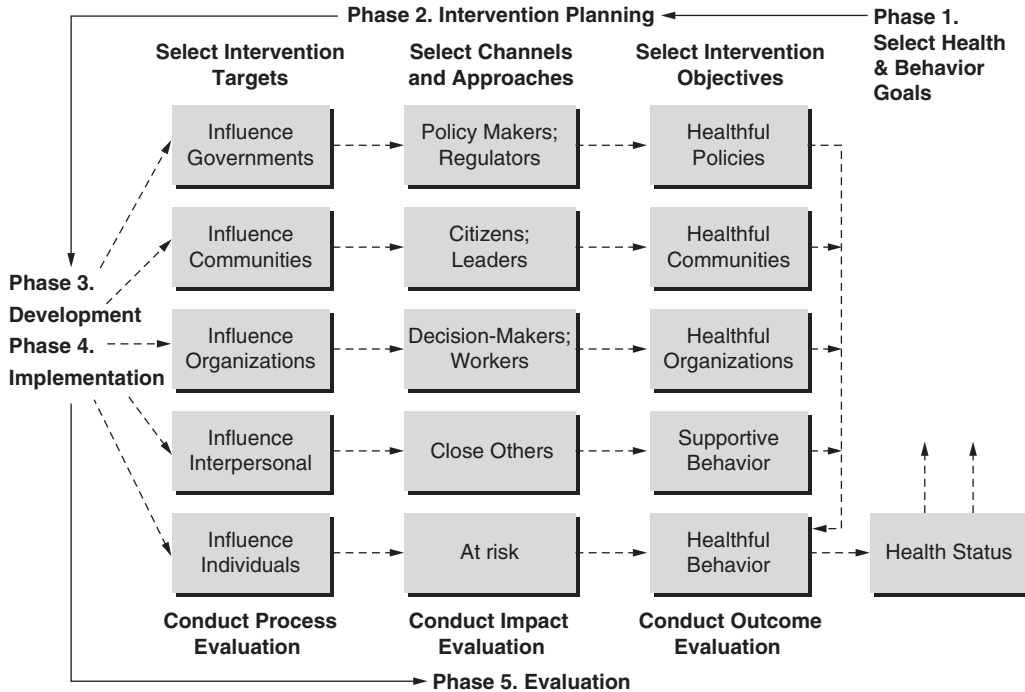


Figure 13-2 Multilevel approach to community health.

Source: Simons-Morton et al. (1988).

behavioral and environmental determinants of health, but focusing on specific objectives and actions. The framework emphasizes matching program activities with specific objectives and the individuals who influence or control those objectives.

MATCH is designed to be applied when behavioral and environmental risk and protective factors for disease or injury are generally known and when general priorities for action have been determined, thus providing a convenient way to turn the corner from needs assessment and target setting to the development of effective programs. MATCH facilitates the use of theory in program planning at multiple social levels.

Social Levels

While program goals are always related directly to the at-risk population, intervention objectives may be specific to any of the societal levels and may be behavioral or environmental. MATCH recognizes that program activities can be directed at five societal levels (e.g., individual, interpersonal, organizational, community, government).

Individual Level

At the individual level, we are concerned with the population whose behavior and health are of concern. However, owing to the influence of environmental factors on health behavior and on health itself (e.g., air pollution), objectives other than those at the individual

level and mainly under the control of the target population are also important in health promotion and addressed by MATCH.

Interpersonal Level

The interpersonal level focuses on the health-related and health protective behavior of close others, such as family, friends, teachers, and medical care providers. As described in Chapter 1, health-related behavior, behavior of others that affects health and health behavior may be intentional or unintentional. An adolescent's parent who smokes engages in health-related behavior that can increase the likelihood that the teen will take up smoking, even if the parent would be upset about it. Parents also engage in health protective behavior (behavior that intentionally affects the health and behavior of others), such as feeding their children and making sure they get vaccinated according to medical recommendations. Therefore, at the interpersonal level, we are concerned typically with the people with whom the at-risk population has direct and frequent contact. Close friends and family members are the most obvious and important people at the interpersonal level because they sometimes control or influence social and environmental factors associated with the health behavior of the at-risk population (Simons-Morton & Farhat, 2010). Health-related and protective health behaviors are appropriate targets of intervention. The kinds of intervention objectives that can be important at the interpersonal level tend to be behaviors that encourage, support, and enable healthful behavior of the at-risk group. For example, parents and teachers can support, encourage, and enable children's physical activity, healthful diet, and appropriate medication taking and discourage smoking and drinking. If the goal of the program is to improve medication-taking adherence of children and adolescents with diabetes, intervention objectives at the interpersonal level might include supportive behaviors by parents and other family members with respect to diet, blood sugar checking, obtaining medicine, and insulin injection. If the program is concerned with smoking cessation among pregnant mothers, then the behavior of spouses and other family members to discourage smoking by the target population would be important intervention objectives.

Organization Level

Organizations include schools, churches, businesses, and work sites. These organizations and the individuals who manage and work in them engage in a range of health-related and protective health behaviors. In MATCH, the goal at the organizational level is to foster improvements in the ways these organizations affect the behavior and health of the at-risk population. At the organizational level, it is the leaders, decision makers, and practitioners who must be influenced to adopt the targeted changes and who are the targets of the intervention. The intervention goals at the organizational level are programs, policies, practices, and conditions.

Community Level

Communities and neighborhoods provide important influences on behavior through programs, policies, organizations, services, and environmental conditions. Accordingly, the targets of intervention at this level include those who control or influence these factors,

for example, elected, appointed, and voluntary community and neighborhood leaders, activists, organizers, and other citizens. The decisions these individuals make with respect to programs and policies can affect health and behavior. The behavior of these individuals may be health related because it affects health and behavior, but may have been undertaken mainly for other purposes. For example, community planning is frequently concerned with immediate economic considerations and does not always take into account effects on health and behavior. In MATCH, the planner considers the community-level factors that may be associated with the health and behavior of the at-risk population and incorporates them into program planning. At this level, program goals include the adoption and implementation of programs and improving access to services, opportunities, and environmental conditions. The targets of intervention are those who control these outcomes and make decisions that affect them. At a broader level, there has been long-standing and worthy interest in creating healthy communities apart from a particular focus on the health and behavior of particular at-risk populations (Bunton & MacDonald, 2002).

Government Level

Government factors, such as resources, programs, policies, legislation, and environmental controls are important influences on health and behavior. Some local, state, and national agencies are specifically concerned with health, for example, those with responsibilities for environmental protection, child welfare, substance abuse, and the like. Other agencies whose primary responsibilities lie outside the realm of health also have important health and behavior influences to the extent they are affected by their programs and regulations. For example, the U.S. Department of Transportation is primarily concerned with mobility but is also responsible for safety, and the U.S. Department of Agriculture is primarily concerned with food production but also has responsibilities for food safety. Because of their widespread influence, the policies and programs of these agencies are important targets for health promotion interventions. While programs might in general be concerned about government programs and policies, in MATCH we identify those government programs and policies as intervention objectives related to the behavior and health of the at-risk population. At the government level, the targets of intervention are the policy makers and program officers who control them and, in some cases, outside groups who may have common interests and potential influence.

Hence, depending on the goals of the program, it may be useful to consider or develop program components for each of several societal levels. For each societal level, a range of possible objectives can be targeted for programmatic attention.

Applying Theory in MATCH

Theory is useful in program planning and integral to the MATCH planning model. A premise of MATCH is that psychosocial theories and other change concepts and processes (e.g., social marketing, social change, diffusion, organizational change), such as those described in this book, should guide all the development of program components and interventions. Of course, some theories are more informative and useful for intervention goals and targets than others. Moreover, the application of theory at the group or

The selection of theory should depend on the health and behavior problem, the intervention goal, the target of the intervention, and societal level.

community level may be somewhat different from its application at the individual level. Therefore, the selection of theory should depend on the health and behavior problem, the intervention goal, the target of the intervention, and societal level.

Some theories have been designed to apply to broad social levels, for example, social change theory at the community and societal levels, organizational change theory at the organizational level. MATCH conceptualizes health promotion as a process of fostering change in the individuals at each societal level who control the factors that influence the health and behavior of the target or at risk population. Therefore, there is always an individual or group of individuals whose behavior is of concern, including the personal health behavior of the at-risk population and the health related and protective health behavior of others. Therefore, the psychological and psycho-social theories that are familiar to most health promotion professionals are always relevant. If the objective is to develop more open space in a community and the targets of the intervention are the members of the planning board or the city council, their cognitions with respect to the decision they make are important and can be understood from the perspective of psycho-social theories.

The selection of appropriate theory is an essential part of planning. However, there are a lot of theories, and most practitioners and many researchers are familiar with only a few. Therefore, the tendency is to apply the theory that one knows best to every problem. This may work reasonably well much of the time. However, our goal is to encourage health promotion professionals to select and use theories that are most applicable to a particular problem. Our assumptions about the role of theory in program planning include the following: (1) no one theory is useful for every health behavior problem, (2) any particular theory may be useful for a wide variety of health behaviors and outcomes, (3) behaviors of various types may be understood from the perspective of more than one theory, and (4) theories can be useful and should be employed at multiple societal levels. We suggest three important functions of theory within the context of program planning.

Conceptualizing the Problem

A theoretical approach provides the planner an overall conceptualization about the behavior and health concern of interest. This is sometimes called the theory of the problem. A theory of the problem is simply a description of the behavior from the perspective of a particular theory. It is a brief statement of the hypothesized relationships of variables. Accordingly, any particular personal health behavior could be considered from the perspective of operant conditioning, social cognitive theory, reasoned action, or any number of other theories. For example, if the behavior of concern is a lack of physical activity among schoolchildren, the planners might develop a theory of the problem based on operant conditioning that physical activity depends on opportunity and positive consequences of experience. Alternatively, one could develop a theory of the problem based on reasoned action that physical activity intent is largely the product of beliefs about the behavior. (Of course, both environment and beliefs are important.)

Identify Variables of Interest

Theory can help planners identify variables of interest that can be used in needs assessments, identified as intervention objectives, and assessed for evaluation purposes. This is a more refined use of theory, where the key variables of particular theories are applied in a conceptual way to the behavior of interest. Taking the example of physical activity among preadolescent children, the planner might select the variables outcome expectations and self-efficacy from social cognitive theory.

Identify Intervention Strategies and Methods

Theory provides and/or suggests methods that can be applied in the intervention. A wide range of strategies and methods are available for health promotion specialists to select and apply. Most of these strategies have derived from theory, but many can be applied within the context of different theories. Many theory derived strategies and methods have been presented in previous chapters. For example, in Chapter 5 we introduced strategies and methods derived from operant conditioning and social cognitive theory, including feedback, goal setting, reinforcement, modeling, and guided practice. Similarly, communication strategies and methods were presented in Chapters 4, 7, and 11.

Selecting Theory

Selecting an appropriate theory for a particular health problem requires a firm understanding of the theory and of the empirical literature regarding the behavior or health problem of interest. Theory should be considered within the context of the societal level of interest and target of the intervention. Basically, the steps involved in selecting and matching theory to the appropriate level and intervention include the following:

1. Review the literature to identify the determinants of the personal health behavior of the at-risk population and the health-related and protective health behavior at each societal level of concern.
2. Review the empirical and theoretical literature to identify the theories that have been employed in research and practice for similar behaviors.
3. Review the literature and/or conduct needs assessment to determine the relevance of theoretical constructs and variables for the problem and at-risk population. Identify one or several candidate theories at each of several societal levels.
4. Through research, thought, discussion, and experience apply the logic of the theory or theories as related to the problem and population of interest—develop a theory of the problem.
5. Identify likely key variables to be associated with the behavior of interest, changeable, and likely to lead to a change in the program goals. Use these variables in needs assessments and to develop intervention objectives and intervention activities and methods. Variables hypothesized to be mediators, typically cognitions, should be identified as intervention objectives.
6. Identify theory-based methods and make these methods central to the intervention.
7. Employ theory generally in the development, implementation, evaluation, and dissemination of the program.

In this manner, theory becomes a tool in the process of developing interventions and programs. This chapter describes the integration of theory into each step of program planning and provides examples.

Definitions Before getting into a detailed discussion of MATCH phases and steps, it may be useful to review the definitions of key terms. Key terms and definitions are included in the **Table 13-2**. It may be useful to review these terms now. Here we elaborate on a few key terms that the reader should understand well before proceeding through MATCH.

An intervention is a set of actions taken to accomplish program goals and objectives.

Intervention

An **intervention** is a set of actions taken to accomplish program goals and objectives. It is the action part of a program as opposed to the organizational part. The term *intervention* is sometimes

used interchangeably with **program** or **program component**, but in MATCH, an intervention is the action part of a program or a program component, it is what the health educator or other health promotion professional does to accomplish program goals and objectives. Interventions are sometimes confused with program goals, for example, it is common to think of a policy as an intervention, but in MATCH, policies are program goals and interventions are the planned actions designed and taken to foster good policies. Similarly, an intervention is not legislation, administrative acts, or the delivery of a program or services—in MATCH these would be intervention goals and activities would be planned to alter and improve these goals. Each intervention includes objectives, approaches, channels for reaching the target population, methods derived from theory, and specific activities. The intervention consists of the planned actions taken to achieve the program goals and objectives. An intervention may focus on an at-risk population group whose health and behavior are of concern, for example, a course to prevent drunk-driving recidivism, a set of media messages to increase routine condom use, signs that encourage stair walking, the delivery of a curriculum on healthful diet, a program of individual counseling for weight control, a set of actions to promote greater physical activity among community residents.

An intervention may include actions to alter the health-related and protective health behavior of others to create environmental conditions that support rather than discourage healthful behavior. Such interventions might include community organizing to enable residents to improve personal health behavior or to obtain services or programs, or lobbying and political action to improve the built environment for safe walking and biking routes. Interventions may include actions to get reporters to include information about alcohol involvement and safety belt use when they report on motor vehicle crashes, and actions to get state legislators to adopt graduate driver licensing, needle exchange programs, and funding for public health. Notably, interventions can be developed for different societal levels. Keeping in mind the program's behavior and health goals, interventions can be developed at each of several levels, each targeting unique goals and objectives.

At-Risk Population

A key feature of MATCH intervention planning is the identification of a population or group of programmatic interest about whose health and health behavior the program

Table 13-2 Key Definitions in Health Promotion Program Planning

Program	A program is set of planned activities to address a particular health behavior or outcome. A program focuses on one or more at-risk population groups and includes goals and objectives for changes in health behavior or health status, intervention actions designed to create change, and resources. Resources include trained personnel, facilities, and funds for intervention development, implementation, and evaluation.
Program Component	<p>A program may have more than one program component. Each component would be directed at a particular societal level. For example, a program to encourage safe and responsible sex among adolescents may have components at multiple levels:</p> <p>Component 1. Individual level: Sex education curriculum</p> <p>Component 2. Interpersonal level: Peer-to-peer education about condoms and safe sex</p> <p>Component 3. Interpersonal level: Parent education about adolescent sex and sexually transmitted diseases</p> <p>Component 4. School level: Staff training regarding adolescent sexual behavior and the role of teachers in promoting safe sex education</p> <p>Component 5. Community level: Media directed at youth norms regarding safe sex</p> <p>Component 6. Community level: Community and political action to increase the availability of condoms</p>
Program Goals	Program goals are defined in terms of the health and health behavior of the at-risk population.
At-Risk Population	The population whose health status and health behavior is of interest in the program.
Target of the Intervention	Those who control the intervention goals at a particular societal level. These may include the at-risk population, family and friends, teachers, administrators, policy makers, community residents, anyone who has influence over the intervention goals.
Intervention	An intervention includes the actions taken to achieve program goals and objectives. The intervention includes general change approaches, theory-based methods, and activities to address specific objectives.

(continues)

Table 13-2 Key Definitions in Health Promotion Program Planning (Continued)

Intervention Goals	Goals are developed at each societal level and are the behaviors and environmental factors linked to the program goals.
Intervention Objectives	Cognitive variables thought to mediate change in the target of the intervention.
Intervention Approaches	General education and change processes, including teaching, counseling, training, consulting, media, organizing, advocating. A approaches to intervention should be refined by program planning, resulting in the development of activities that are specific applications of theory-based methods to specific intervention objectives.
Intervention Strategy	Within a general approach (education, counseling, etc.), the channel, means, and way an intervention method is applied
Intervention Methods	Methods are change activities that can be refined to address specific objectives. Methods include actions such as feedback, modeling, persuasive communications, practice to mastery, tailoring messages, demonstration, simulation, etc.
Intervention Activities	Activities are the specific application of methods to address specific intervention objectives.

All aspects of MATCH planning are based on the premise that the program is concerned about the behavior and health of the at-risk group.

is concerned, called the population *at risk* or *at-risk* group. All aspects of MATCH planning are based on the premise that the program is concerned about the behavior and health of the at-risk group. All programmatic actions are designed to facilitate improvements in health behavior and outcomes

with the **at-risk population**, including actions and activities directed at environmental goals. At-risk populations may be defined by age or sex, by school or neighborhood, by level of risk for a particular problem (e.g., getting pregnant, falling), or in many other ways. At-risk populations can be narrowly defined, for example, as overweight girls in a particular school, or very broadly, for example, as community residents. Program goals are written with improvements in the at-risk population's health and behavior in mind.

Sometimes more than one at-risk group can be of concern. For example, with respect to HIV and sexually transmitted diseases (STDs), there may be separate programs or program components devoted to adolescents, to adult homosexuals, to the partners of sexually active people, and to intravenous drug users. Each of these programs would have similar outcomes and might share many goals and objectives, but because each of the at-risk populations would be different, program components might vary considerable.

Targets of Intervention

While the at-risk population is almost always an individual level, the **target of intervention**, there may be several or even many targets of intervention whose personal health

behavior is not of concern. That is because the at-risk population can exercise considerable control of cognitions that motivate personal health behavior, but has only limited control of environmental influences on health behavior, which are controlled by others exercising health-related or protective health behavior. Therefore, in multilevel planning, the at-risk population is often only one of several targets of intervention. This distinction is quite important, because it is the basis for multilevel intervention. One cannot really make good use of MATCH without developing a solid understanding of the important distinctions between the at-risk population and target of the intervention.

While the behavior and health of the at-risk population are the primary concerns of the program, this population may not be the only population that is targeted for intervention because individuals do not control all the influences on their behavior and health.

While the behavior and health of the at-risk population are the primary concerns of the program, this population may not be the only population that is targeted for intervention because individuals do not control all the influences on their behavior and health. A variety of individuals can be the target of particular interventions and are selected because they control or influence the goals and objectives of interest. For example if the at-risk population is children with type 1 diabetes and the program goal is to improve adherence and diabetes control, the

at-risk population would also be the target population or target of intervention for program activities that target objectives that these children can control, for example, testing their blood sugar levels frequently. However, because their parents engage in important health-related and protective health behavior, including obtaining insulin and providing appropriate snacks, parents might be the targets of intervention for certain program activities. Because these children depend on school administrators and nurses to understand and accommodate their special requirements for insulin and regular snacks, they may be the targets of intervention for these objectives. In the same manner, other intervention targets might be identified as part of program planning on the basis of their potential for controlling or influencing factors associated with the health and behavior of the at-risk population.

With these definitions established, we describe program planning according to the MATCH framework.

Overview of MATCH Intervention Planning

The MATCH intervention planning phases previously shown in Figure 13-2 are listed in **Table 13-3**. In Phase I the tasks are to identify the at-risk population and health status

Table 13-3 MATCH Phases

Phase I: Goals Selection
Phase II: Intervention Planning
Phase III: Program Development
Phase IV: Implementation Planning
Phase V: Evaluation

Source: Simons-Morton, Greene, and Gottlieb (1995).

goals. In Phase II, the tasks are to identify at each of five societal levels the possible intervention goals, targets of intervention, channels of communication, and approaches to intervention. Phase III involves intervention development, Phase IV implementation, and Phase V program evaluation. Phase II is the key to intervention planning, and it is at this phase that multilevel considerations are established. Accordingly, goals and objectives can be established at one or multiple societal levels. Each of these phases is elaborated in the following paragraphs.

Intervention Phases and Steps

Phase I: Health and Behavior Goals Selection

Phase I includes the four steps shown in **Table 13-4**: (1) select at-risk population(s); (2) select health status goals; (3) identify health behavior goals; and (4) identify environmental goals. Typically, the most important health problems for an at-risk population should be selected for programmatic attention and detailed intervention planning. Phase I is concerned exclusively with the at-risk population.

Step 1.1: Select At-Risk Population(s) of Interest At-risk populations include those whose health and behavior are of primary concerns of the program. The at-risk population may

Table 13-4 MATCH Phase I: Health and Behavior Goals Selection

Step 1: Select High-Priority (at-risk) Target Population

- A. Health problem prevalence
- B. Accessibility
- C. Programmatic interests

Step 2: Select Health Status Goals

- A. Prevalence
- B. Programmatic considerations

Step 3: Identify Health Behavior Goals

- A. Prevalence
- B. Association with health outcome
- C. Changeability

Step 4: Identify Environmental Goals

- A. Physical environment
 - B. Availability of programs and resources
 - C. Access to services, products, resources
 - D. Policies, practices, regulations
-

Source: Simons-Morton, Greene, and Gottlieb (1995).

The at-risk population may include those at elevated risk for the health problem or merely the population for whom the health educator is responsible and whose health and behavior could be improved or future health problems prevented.

include those at elevated risk for the health problem or merely the population for whom the health educator is responsible and whose health and behavior could be improved or future health problems prevented. For those who work with the elderly, the elderly are the at-risk population. However, for any particular program, only some elderly might be of particular interest, for example, those who live in a particular community, those who live alone, those who are frail and at

high risk for falls, those who take certain medicines, those who are overweight, and so forth. The selection of at-risk populations may be based on comprehensive data collection and needs assessments. However, in most cases, the at-risk population is selected on the basis of the prevalence of a health problem, access, and programmatic considerations.

The prevalence of a health behavior or outcome is a primary consideration in selecting an at-risk population. For example, if we are concerned about HIV and STDs, among the populations at greatest risk are sexually active singles because, by definition, the prevalence of sexual behavior is high and serial monogamy and multiple partners are common. If we are interested in preventing injuries due to falls, the elderly, young children, roofers, and acrobats are at great risk.

The accessibility of the at-risk population is sometimes a major consideration. Frequently, the at-risk population is accessible through a particular setting, for example, students at a school or in a school district, patients in a clinic or hospital, workers at a factory or corporation, or residents in a neighborhood or community. Less accessible populations include the disenfranchised, school dropouts, runaways, homeless, and others who are not connected to usual social structures and do not aggregate naturally require special effort.

Programmatic considerations are often important in the selection or identification of the at-risk population. After all, the funding agent and the practice site have vested interests in certain at-risk populations and health goals. Programs tend to reflect the mission and goals of the organizations in which they are located or which fund them. If the organization is concerned with aging, then at-risk populations may be limited to various elderly populations. Similarly, in public health departments, at-risk populations often are established by public demand, political factors, or the availability of outside funding.

There may be many other considerations, but it is hoped the idea is clear that the at-risk population includes those whose behavior and health are of concern to the program.

Step 1.2: Select Health Status Goals Selection of health status goals is based on the

Selection of health status goals is based on the prevalence of the health problem and risk status of the at-risk population and other considerations.

prevalence of the health problem and risk status of the at-risk population and other considerations. Usually, the health promotion professional identifies an important health problem and then selects the at-risk population according to age, gender, race, setting, location, or other considerations. Some-

times, however, initial interest may be with a particular problem, such as smoking or HIV prevention, and therefore, the program will be concerned with the range of populations

exhibiting high prevalence or risk for that problem. Often a program is concerned about the health problems of a particular age, gender, or racial group or a particular practice setting. In such cases, the educator may be interested mainly in identifying the important health problems for that group.

Appropriate health status goals for the target population may be derived from “Objectives for the Nation” (U.S. Department of Health and Human Services, 2011), other national data sets, local needs assessments, and/or the health educator’s professional interests and concerns. The purpose of any health promotion program is to improve some health status goal or goals. Sometimes a health problem or at-risk population is selected based on the mission of the funding agency, the whim of a powerful administrator, or in response to perceived public concern, rather than by evaluation of epidemiologic data. Nevertheless, prevalence data, whether collected locally or extrapolated from other sources, are often influential considerations in selecting the at-risk population and health goals.

Step 1.3: Identify Health Behavior Goals The health behavior goals should be selected

The health behavior goals should be selected on the basis of how closely they are associated with the health status goals, their prevalence, and their potential for change (sometimes called changeability) in the at-risk population.

on the basis of how closely they are associated with the health status goals, their prevalence, and their potential for change (sometimes called changeability) in the at-risk population. For example, smoking prevention is important mainly because smoking is associated with negative health outcomes, is highly prevalent, and can be prevented, particularly before adolescent initiation. Similarly, drinking and driving is

important because it is associated with motor vehicle crashes and resulting injury and death, remains all too prevalent, and can be prevented (Simons-Morton, Mickalide, & Olsen, 2005). Programs sometimes target particular health behaviors associated with health goals too distant in the future to measure. For example, the focus of many programs is healthful diet because it is associated with long-term protection against cancer, heart disease, and other chronic health problems. Diet, physical activity, and smoking, for example, are prevalent health behaviors related to cancer, heart disease, and other health problems, and research has established that it is possible to improve diet, increase physical activity, and prevent smoking and foster cessation. Hence, these behaviors of the at-risk population are high priorities in programs concerned about preventing chronic diseases.

Step 1.4: Identify Environmental Goals Many environmental factors can affect health and

Many environmental factors can affect health and behavior goals.

behavior goals. Once the at-risk population and health and behavior goals have been identified, it is useful to identify the key environmental factors associated with them. For example,

if the program is concerned about reducing obesity and cardiovascular disease risk by increasing physical activity in a population group, it quickly becomes apparent that bike paths, parks, pedestrian safety, and other “built” environmental factors are important. If the program is concerned about HIV and STDs among sexually active young people, then the program would identify environmental factors, such as the availability of condoms,

discrete STD testing, and modern sex education programs. Important environmental influences on the outcomes should be listed at this point.

Phase II: Intervention Planning

The idea in MATCH Phase II is to “match” intervention goals and objectives with potential targets of intervention and intervention actions at the relevant societal levels or practice settings.

Having identified the at-risk population and priority health status, behavior, and environmental goals in Phase I, the idea in MATCH Phase II is to “match” intervention goals and objectives with potential targets of intervention and intervention actions at the relevant societal levels or practice settings. In some ways, this is the most important and difficult phase. It is certainly one of the least well-described processes in health promotion practice.

As shown in **Table 13-5**, Phase II includes three steps: (1) select intervention goals, (2) identify the targets of the intervention, and (3) select the intervention approach and methods. In Phase II, the idea is to keep the health and behavior of the at-risk population in mind but to consider the influences on health behavior at multiple levels and controlled or influenced sometimes by the at-risk population and sometimes by others who might become appropriate targets of intervention.

Step II.1: Select Intervention Goals Intervention goals include the behaviors associated with the targeted health and behavior outcomes. In MATCH, intervention goals are always personal health behavior, health-related behaviors, or health-protective behaviors. These behaviors may include personal health behaviors of the at-risk population, health-related behaviors of close others, or health-protective behaviors of close others or policy-level people. The idea here is to target the type of behavior that would lead to increase support for the personal health behavior of the at-risk population. There may be a long list of possible intervention goals, but here it is important to identify those that will be targeted for intervention. At this step we convert the behavioral and environmental factors identified in the previous

Table 13-5 MATCH Phase II: Intervention Planning

Step 1. Select intervention objectives

- A. Individual level
- B. Interpersonal level
- C. Organizational level
- D. Community level
- E. Government level

Step 2. Identify the targets of the intervention

Step 3. Select the intervention channel, approach, theory, strategy, and methods.

Source: Simons-Morton, Greene, and Gottlieb (1995).

phase to be associated with the health outcomes of interest, and convert them to specific behaviors and target populations. Not all possible goals can necessarily be targeted in any

Intervention goals should be selected on the basis of the expectation that their accomplishment could improve the health and behavior of the at-risk population.

particular program. Intervention goals should be selected on the basis of the expectation that their accomplishment could improve the health and behavior of the at-risk population. Intervention goals can be identified at each of several societal levels, including the individual, interpersonal, community, and government levels. At the individual level, intervention goals

are specifications of the personal health behaviors linked to the health goal. If the health goal is to reduce or prevent obesity, then the behavioral goals would be to improve diet and physical activity. However, at this level of planning, it is important to specify intervention goals more precisely and measurably. Accordingly, individual-level goals for physical activity might include transportation-related physical activity, planned exercise, or leisure-type activity. Similarly, a wide range of diet-related behaviors could be identified. At the interpersonal level, a range of health related and health-protective behaviors would be important, including the behaviors of family members or friends that would support improving the specific diet and physical activity goals for the at-risk population. At the organization, community, and government levels, the intervention goals would include health related and health-protective behaviors associated with specific programs, policies, resources, and other environmental supports for improved diet and physical activity of the target population. Categories of intervention goals at each societal level are presented in **Table 13-6**.

Program success depends greatly on the selection and specificity of intervention goals. For any health problem, we can identify several possible intervention goals from

Table 13-6 Intervention Goals and Targets of Intervention by Level

<i>Level</i>	<i>Intervention Goals for Health Behavior</i>	<i>Targets of Intervention</i>
Individual Level	Personal health behavior	At-risk population
Interpersonal Level	Health-related and protective behavior: supportive and enabling behaviors	Family, friends, close others; teachers, co-workers, neighbors
Organization Level	Health related and protective: policies, programs, practices, facilities, resources	Administrators, officials, staff
Community Level	Health related and protective: norms, standards, access, programs, policies, standards, resources	Residents, citizens, leaders, advocates
Government Level	Health related and protective: programs, policies, regulations, resources	Policy makers, regulators, administrators

theoretical and logical considerations, literature reviews, and empirical needs assessments. Important criteria for the selection of intervention objectives include prevalence, strength of its association with the program's health and behavior goals, and potential for change. Societal level, practice setting, and programmatic considerations may also be important. The identification of appropriate intervention goals can be achieved by developing a good understanding of the health and behavior problems through literature reviews, needs assessments, and extensive involvement with the target population. The best way to identify intervention goals is to ask the question, what behaviors at the individual, interpersonal, community, government, and policy level would support improved personal health behavior of the at risk population.

Step II.2: Identify the Targets of the Intervention Targets of intervention are those who

Targets of intervention are those who can influence or control an intervention goal with which they are matched.

can influence or control an intervention goal with which they are matched. This is one of the most important concepts in MATCH. There can be multiple targets of intervention, and these can and usually do include the at-risk population but can also include those who can influence or control interven-

tion goals at the other societal levels. At this step the planner should determine who at each societal level can behave in a way that would support the target health behavior and outcomes. At the individual level, the target of intervention is the at-risk population, and the intervention goals are personal health behaviors (sometimes health related behaviors). At other societal levels, the targets of the intervention are the people who control the environmental goals that have been identified as being important for the health and behavior of the target population. Sometimes these are health-related behaviors to the extent they have unintended impact on the behavior and health of the at-risk population; sometimes these are health-protective behaviors that are or could be taken to improve health and health behavior. For example, if the program goal is to increase physical activity among schoolchildren, children would be the target or at-risk population, and they would be the target of intervention at the individual level. The intervention goals at the individual level would be detailed specifications of the targeted behavior, in this case, the amount, types, and locations of the physical activity the program would like to increase. However, children only have so much control over their own physical activity behavior. They are dependent on their teachers and school administrators for physical activity at school during physical education and at recess. They are partly dependent on their parents for facilitating physical activity at home. Moreover, children are likely to be much more active if they have ample recess, quality physical education, access to interesting and safe grounds and facilities, and teachers, parents, and administrators who value and emphasize physical activity. Therefore, in MATCH, we identify these societal levels and the individuals whose health related or health-protective behavior can control or influence children's environments, opportunity, and support with respect to physical activity. The health-related and health-protective behavior of these individuals can be targeted. At the interpersonal level, those who can exert proximal social and environmental influence through their contact with the at-risk population, such as family and friends, may

be important, and these individuals may be the targets of the intervention for the goal of increasing social support for physical activity. At the organizational level, the targets of intervention may be administrators or teachers, day care workers, or nurses because these individuals may have control or influence over intervention objectives such as policy or program adoption and implementation. At the societal level, the targets of the intervention might be community leaders, and at the government level, the targets of the intervention would be policy makers or program developers. Categories of targets of the intervention at each societal level are shown in Table 13-6.

Step III.3: Select Intervention Channel, Theory, Approach, Strategy, and Methods In Step 3, the tasks are to identify the channels of intervention delivery, intervention approach, theory, and methods. In many ways, this is the most interesting and creative part of program planning.

Channels of intervention may be direct or indirect and may depend on the societal level and target of the intervention.

Channels of intervention may be direct or indirect and may depend on the societal level and target of the intervention. The channel may be person-to-person or via media. It may be possible to reach the target of the intervention directly, providing education, training, or counseling. For example, in the personal trainer study, trained staff served as “personal trainers” to children with type 1 diabetes, helping them deal with the many challenges to managing their disease (Nansel et al., 2007). However, sometimes the channel of intervention delivery is indirect because the target of the intervention is remote and cannot be reached directly. Indirect approaches include media and training others who do have direct access to the targets of the intervention, for example, teachers, parents or other family members, or healthcare providers. If an intervention goal is to increase the amount and quality of physical education, then program staff might work directly with physical education teachers, but they may also work primarily with master teachers or trainers who would have direct contact with physical education teachers. In some cases, only remote channels are possible. For example, a goal at the interpersonal level may be for parents to encourage their children to participate in organized after-school activities or to spend time playing outdoors. Program staff might meet with parent groups or provide information and persuasive messages targeting parents.

Approach is a term for the general category of intervention, such as counseling, training, media and communication, counseling, consulting, organizational change, lobbying, organizing, and political action, as described in Chapter 8. To some extent, *channel* is implicit in approach. Each approach is inherently educational to the extent that it attempts to increase knowledge and alter other cognitions. Each approach may vary in terms of channel and methods. For example, individual and group counseling, teaching, and training usually, but not always, involve direct contact with the targets of the intervention. Each approach can be adapted for a limited range of applications. The approach to intervention may be influenced by the available practice setting, channel of communication, the unique characteristics of the target of the intervention, and the intervention goals. Education, training, and counseling are possible only when the opportunity exists for multiple direct contacts with the target population, occurring usually in such formal settings as schools or healthcare facilities. Training is a common approach to facilitating

practitioners' implementation of new programs or professional practices. When interpersonal intervention is not possible, indirect or media approaches can be employed.

Theory is an important consideration at this point, mainly as a general guide for intervention development. Each theory has a basic premise, and what is important at this stage is to identify a theory that is particularly relevant to the behaviors of interest and provides a good understanding of the likely influences on the behavior. The premise of reasoned action, for example, is that behavior, or at least intent, is influenced by perceptions about outcomes and social norms. The premise of operant conditioning is that people learn from experience and the extent to which their behavior is reinforced. While a theoretical perspective may have been adopted earlier in the planning process, it is important by this point in the process to have developed a theoretical perspective that will facilitate specific program and intervention development.

Strategy and methods, of course, are often associated with theories, as discussed in previous chapters. Intervention strategy includes the channel or approach to the operationalization or delivery of the method. All intervention strategies and methods are concerned with communication. Some theories are concerned with communication within a counseling context, while others are concerned with teaching or media. Some strategies and methods are emphasized and employed in multiple theories, as noted in Chapter 10. Some methods have been evaluated in empirical studies, but in other cases, methods are merely suggested by theory. For example, a number of methods have been developed based on the concern in operant condition with self-management practices, leading to methods such as record keeping, self-monitoring, feedback, and self-reinforcement. Social cognitive theory methods include enactive learning and modeling, while persuasion-oriented theories emphasize methods for elevating perceived risk and benefits.

PHASE III: Program Development

Phase III, program development, involves the development of the following: (1) program components, (2) intervention, and (3) curriculum, guide, or manual (see **Table 13-7**). At least one program component should be developed for each of the societal levels addressed by the program. The key to program development is specifying the intervention objectives and actions.

Step III.1: Create Program Components Many health promotion programs have several

Many health promotion programs have several program components, one at each of several societal levels.

program components, one at each of several societal levels. Each component of a program has in common the concern for the same at-risk population and health status objectives but may focus on a variety of behavior or environment goals, intervention targets, settings, and intervention approaches. Under

the best of circumstances, intervention programming is comprehensive, involving multiple levels and practice settings; however, multiple component programs are less common than those that consist of only one component. A broad focus, nevertheless, appears desirable, based on the promising results of the few comprehensive community programs attempted (Perry et al., 2002; Komro et al., 2008).

Table 13-7 MATCH Phase III: Program Development**Step 1: Create Program Component**

- A. Societal level
- B. Intervention goals—health behavior, environment, intervention level
- C. Targets of interventions

Step 2: Develop Intervention

- A. Develop objectives
- B. Select or create content
- C. Select or create methods
- D. Create learning activities

Step 3: Develop Protocol, Curriculum, Manual, or Guide

- A. Session plans
- B. Materials
- C. Instructions

Source: Simons-Morton, Greene, and Gottlieb (1995).

Program components should be organized according to intervention goals and targets of the intervention. This step may seem redundant with Phase II, Steps 1–2 where you identified possible goals and targets of the intervention. Here the task is to organize the priorities from Phase II, Steps 1–2 into program components. For example, a multiple component program to increase physical activity among schoolchildren might include a component directed at the personal health behavior of the children who are the at risk population. Other program components would be designed to foster changes in the health related and health-protective behaviors that can support and enable an increase in children’s physical activity. Separate program components might be established within the same setting for different objectives and targets of the intervention, as shown by the example in **Table 13-8** for the “Go for Health” (Simons-Morton et al., 1991) and Children’s Activity Trial for Cardiovascular Health (Luepker et al., 1996; Nader et al., 1999). The components employed in these programs included classroom activities directed at students, training directed at classroom and PE teachers, training directed at school lunch staff, media directed at parents, and school-wide activities designed to encourage physical activity. Hence, each component shared the same health status problem, target population, and health behavior and environment objectives, but the objectives, targets of intervention, and intervention approaches and methods were unique.

The intervention for each program component is specific to the intervention goals and targets.

Step III.2: Develop Intervention The intervention for each program component is specific to the intervention goals and targets. The intervention includes an integration of goals, approaches, and methods. This is shown in Table 13-8 for the

Table 13-8 Societal Level, Targets of Intervention, and Intervention Goals, Approaches, Methods, and Objectives in the “Go for Health” and CATCH Programs

Program Component	Societal Level			
	Individual	Interpersonal	Parents	Organizational
Target of the Intervention	Students	Teachers	Parents	School Administrators
Goals	Diet: CVD healthful breakfasts, lunches, dinners, snacks PA: increased MVPA during PE, out of school	Implement the curriculum with fidelity	Provide CVD healthful foods and meals; encourage support child out-of-school PA; support healthful school lunch and PE	Improve PE facilities, equipment, evaluation Provide healthful school meals
Approach	Teaching	Training	Media: newsletters	Personal persuasion; social change
Methods	Enactive learning (practice); associations; skills training; reinforcement; modeling; normative referencing	Enactive learning; skills training; feedback; reinforcement; attention modeling	Persuasive messages	Formal proposal Letters of support Survey data Persuasion
Objectives	KAS: identify, choose, prefer “go” foods; “go” activities Reinforcement Behavioral capability Outcome expectations Self-efficacy Norms Classroom curriculum	High-fidelity curriculum implementation KAS Reinforcement Behavioral capability Outcome expectations Self-efficacy Teacher training manual	KAS: “go” foods; “go” activities Reinforcement Outcome expectations Parent norms Media guide	KAS: “go” foods; “go” activities Reinforcement Outcome expectations Best school norms School lunch; menus; recipes PE: curriculum
Materials	“Go” charts	“Go” charts	Newsletters and persuasive communications	Food ingredients; PE equipment

CVD = cardiovascular; PE = physical education; PA = physical activity; KAS = knowledge, attitudes, skills; MVPA = moderate to vigorous physical activity; CATCH = Child and Adolescent Trial for Cardiovascular Health.

four components of the Go for Health Program. The individual-level component targeted students (the at risk population) in class. The intervention goal was to increase consumption of “go” foods and participation in “go” activities. Go foods are low in fat and sodium. Go activities increase heart rate and breathing. The general intervention approach taken was teaching; most of the methods were derived from social cognitive theory. One social cognitive theory method employed is enactive learning, which is designed to facilitate learning through experience. Accordingly, in the classroom, students were provided with a wide range of healthful foods to try. Trying these foods provided feedback to the student and allowed the teacher to provide reinforcement. Various activities were conducted to increase students’ knowledge about “go” foods (low in fat and sodium) and to facilitate positive outcome expectations for eating them (for example, my teacher would like it if I ate fruit for a snack). Students were trained to ask for and expect fruit at meals. Training was designed to increase self-efficacy for obtaining and eating “go” foods. Gradually, through repeated experience and through observing others eating these foods, favorable social norms would form. Similarly, in class, students were introduced to fun physical activities, taught to identify “go” activities (those that increased breathing and heart rate) and to develop positive outcome expectations for engaging in these activities. Students maintained daily diaries of their “go” foods and “go” activities and were reinforced when they reached certain milestones.

At the teacher level, the intervention goal was for teachers to implement the curricula with fidelity. (This would be health-protective behavior.) Separate components were developed for classroom and physical education teachers. The intervention approach was training, which consisted of special training sessions for the participating teachers and feedback from a “master” teacher. The goal of training is always to facilitate the participants’ ability to perform the required tasks, in this case to implement the curriculum. However, much of what was asked of the teachers was not part of their usual practice. Mainly, we wanted enactive learning and not didactic instruction. This was difficult for some teachers unused to guiding students in small groups and allowing students to learn by doing rather than by telling them things. Therefore, the intervention was really to motivate the teachers to implement the curriculum. The intervention objectives were similar for teachers as for students. We wanted them to learn how to teach by actually using the curriculum, so in training, teachers practiced the sessions with one another and then discussed the session and the activities. This made them partners in developing the curriculum and gave them experience through enactive learning. The master teacher, of course, provided ample feedback and reinforcement. The idea was to train to mastery, so teachers repeated a number of lessons until the teachers and the master teacher were satisfied. Teachers participated in the training activities and observed the master teacher and the teachers in training. Gradually, through positive experience, teachers developed increased self-efficacy and outcome expectations. Because they were together in the training, the lesson principles gradually became normative.

Similar training was conducted with physical education teachers and school lunch professionals. Physical education teachers were recruited to help create PE sessions that included many “go” activities, which were defined as involving at least half the students

in moderate to vigorous physical activity (MVPA) at any one time. We observed typical and “go” class sessions and provided feedback to teachers on the amount of MVPA students obtained. Through training and feedback, teachers gradually figured out how to incorporate “go” activities and to increase average MVPA. However, teachers found that teaching in this new way was more work than the old way of throwing out a few balls and letting the kids play. Only by providing feedback from student surveys and objective observations of student MVPA did teachers realize the advantages of the new curriculum and approach to physical education. Over a period of time, with practice and feedback, teachers became more confident (self-efficacy), developed more favorable outcome expectations, developed self-efficacy, and ultimately increased the average amount of MVPA (Simons-Morton et al., 1997). Similar findings were observed in CATCH (Child and Adolescent Trial for Cardiovascular Health) (McKenzie et al., 2001).

The school lunch component targeted school food service. The idea was to employ menus and recipes that were low in fat and sodium. However, like all cooks, the school lunch staffs were committed to their old cooking methods, which included a lot of fat and sodium. To convince them that students liked and would eat new recipes, we observed the amounts students ate and provided feedback to the cooks. Gradually, as their skills improved, cooks began to develop confidence (self-efficacy) and favorable expectancies. Substantial changes in the fat and sodium content of school lunches were observed (Simons-Morton et al., 1991; Nader et al., 1999).

The parent component was designed to encourage parents to facilitate their children’s healthful diet and physical activity through protective health behaviors, including making “go” foods available at home and increasing family physical activity. The intervention approach was media, including newsletters, brief persuasive communications taken home by students, and parent involvement in student homework assignments. Social cognitive theory variables guided media development. For example, the media suggested that the target parent supported behaviors that were normative among parents like them. The persuasive materials emphasized “how to” information and positive outcomes to enhance self-efficacy and outcome expectations.

The school component was directed at school administrators and was designed to create a healthful school environment by changing health-related behaviors related to school programs so that they would be protective health behavior. The intervention targeted the director of school lunch, the school principals, and key school district staff. The intervention approach was based on organizational change principles. We formed a group of key school district administrators and met with them individually and in groups and presented ideas about change. We identified areas of agreement and areas of concern. We developed proposals for areas of agreement and collected data on areas of concern (which included the following: parents are not interested; teachers will not participate; it will be expensive to change school lunches). We used social cognitive theory principles to foster program acceptance, providing feedback to the administrator group from surveys with teachers, students, and parents indicating support for the program. We conducted pilot studies with a few classrooms and shared the resulting evidence of the effects of the pilot activities on student learning and behavior and teacher-reported satisfaction. We developed

visually attract reports of program activities, evidence of effects, and testimonials from students, teachers, and parents of the benefits and value of the program.

Step III.3: Select or Develop Intervention Protocol, Curricula, Manual, or Guide The blueprint

The blueprint for each program component is a protocol, curriculum, manual, or guide that describes how the intervention is meant to work and includes all the information and materials needed for implementation.

for each program component is a protocol, curriculum, manual, or guide that describes how the intervention is meant to work and includes all the information and materials needed for implementation. Curriculum is generally used for formal educational components and can be highly specific, down to the details of each educational session. Protocols, manuals, and guides may be more general, but like curriculum should describe the objectives

and learning activities and include instructions and materials. The best guides clearly describe activities, methods, materials, and evaluation criteria. Henceforth, we will use the more general term *intervention guide*. Intervention guides should describe what is to be done in a manner that would enable qualified and trained persons to implement it.

Intervention guide development is a demanding task. Intervention guides should

Intervention guides should organize content into orderly sessions that fit the channel and approach selected.

organize content into orderly sessions that fit the channel and approach selected. Intervention guides should describe the assumptions about learning derived from the approach and theory employed by the program developers. Intervention guides should describe the sequence of the content and activi-

ties. In the Go for Health and CATCH programs, for example, five guides were developed: (1) the classroom curriculum described the classroom teaching-learning objectives, methods, and actions regarding student knowledge, attitudes, and skills; (2) the classroom teacher guide provided detailed training instructions for classroom teachers; (3) the physical education teacher guide described the “go” physical education curriculum, including model sessions, and provides alternative activities, suggestions for methods, and needed equipment; (4) the school lunch guide included “go” menus, recipes, and general cooking suggestions (5) the guide for the parent component included instructions on delivering a sequence of persuasive communications directed at parents to encourage regular discussions about adolescent substance use.

In many cases materials or products must be developed, purchased, or modified and made available for the session. Among these are print materials (books, booklets, leaflets, brochures); mediated messages, and reminders (posters, announcements, audio tapes, DVDs, etc.); and model proposals, policies, and laws. Sometimes these materials constitute a major part or even the entire innovation for which adoption and implementation is sought. The Go for Health and CATCH programs were well funded and were able to develop many of the necessary materials. These programs provided allowances for physical education teachers to purchase equipment so that activities would not be limited by equipment shortages. Materials needed for the classroom curriculum were also provided, including the “go” diaries and incentives the teachers could use to reward students for activity completion. The media guide included the timeline for the delivery of the materials to parents, as well as the booklet and parent notes themselves.

Product/materials development is a demanding task requiring a range of skills and great attention to the practical needs of the potential users. Sometimes the intervention objectives can be achieved by adopting an existing curriculum, guide for public service announcements, of the like. In other situations, it is necessary to create the entire component, including the materials required.

Note About Intervention Processes

The accomplishment of each behavioral or environmental intervention goal requires change in the cognitions of the target of the intervention.

The accomplishment of each behavioral or environmental intervention goal requires change in the cognitions of the target of the intervention. Although the intervention objectives at other than the individual level are often environmental, their accomplishment requires behavior change (a shift in protective health behavior) on the part of those who control

or influence that goal. In our example of the Go for Health Program, the environmental goals at the interpersonal and school level were to provide environmental supports for children's healthful diet and physical activity. Specifically, at the school level, the environmental objectives were to provide school lunches that were low in fat and PE that involved students in high levels of physical activity. The targets of intervention were teachers and school administrators. To get them to adopt the Go for Health Program, interventions were designed to alter the knowledge, beliefs, attitudes, and skills of the targets of interventions. Through training sessions and meetings, the Go for Health staff attempted to alter the norms of the school such that change would be possible and attitudes and skills of the intervention targets would enable change. Basically, the categories of target objectives were the same (they always are) for each target of intervention, but the specific knowledge and attitudes of the at-risk population schoolchildren would be somewhat different from those for the teachers and administrators.

As we have argued throughout this book, behavior of all sorts is mediated largely by cognitive factors, and regardless of the target of intervention and intervention goals, the objectives are cognitive. This is true of personal health behavior, health related behavior, and health-protective behavior. Even the adoption of policy requires that policy makers understand the relative advantages of the proposed changes, believe in the potential outcomes, have confidence that they can accomplish the changes without too much effort and without too many barriers or complaints, and be willing to advocate for, and act on, adopt, implement, and enforce the new policy. Viewed from other theoretical perspectives, policy makers are likely to change to the extent they perceive the advantages of the change outweigh the disadvantages, or that greater reinforcement will result from making the change than from not. Therefore, all intervention actions are designed to change the knowledge, perceptions, attitudes, skills, and/or values of the targets of the intervention. In program components, the key cognitive factors become intervention objectives because they are likely to mediate change. Cognitions are the variables that can be altered in health promotion, whether to improve personal health behavior, health related behavior, or health-protective behavior and regardless of the target of the intervention. When developing a program one cannot know for sure in advance which mediators may be

operative, but based on theory, literature reviews, and needs assessments, it is possible to identify hypothesized mediators. Theory describes the constructs that are likely to be associated with behavior. In the Go for Health and CATCH programs social cognitive theory provided the framework for developing objectives, methods, learning activities, and evaluation tools.

Phase IV: Program Adoption, Implementation, and Dissemination

Adoption and implementation are not assured, even for well-developed programs. True adoption, quality implementation, and widespread dissemination require planning and effort. Steps in the planning process for these program goals are shown in **Table 13-9**.

A new program or program component, like a new business, must compete with existing programs and options and ultimately may not be adopted or may be adopted but not fully implemented.

Step IV.1: Program Adoption A new program or program component, like a new business, must compete with existing programs and options and ultimately may not be adopted or may be adopted but not fully implemented. New programs rarely receive adequate resources and must justify additional resources on the basis of performance and, therefore, have a high risk of failure. New programs often do not initially have

the support of those who would be involved in their adoption and implementation. All these disadvantages serve to emphasize the importance of careful planning to establish conditions favoring adoption and implementation of the program.

Adoption of a program or program component often requires planned effort to get decision makers to agree. Often in health promotion, the goal is to get a new program adopted where none exists. Sometimes the goal is to replace one program with another or to modify how an existing program is conducted. In any case, decision makers need to be

Table 13-9 MATCH Phase IV: Adoption, Implementation, and Dissemination Planning

Step 1: Facilitate Adoption, Implementation, and Maintenance

- A. Develop proposal and advocate for adoption of change
- B. Provide evidence of acceptability
- C. Provide evidence of efficacy
- D. Identify/select change agents and opinion leaders
- E. Identify possible barriers and solutions

Step 2: Implementation and Maintenance

- A. Plan
- B. Training
- C. Practice and feedback
- D. Support and reinforcement

Step 3: Dissemination and Translation

Source: Simons-Morton, Greene, and Gottlieb (1995).

convinced that the proposed program is going to be better, more effective, and not more expensive. The way health promotion specialists convince decisions makers to adopt a policy or a program is the same way they convince a smoker to stop or a coach potato to exercise. Cognitions are associated with behavior and changes in cognition are associated with changes in behavior, include health related and health protective behaviors.

Diffusion of innovation provides an excellent conceptualization for how to position a new program or innovation. The key is to provide evidence that the program is better than the options. Like all innovations, programs are more likely to be adopted if they have relative advantage, are compatible with existing practices, are not overly complex, can be tried without too much disruption and expense, and have effects that are easily observed. Evidence about the characteristics of a program—why it is needed, how it would work, who would implement it, and its cost—can be provided logically. Some ideas are compelling and have been quickly and widely adopted, for example “alcohol-free prom night.” However, each school or district must decide from among a wide variety of such programs. For many programs, convincing evidence leading to adoption must often be provided in the form of data from pilot work showing participant acceptance and positive effects. The opinions of experts and those with experience with the program can also be persuasive, but examples of successful programs in similar contexts can be very powerful. Actual evidence of effectiveness of the program can be very persuasive, although the relative advantages of the program for the adopters’ unique circumstances must also be provided.

Some steps health promotion planners can take to foster adoption include the following: (1) develop a specific proposal that describes the proposed program; (2) provide evidence of the program’s acceptability to stakeholders; (3) provide evidence of the program’s effectiveness; (4) identify opinion leaders and convince them to lobby for program adoption; (5) anticipate all possible criticisms and come up with solutions for each; (6) identify the specific behaviors the potential adopters would need to take; (7) identify (through needs assessment and/or based on theory) cognitions related to these behaviors; (8) develop an intervention to facilitate changes in the cognitions related to adoption; (9) implement the intervention; (10) evaluate the result and revise the intervention plan.

In Go for Health and CATCH, a proposal was developed and used to recruit schools and school districts. The proposal established the need and benefits of the program and described the program goals and activities. Fortunately, pilot data had been collected that provided evidence of the acceptability of the program to the various stakeholders and evidence of the program’s effectiveness, and this information was included in the proposal. A number of school district opinion leaders were identified and they were recruited to lobby for program adoption. The proposal included a list of the possible barriers and problems to program adoption and solutions. The solutions to common concerns were useful not only for the proposal but also in meetings with principals and other school administrators whose concerns were mainly possible costs, complaints from teachers or parents, and conflicts with other initiatives. Once these concerns were resolved, adoption became likely.

Step IV.2: Implementation and Maintenance Effective, high-quality program implementation requires planning, training, practice and feedback, and support and reinforcement.

An implementation plan may be as important as program development. The implementation plan should consider the resources needed for the program, including staff, materials, and space.

Staff need to understand the goals and objectives of the program, to be able to correctly and capably apply the methods and actions for achieving change, and to employ effective strategies for dealing with barriers to implementation and other problems.

Staff training is a key implementation issue. Staff need to understand the goals and objectives of the program, to be able to correctly and capably apply the methods and actions for achieving change, and to employ effective strategies for dealing with barriers to implementation and other problems. The amount of nature and the amount of training may depend on the qualifications and experience of the staff. In Go for Health and CATCH funds were available to cover training

days for teachers and staff.

No matter how well trained, staff tend not to follow the intervention guide exactly. While some flexibility in implementation may be a good thing, too much drift can undermine the integrity of the program. Practice seems to greatly improve staff's ability to conduct lessons, but unless staff are occasionally observed and provided with feedback, fidelity cannot be assured. Because staff can feel threatened by being observed, in Go for Health we hired a master teacher from the school district who was well liked and trusted by staff and was responsible for observations and feedback.

It can be difficult and lonely implementing program activities, and staff need support, guidance, and sometimes additional training. Indeed, as noted implementation is health protective behavior. To get staff to implement a new curriculum or otherwise adopt a program, the health promotion specialist needs to identify and address the cognitions related to implementation behavior. In Go For Health, we used social cognitive variables to foster implementation. Go For Health staff helped teachers set implementation goals and met regularly to discuss the program and ways of improving program delivery and outcomes. Staff provided feedback about the extent and quality of implementation; support, recognition, and incentives for implementation; feedback about student evaluations of the curriculum. Training was designed to increase behavioral capability and efficacy and outcome expectations for curriculum implementation.

Step IV.3: Program Dissemination and Translation Once a program has been developed and implemented and its efficacy has been favorably evaluated, it can be disseminated more broadly. CATCH, a widely disseminated program, used many of the principles discussed earlier in this section on adoption and developed a number of methods for increasing dissemination. The key was to establish that the program was endorsed by professional and administrative groups.

Program translation is the process of adapting a program designed for particular targets and settings for use with other groups or settings. Translation of successful and effective programs is common because there is such great demand for them and they are commonly adapted for a range of applications. Program translation is a good thing, particularly when it includes evaluation. Dissemination is simply adoption on a wider scale. Fostering adoption involves the same process as fostering implementation, as just described.

Phase V: Evaluation

Phase V consists of three steps—process evaluation, impact evaluation, and outcome evaluation. These steps are briefly discussed in the following paragraphs and in more detail in Chapter 14.

Process evaluation plan is concerned with the extent and quality of implementation and exposure.

Step V.1: Conduct Process Evaluation Process evaluation plan is concerned with the extent and quality of implementation and exposure. **Process evaluation** asks about the extent to which the planned activities were delivered and their fidelity and quality. Process evaluation also asks about how many, who, and to what extent were they exposed to the activity. Process evaluation is typically evaluated with self-reports, sign-in sheets, and the like. Sometimes observations can be conducted and other objective evaluations of participation and exposure are possible. Process evaluation provides information that can be used to identify and correct problems. This information may also be useful for revising the program and for interpreting program results. Unless the program activities are delivered well and broadly, little effect could be expected. Process evaluation must be planned, because the evaluation methods and procedures need to be in place before implementation.

Impact evaluation is concerned with the extent to which the intervention goals and objectives were achieved.

Step V.2: Measure Impact Impact evaluation is concerned with the extent to which the intervention goals and objectives were achieved. At one level **impact evaluation** is concerned with changes in the targeted environmental and behavior goals and cognitive objectives, as shown in **Table 13-10**. At

Table 13-10 MATCH Phase V: Evaluation

Step 1: Conduct Process Evaluation

- A. Were the activities conducted; how completely and how well?
- B. Who was exposed and to how much and how many of the activities?

Step 2: Measure Evaluation

- A. What did the participants learn?
 - 1. Knowledge and skills
 - 2. Beliefs, perceptions, attitudes, and values
 - 3. Behavior
- B. Were the intervention goals (behavior, policy, program adoption, etc.) achieved?

Step 3: Monitor Outcomes

- A. Did health behavior change/improve?
 - B. Was there a reduction in the prevalence of a problem or improvement in the quality of life or other positive outcomes?
 - C. Was the program cost-effective?
-

Source: Simons-Morton, Greene, and Gottlieb (1995).

the most basic level, we are interested in the extent to which those exposed understood the information, developed new knowledge, and learned new skills. At another level, we are interested in knowing the program's effect on affective variables, beliefs, perceptions, values, norms. The specific cognitions evaluated would depend on the program objectives, which, of course, should be guided by theory. At another level, we are interested in the extent to which the intervention goals for behavior and environmental supports were achieved.

Outcome evaluation is typically concerned with health behavior, health status, environmental changes, and program costs.

Step V.3: Monitor Outcomes Outcome evaluation is typically concerned with health behavior, health status, environmental changes, and program costs. Because health outcomes are sometimes achieved in the distant future, they are not always

evaluated. However, health outcomes are the best evidence of program effectiveness and the evaluation plan should include a reasonable approach to their assessment.

TAKE HOME MESSAGES

Program planning is important, complex, and ultimately rewarding. In this chapter, we provide basic information about program planning and the role of theory in this process. We elaborated about the MATCH planning model and provided examples of how program planning can be used to conceptualize multilevel intervention and develop, implement, and evaluate health promotion programs. Take home points include the following:

1. Program planning should be comprehensive, taking into account the range of influences on the outcomes of interest. Ecological planning frameworks, PRECEDE-PROCEED, intervention mapping, and MATCH, provide guidance for multilevel planning.
2. Theory can guide program planning by providing conceptual orientation, suggesting likely mediators and methods, and describing hypothesized relationships between mediators and outcomes. Theory can and should guide needs assessment, program development, intervention, and evaluation. Different theories might apply at each societal level within multilevel programs.
3. A critically useful distinction can and should be made in ecological planning between the at-risk population and other possible targets of intervention, such as individuals and groups who can influence or control the health and behavior of the at-risk population. By making this distinction, the planner can devise multilevel programs that optimally address the health and behavior of the at-risk population.
4. In MATCH, environmental goals (e.g., policies, practices, resources, programs, etc.) are achieved by creating intervention components that address the behavior of those who control the goal(s). Because personal health, health related, and health-protective behavior, like behavior unrelated to health is greatly influenced by cognitions, health promotion programs can identify those cognitions through theory and needs assessments and then develop components to foster behavior change.
5. A program includes structure, including the goals and objectives, targets, resources, personnel, and materials, and function, such as training, intervention activities, and implementation support.

6. Intervention is best considered as the actions and activities within a program and not the program itself. An intervention might include a set of media activities designed to promote awareness of a program; it might include the activities within a curriculum, a set of counseling activities, community organizing activities, policy advocacy, and so forth. The intervention should not be confused with the structure of the program or goals and objectives. Accordingly, policy, administration, and resource allocation are goals, not interventions.

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