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Promoting Healthy Behavior

by Elaine M. Murphy

Population Reference Bureau

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Promoting Healthy Behavior

Health is a state of complete physical, psychological, and social well-being and not simply the absence of disease or infirmity.

—World Health Organization, 1948

Behavior, Health, and the Millennium

In the late 1970s, international health leaders gathered to ponder what the health of the world would look like in the year 2000. Their crystal ball showed vast improvements and essentially healthy populations all over the world.¹ Looking back, their optimism is understandable. In a little over 25 years—from the mid-20th century—global public health efforts had met with enormous success in beating back disease and even eradicating smallpox, one of the world's worst health scourges. Infant and child mortality had dropped in the face of massive immunization campaigns, food supplements, and new treatments of common illnesses. The advent of antibiotics saved millions of lives. Life expectancy rose dramatically in both developed and developing countries. Health professionals felt that, given the political resolve and adequate resources, a concerted effort in extending these and other effective interventions to all corners of the world would transform this idealistic vision into reality by the dawn of the 21st century.

But crystal balls are unreliable. Today, in spite of overall progress, good health eludes billions of people. AIDS has reversed child survival and life expectancy gains in parts of Africa.² Armed conflicts kill millions directly—and millions more children succumb to malnutrition and disease.³ In some countries, immunization coverage rates have declined significantly.⁴ Ever-growing resistance to antibiotics has diminished their once almost-magical promise. Malaria and tuberculosis remain major afflictions in poor countries, while in wealthier countries obesity contributes to high rates of heart disease, diabetes, and cancer.

Given their appreciation of technology, health leaders in the 1970s might have had difficulty imagining the central role of human behavior in denying health for all by 2000: Death and disease from *preventable* causes remain high. Although viruses, bacteria, other pathogens, congenital factors, and genetics are obviously implicated in many of the world's most pressing health problems, we cannot solve these problems solely through technical fixes such as vaccines, a new generation of antibiotics, or gene therapy.⁵ Human behavior is a key factor in determining health. It is easy to see the impact of individual actions such as unsafe sex, smoking, or failure to get one's child immunized. But we must also recognize these important health-related behaviors: The decisions of policymakers that address or fail to address (or increase) the poverty of its citizens; adequate or unjustly small allocations by budget makers for preventative

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This *Health Bulletin* is dedicated to Everett M. Rogers, pioneer in the behavior-change field and author of *Diffusion of Innovations*, who passed away in October 2004. The author is very grateful to Lori Ashford, Dara Carr, Yvette Collymore, Kristina Gryboski, Joan Haffey, Carl Haub, Tom Merrick, Asha Mohamud, Gordon Perkin, Arvind Singhal, and Nancy Yinger for their careful reading and good suggestions, and to Susan Zimicki for her early contributions to conceptualizing the report.

and curative health; the practices of health care staff who treat clients courteously or rudely; the implementation of effective or poorly designed health programs; and decisions by many outside the health sector related, for example, to providing safe water and hygiene or to building and repairing roads.

This *Health Bulletin* examines the pivotal role behavior plays in the leading causes of death and disability—and the prevention or mitigation of these causes. It describes the research-based frameworks behavioral scientists use to understand and influence health-related behaviors, and a variety of effective tools that health promotion programs use. In addition, by presenting a series of successful case histories and lessons learned, this *Bulletin* aspires to help public health and other professionals better integrate behavior-change strategies into their programs and policies at every level.

Risky Behavior

The behavior-health link becomes even clearer when examining the 10 leading risk factors identified by the World Health Organization (WHO) for preventable death and disease worldwide: maternal and child underweight; unsafe sex; high blood pressure; tobacco; alcohol; unsafe water, poor sanitation, and hygiene; high cholesterol; indoor smoke from solid fuels; iron deficiency; and high body mass index (BMI), or overweight. Forty percent of deaths worldwide are due to these 10 risk factors alone, according to WHO.⁶ Global healthy life expectancy could be increased by five to 10 years if health-promoting

decisions by individuals, communities, health systems, and governments reduced these risks.

Interestingly, two items on the global list of top 10 risk factors deal with opposite ends of nutrition—being underweight and overweight (see Table 1). Obesity plagues people in developed countries and the better-off in poor and middle-income countries. The behavioral connection is obvious. Diets high in fat, salt, and sugar and low in fruits and vegetables, coupled with lack of exercise, have led to alarmingly high proportions of overweight people and commensurately high rates of diabetes, ischemic heart disease, high blood pressure, and strokes. Obesity will lead to 5 million deaths per year by 2020, compared with 3 million per year at present. In contrast, being underweight is an enormous risk factor in poor countries. Childhood malnutrition, which currently accounts for 130 million deaths annually, is gradually decreasing due to public health interventions, but it is still projected to cause 110 million deaths in 2020.⁷

Because poverty, gender inequity, and other disparities are underlying causes of undernutrition, addressing this health problem requires behavior change at multiple levels. For example, decisions made by political and development leaders—international, national, and local—often create or worsen poverty. Paul Farmer calls this “structural violence,” and uses the example of dams that serve the electricity needs of agribusiness, industry, and the elite but that inundate farmland of the poor, exacerbating poverty and hunger.⁸ Gender-inequitable norms mean that poor women and girls eat less-nourishing foods.⁹ Discrimination ensures that some groups are underserved or not served at all by health and nutrition programs.¹⁰ In addition, the health system often fails to identify malnutrition or simply ignores it. For many poor pregnant women, eating eggs is “taboo”; culturally sensitive nutrition programs could increase the acceptability of this protein source. Breastfeeding—ideally, exclusive breastfeeding for the first six months—is by far the best source of nutrition and disease immunities for infants, but has to be vigorously promoted to mothers to counter years of declining practice and commercial promotion of infant formula. And today, because HIV can be passed to infants via breast milk, women need clear breastfeeding counseling more than ever.

Beyond malnutrition, other leading risk factors call for behavior change. Alcohol is the third-highest risk factor in developed regions and a growing problem in poor countries. Tobacco is

Table 1
Top Risk Factors Leading to Disease, Disability, or Death

| Poorest Countries | Developed Countries |
|---------------------------------------|---------------------------------|
| 1. Underweight | 1. Tobacco |
| 2. Unsafe sex | 2. High blood pressure |
| 3. Unsafe water, sanitation & hygiene | 3. Alcohol |
| 4. Indoor smoke from solid fuels | 4. High cholesterol |
| 5. Zinc deficiency | 5. High BMI |
| 6. Iron deficiency | 6. Low fruit & vegetable intake |
| 7. Vitamin A deficiency | 7. Physical inactivity |
| 8. High blood pressure | 8. Illicit drugs |
| 9. Tobacco | 9. Unsafe sex |
| 10. High cholesterol | 10. Iron deficiency |

Source: M. Ezzati et al., “Selected Major Risk Factors and Global and Regional Burdens of Disease,” *The Lancet* 360, no. 9343 (2002).

a major risk factor throughout the world. WHO estimates that if current trends continue, tobacco use will be responsible for 9 million deaths in the year 2020, compared with 5 million today. Unsafe sex—not protecting against infections or unwanted pregnancies—is among the top 10 risk factors in both rich countries and poor countries. Rich or poor, unsafe sex is behavior and bringing about safer sex behaviors is a global public health imperative.

From Health Risks to the Burden of Disease

Risk factors translate into disease, disability, and death—collectively referred to by the international health community as the “burden of disease” (see Table 2). Addressing risky behaviors rather than specific diseases is cost-effective because one risk factor can result in or worsen several diseases. For example, tobacco causes or contributes to lung cancer, ischemic heart disease, diabetes, and cerebrovascular disease. Undernutrition is an underlying cause of diseases causing an estimated 60 percent of child deaths.¹¹ Unsafe sex, the second-highest risk factor in poor countries, translates into HIV/AIDS; other sexually transmitted infections; fistulas; cervical cancer; and unsafe pregnancies, abortions, and births. Alcohol abuse contributes to brain impairment, including fetal alcohol syndrome, cirrhosis and cancer of the liver, and death and injuries from violence and accidents. In fact, in many developing countries driver error is the main cause of road traffic accidents, a growing cause of death and disability.¹² According to the director of WHO’s Global Program on Evidence for Health Policy, “Globally, we need to achieve a much better balance between preventing disease and merely treating its consequences. This can only come about with concerted action to identify and reduce major risks to health.”¹³

Considering only direct causes of death, behavior plays a key role. For the world as a whole, the *World Health Report 2000* ranked the causes of global deaths into three categories.¹⁴ The highest, at almost 60 percent, is noncommunicable diseases; the greatest proportion is due to cardiovascular disease. More than 30 percent of global deaths are due to communicable diseases, maternal and perinatal conditions, and nutritional deficiencies. The remaining 10 percent are deaths by injuries. In poor countries, however, the order is tellingly different: Communicable diseases, maternal and perinatal conditions, and nutritional deficiencies cause the majority of

Table 2
Top Diseases, Disabilities, or Causes of Death

| Poorest Countries | Developed Countries |
|---------------------------------|--|
| 1. Underweight | 1. Tobacco |
| 2. HIV/AIDS | 2. Ischemic heart disease |
| 3. Lower respiratory infections | 3. Unipolar depressive disorder |
| 4. Perinatal conditions | Cerebrovascular disease |
| Diarrheal diseases | 4. Alcohol use disorders |
| 5. Malaria | 5. Hearing loss, adult onset |
| 6. Maternal conditions | 6. Chronic obstructive pulmonary disease |
| 7. Unipolar depressive disorder | 7. Road accidents |
| 8. Ischemic heart disease | 8. Tracheal/bronchial/lung cancers |
| 9. Measles | 9. Alzheimer and other dementias |
| 10. Tuberculosis | 10. Self-inflicted injuries |

Source: World Health Organization (WHO), *Global Burden of Disease in 2002: Data Source, Methods and Results* (2003).

deaths, followed by injuries and noncommunicable diseases. No matter where one lives, behavior change would significantly reduce exposure to these killers, or, once exposed, would mitigate their consequences through early treatment.

A More Focused Health Agenda

In promoting healthy behaviors, another question arises: How can we deal with threats to health when there are so many of them everywhere in the world? The answer is to adopt a more focused and effective approach. One global initiative, the Disease Control Priorities Project, is helping health planners to concentrate resources where they are most needed in developing countries.¹⁵ Another initiative is based on a consensus of world leaders who gathered at the Millennium Summit in September 2000 and identified eight Millennium Development Goals (MDGs). In collaboration with the World Bank and other UN agencies, the United Nations Development Programme spearheads this effort to reduce poverty and hunger, spur sustainable development, and address the planet’s biggest health problems. One or more targets have been set for each goal, most for 2015 (see Table 3, page 4).¹⁶ Achieving disease-control priorities in developing countries and the overlapping MDGs will depend on changing the behavior not only of individuals but also of community leaders, health system officials, and policymakers.¹⁷

But still a question remains: Can we influence behavior sufficiently to achieve these goals? Behavioral science suggests that we can and offers evidence-based theories of behavior change.

Understanding and Influencing People

There is no doubt that human behavior is complex and often beyond comprehension. Throughout history, the best writers have tried to elucidate the complexities and, in fact, have celebrated the mystery and unpredictability of human beings. E.M. Forster, for example, defines a three-dimensional novel—deserving highest praise—as one whose characters are capable of surprising the reader.¹⁸ If human behavior were simple to figure out, there would be no great literature, no suspense in political outcomes, and, for that matter, no stock market. Working to change health-related behaviors would be very easy. However, individuals are

unique and their behaviors are multidimensional. Individuals vary within groups and groups differ in significant ways from each other. Some behaviors defy explanation. At the same time, the quest to understand human behavior is not entirely elusive. Research has shed light on some of the “levers” that move human beings to act.

This section reviews some of the behavior-change theories that behavioral scientists have used to explain and influence health behaviors of both individuals and social groups.¹⁹ Theory is important because it goes beyond trying to explain actions or inactions of *specific* individuals to provide a unified basis for understanding, predicting to the extent possible, and influencing human behavior *in general*. The theories are divided into categories according to the desired locus of change. In reality, it would be artificial and impossible to analyze individuals' behavior without considering the social context in which they live, or to analyze group behavior without appreciating differences among the individuals who compose that group. However, those who design interventions often find one or another theory, or a combination of theories, more satisfying and applicable to their needs.

In an earlier day, the task of changing health-related behavior was thought to be simply a matter of sending health messages such as “Breastfeed your baby!” or “Use condoms!” to those who were perceived to need them—a one-direction communication approach. Today, sound health promotion programs no longer rely on one-shot exhortations via booklets, posters, or media broadcasts. They encompass extensive research on relevant audiences; skill-building; multichanneled education and advocacy using influential persons; policy development; community mobilization; and organizational, economic, and environmental change (see Box 1). This approach recognizes that human beings live in a dynamic “social ecology” as well as a physical one.

The theories described below fit within an ecological perspective; this perspective involves two key ideas that can help guide health interventions.²⁰ First, health-related behaviors are affected by, and affect, *multiple levels of influence*: intrapersonal or individual factors, interpersonal factors, institutional or organizational factors, community factors, and public policy factors (see Table 4). For example, a young man may consider practicing safer sex or abstaining because he was exposed to AIDS education and

Table 3

The Millennium Development Goals and Main Targets for 2015

Goal 1. Eradicate extreme poverty and hunger: Reduce by half the 1990 proportion of people living on less than a dollar a day; reduce by half the proportion of people who suffer from hunger.

Goal 2. Achieve universal primary education: Ensure that all boys and girls complete a full course of primary schooling.

Goal 3. Promote gender equality and empower women: Eliminate gender disparity in primary and secondary education preferably by 2005 and at all levels by 2015.

Goal 4. Reduce child mortality: Reduce by two-thirds the mortality rate among children under 5.

Goal 5. Improve maternal health: Reduce by three-fourths the maternal mortality ratio.

Goal 6. Combat HIV/AIDS, malaria, and other diseases: Halt and begin to reverse the spread of HIV/AIDS; halt and begin to reverse the incidence of malaria and other major diseases.

Goal 7. Ensure environmental sustainability: Integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources; reduce by half the proportion of people without sustainable access to safe drinking water; achieve significant improvement in the lives of at least 100 million slum dwellers by 2020.

Goal 8. Develop a global partnership for development: Develop further an open [and non-discriminatory] trading and financial system; [make] a commitment to good governance, development and poverty reduction—nationally and internationally; address the needs of the least developed countries, including quota-free access for their exports and enhanced debt relief; develop decent and productive work for youth; in cooperation with pharmaceutical companies, provide access to affordable essential drugs; make available the benefits of new technologies—especially information and communications technologies.

Source: United Nations Millennium Development Goals (MDGs), accessed www.un.org/millenniumgoals, on March 26, 2005.

wants to protect himself from HIV. However, his motivation is low because his friends do not believe the danger and make fun of abstaining or using condoms. Community norms encourage multiple partners for males. Moreover, health clinics refused to serve him the one time he tried to obtain condoms. Tariffs on imported condoms make pharmacy prices too high for him and school policies prohibit distribution of condoms to students.

The second key idea recognizes *reciprocal causation* between individuals and their environments: Behavior both influences and is influenced by the social environment in which it occurs. In the example above, the young man joins a peer education group trying to protect youth and recruit more members. The group organizes a massive rally and receives wide media coverage. Parents, teachers, and a growing number of policymakers become concerned about young people's vulnerability, and eventually (and not without setbacks), schools and other outlets offer sex education and free or low-cost condoms.

Individual-Oriented Models

Theorists focusing on individuals recognize that one person's behavior does not exist in a vacuum and is influenced by context. (See Table 5, page 9, for Summaries of Selected Behavior Change Theories.) Their models relate a person's readiness and ability to undertake healthier behaviors to his or her characteristics: levels of knowledge, skills, perceptions, beliefs, values, motivation, levels of self-efficacy ("Can I do this?") and self-esteem ("Do I deserve to be healthy?"), and the need for the approval of others. Personality traits (such as shyness or boldness) and genetic factors (such as predisposition to depression or alcoholism) are also important.

In fact, the individual is the most basic unit of health promotion. All levels—groups, organizations, communities, and nations—are composed of individuals. An individual can be influenced to make decisions in his or her personal life. But influencing some people—those who lead nations, manage organizations, sway their peers, raise children, and develop health-related policies—means influencing others as well. At the practical level, a large percentage of health professionals spend their time dealing with individuals in face-to-face encounters such as counseling or giving clients instructions. Educational materials such as booklets and posters in health clinics

are intended for individual consumption; mass media reaches large numbers at the same time. Thus, although concentrating on individuals alone—still the default mode in many places—is inadequate for widespread and sustained behavior change, individual-level models such as the Stages of Change and Health Belief models should be components of, or at the least consistent with, broader-level theories and approaches.

Box 1

Health Behaviors Can Be Changed

Success in improving health depends on specific efforts to promote appropriate behaviors and not just on the introduction of new drugs and technologies. In some of Africa's most remote and disadvantaged villages, for example, families learned to filter their water to prevent guinea worm disease. In Bangladesh, mothers learned—and now teach their daughters—how to mix clean water with a simple salt-and-sugar solution to prevent childhood deaths from dehydrating diarrheal diseases. And in Poland, which had the highest cigarette consumption in the world before 1990, smoking rates have plummeted as a result of a combination of taxation, health education, and legal restrictions on tobacco consumption, sales, and advertising.

Source: Ruth Levine et al., eds., *Millions Saved: Proven Successes in Global Health* (Washington, DC: Center for Global Development, 2004): 5.

Table 4

An Ecological Perspective: Levels of Influence

| Concept | Definition |
|------------------------------|--|
| Individual factors | Individual characteristics that influence behavior such as knowledge, attitudes, beliefs, and personality traits. |
| Interpersonal factors | Interpersonal processes, and primary groups including family, friends, and peers that provide social identity, support, and role definition. |
| Institutional factors | Rules, regulations, policies, and informal structures that may constrain or promote recommended behaviors. |
| Community factors | Social networks and norms or standards that exist formally or informally among individuals, groups, and organizations. |
| Public policy factors | Local, state, and federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control, and management. |

Source: Adapted from National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion* (2003).

**Photo removed
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American writer, Mark Twain, once quipped, “Quitting smoking is easy. I’ve done it 1000 times.” Effective health interventions help smokers quit for good.

Stages of Change

The Stages of Change Model²¹ evolved from work with smoking cessation and the treatment of drug and alcohol addiction in the United States, but the model has been applied to a variety of other health behaviors. The basic premise is that behavior change is a process and not an event, and that individuals are found at varying levels of motivation, or readiness, to change. People at different points in the process of change can benefit from different interventions, matched to their stage at that time.

Five distinct stages are identified in the Stages of Change Model: precontemplation, contemplation, decision/determination, action, and maintenance. Although these stages are listed sequentially, they do not necessarily unfold this way. It is important to note that this is a circular model, not a linear one. People do not have to go through every stage and they can enter and exit at any point, and people often do return to earlier stages.

Going back to its origins, the Stages of Change Model can help to explain why employees who smoke might not take part in free smoking-cessation clinics offered by employers. Using this model, health professionals can develop a smoking control program that reaches smokers at various stages of the process of change. Although the connection between smoking and ill health is well known in developed countries, it is less understood in those developing countries where U.S. tobacco companies have been active-

ly marketing cigarettes. Individuals in this first stage—unaware of the risk or its application to themselves—need information and ways to personalize risk. Others need help in moving their contemplation of change to intentions to stop smoking; those who have made the decision to stop will be best helped by developing a concrete, step-by-step set action plan that includes breaking habits such as smoking after a meal and going to smoky bars. Those who have made the change need positive feedback and social support. To maintain their nonsmoking behavior, individuals need intermittent reinforcement from professionals or nonsmoking friends and continued avoidance of factors associated with relapses. This is easier where laws prohibit smoking in work sites and other public spaces. A person who relapses returns to an earlier stage and will need appropriate assistance.

The Health Belief Model

Introduced in the 1950s by psychologists working in the U.S Public Health Service, the Health Belief Model is one of the most widely recognized conceptual frameworks of health behavior.²² These psychologists were interested in increasing the use of preventive and early-detection services such as immunizations and chest x-rays for tuberculosis screening. They theorized that people are afraid of getting serious illnesses, and that health-related behaviors reflect a person’s level of fear based on level of threat perceived, and a person’s expected fear-reduction potential of taking action. Included in the calculus is the perception of whether the benefits of the behavior change outweigh its practical and psychological obstacles. In short, individuals conduct an internal assessment of the net benefits of changing their behavior, and decide whether to act.

The Health Belief Model identifies four aspects of this assessment: perceived susceptibility to ill health (risk perception), perceived severity of ill health, perceived benefits of behavior change, and perceived barriers to taking action. The concept of self-efficacy was added later. The right combination of perceptions adds up to an individual’s readiness to act. Health promotion messages—through mass media, peer education, and other interventions—act as cues to action, translating that readiness into overt behavior. These cues are often necessary to overcome habitual unhealthy behaviors such as not wearing seat belts, eating primarily high-fat foods, or

smoking. The Health Belief Model can also help identify leverage points for change. A smoker who may not think he is capable of quitting on his own can be given specific information on proven ways to quit and encouraged to enter a supportive smoking-cessation program.

Theories of Interpersonal Health Behavior

Interpersonal environments matter. Other people's behaviors, ideas, advice, assistance or lack of it, and emotional support or sabotage play important roles in health-related behaviors. The circle of influence includes those closest to an individual, such as family members, friends, and other peers, but the circle can expand to encompass co-workers, health professionals, and other people one identifies with or admires. The dynamic is reciprocal: People are both influenced by and influence others. One of the models that best encompasses this concept is Social Learning Theory.²³

Social Learning Theory

In order to understand and change unhealthy behaviors, Social Learning Theory analyzes psychosocial influences arising from the interaction of individual factors, the social environment, and experience. While the physical and social environment shapes behavior, people are not passive in the process, since they in turn can change their environments—a reciprocal dynamic. For example, people can be put at risk by the high prevalence of malaria where they live, but they can reduce their personal risk by using insecticide-treated bednets, or they can contribute to widespread risk reduction if they mobilize or join a community group pressuring the government to drain mosquito-breeding sites. Another premise is that people learn not only through their own experiences but also by observing the actions of others and the results of those actions. For example, boys who do not observe their fathers abuse their mothers are significantly less likely to be violent against their intimate partners as adult men.²⁴

The theory emphasizes behavioral capability: A person needs to know what to do and how to do it. Thus, clear instructions and sometimes training are needed, but still may not be enough. Social Learning Theory considers self-efficacy—the confidence in one's ability to make the desired change—of the greatest importance in bringing about healthy behaviors and recommends three strategies to increase it:

■ **Setting small, incremental goals.** When someone achieves a small goal, his or her sense of self-efficacy increases. Taking the next step—and another—makes the goal seem attainable.

■ **Behavioral contracting.** Agreeing to a formal process that specifies goals and rewards (“reinforcement”) means that individuals and groups will receive feedback, guidance, and praise for progress.

■ **Self-monitoring.** Feedback from self-monitoring or recordkeeping, such as keeping a journal, can reinforce determination to change and increase confidence in one's ability to achieve the desired action.

Finally, applying intermittent positive reinforcement over an extended period helps to maintain the desired behavior once it is adopted.

Community-Level and Related Models

Designing health promotion interventions to reach entire communities or specific groups—rather than influencing one individual at a time—is a basic goal of public health. The health of communities can be improved through policies such as universal health insurance, programs such as prenatal care visits to poor pregnant women, and a community's own actions such as organizing to demand better health services. Community action can also address social problems such as gender inequity and physical problems such as nearby malarial swamps. Community-level models analyze how social systems function and therefore how communities, organizations that serve them, and policymakers who have power over them can be mobilized for change. This section describes three conceptual frameworks for community-level health promotion: community mobilization, theories of organizational change, and Diffusion of Innovations Theory.

Community Mobilization

Community mobilization is “the process by which community groups are helped to identify common problems or goals, mobilize resources and develop and implement strategies for reaching their goals.”²⁵ Because communities are embedded in wider social and political contexts, the process is also called “social mobilization” to acknowledge that all levels of influence, including public policy, can be involved. Community mobilization

requires the active participation of community members to assess health risks and take action to reduce them. Empowerment of community members is a key component of this model, as part of the process of creating an environment for change. This means building on cultural strengths and tapping the often-unrecognized spirit and talents of the poor and other disenfranchised groups, an approach pioneered in Brazil by Paulo Freire in his influential book *Pedagogy of the Oppressed*,²⁶ and further elaborated in the United States by Saul Alinsky in *Rules for Radicals*.²⁷

It is important to note that community mobilization implies the involvement of many types of communities. The larger community contains social networks of the wealthy and other elites, the poor, the middle class, workers of various sorts, religious groups, mainstream and minority populations, and others. These subgroups have differing interests, power, and access to resources. One of the challenges in mobilizing communities is building group consensus around the most pressing problems common to all, such as poor sanitation, and then deciding what to do. Actions could include petitioning the government to dig latrines or harnessing local money and labor to dig the latrines as a community project. Whether involving local people or a national interest group, community or social mobilization creates the environment for healthy change (see Box 2).

Box 2

Mobilizing a National or International Community

Community mobilization can bypass geographic boundaries to represent persons who share specific health problems, such as persons with disabilities or persons living with AIDS. ACT UP (AIDS Coalition to Unleash Power) is a good example of a community of AIDS activists, including HIV-positive individuals, who coordinated grassroots advocacy efforts in many U.S. cities to end government and societal indifference to the AIDS epidemic. Founded in 1987, ACT UP uses large-scale protests and sit-ins to draw media attention to its cause. Use of mass media has become almost essential for community mobilization and ACT UP used it effectively to accelerate both governmental and other responses to preventing and mitigating HIV/AIDS in the United States and elsewhere.¹ Similarly, the high price of AIDS drugs for poor countries fell in the face of pressure put on pharmaceutical companies via worldwide media publicity.²

1. Craig A. Rimmerman, "Act Up," in *The Encyclopedia of AIDS: A Social, Political, Cultural, and Scientific Record of the HIV Epidemic*, ed. Raymond A. Smith (New York: Penguin Putnam, Inc., 1998).

2. Michael Waldholz, "Makers of AIDS Drugs Agree to Slash Prices in Third World," *The Wall Street Journal*, May 11, 2000.

Theories of Organizational Change

Experts define organizations as complex and layered social systems, composed of resources, members, roles, exchanges, and unique cultures.²⁸ Over the years there have been many efforts to improve the performance of one organizational category: health systems. In addition, other organizations influence health. Theories of organizational change help to identify ways to influence the adoption and institutionalization of health-promoting policies and programs within organizations.

Organizational Stage Theory

Organizational Stage Theory is based on the observation that organizations, similar to individuals, pass through a series of stages as they change. Thus, interventions can be focused on moving the organization from one stage to the next. Groups can be resistant to change and need encouragement, new skills, and confidence to make a successful transition. An organization begins the process by first defining a problem and identifying solutions; management or workers might be the first to identify a problem and propose solutions. The next step is to initiate an action to address the problem and allocate resources to implement the change. The implementation stage follows and initial changes occur, then more change until the problem is solved. The last step—institutionalization—is critically important. Without incorporating the changes as an ongoing part of the institution, problem identification and problem solving are expensive, ephemeral exercises.

Organizational Development Theory

Complementing stage theory, Organizational Development Theory is focused on how organizational structures and processes influence worker behavior and motivation. This theory encourages analysis of problems that interfere with an organization's optimal performance, such as problems between management and staff of a health clinic or the scheduling and coordination of work.²⁹ Consultants are often brought in to help employees collectively identify problems and to generate solutions and action plans. Ideally, the entire organization participates later in evaluating the success of the problem-solving measures and begins to institutionalize the change.

Table 5

Summary of Selected Behavior Change Theories

| Level | Theory | Focus | Key Concepts |
|---------------|---------------------------------|---|---|
| Individual | Stages of Change Model | Describes individuals' readiness to change or attempt to change toward healthy behaviors. | Precontemplation Contemplation Decision/determination Action Maintenance |
| | Health Belief Model | Assesses persons' perception of the threat of a health problem and appraisal of recommended behavior(s) for preventing or managing the problem. | Perceived susceptibility Perceived severity Perceived benefits of action Perceived barriers to action Cues to action Self-efficacy |
| Interpersonal | Social Learning Theory | Explains behavior via a three-way, dynamic reciprocal theory in which personal factors, environmental influences, and behavior continually interact. | Behavioral capability Reciprocal determinism Expectations Self-efficacy Observational learning Reinforcement |
| Community | Community Mobilization Theories | Emphasizes active participation and development of communities that can better evaluate and solve health and social problems. | Empowerment Community competence Participation and relevance Issue selection Critical consciousness |
| | Organizational Change Theories | Concerns processes and strategies for increasing the chances that healthy policies and programs will be adopted and maintained in formal organizations. | Problem definition (awareness stage) Initiation of action (adoption stage) Implementation of change Institutionalization of change |
| | Diffusion of Innovations Theory | Addresses how new ideas, products, and social practices spread within a society or from one society to another. | Relative advantage Compatibility Complexity Trialability Observability |

Source: Adapted from National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion* (2003).

Diffusion of Innovations Theory

Diffusion of Innovations Theory examines how new ideas, products and behaviors become norms.³⁰ This theory can be described as the “all of the above” theory because it deals with behavior change on all levels—individual, interpersonal, community, and organization—and integrates related theories, especially social networks theory.³¹ It focuses on *widespread* behavior change. Health interventions have yielded thousands of small-scale successes in behavior change, but how can this be done on a grand scale? How, for example, did vaccines and mass immunization of children, new at one time, become routine?

Diffusion of Innovations Theory provides a description of how such innovations spread naturally through social networks and an analysis of how to use diffusion networks to plan large-scale behavior change.³² Four main elements determine whether or not an innovation will succeed: the nature of the innovation itself, the kinds of communication channels available, the time taken for adoption, and the characteristics of the social system through which the innovation spreads.

First, the innovation must be seen as having a relative advantage over what it is replacing. The innovation must also be compatible with the values and life context of intended users. The degree of complexity matters too. If the innovation is difficult to adopt (for example, a hard-to-remember medication regime), there is little chance that it will be adopted. People and groups appreciate trying out a proposed innovation on a limited basis before committing to it; if such a trial is possible and successful, an innovation is more likely to be adopted. Once adopted, the innovation is likely to be adopted for the long-term and others will be influenced to adopt it if the individual or group can observe tangible benefits of the change.

Communications channels—the means by which messages get from one individual to another—are also important. Mass media channels are effective in disseminating information about innovations to many people, but peers are highly influential in a person’s decision to adopt an innovation. Thus, using social networks to reinforce mass media messages is more effective than mass media alone.³³ In addition, when respected leaders initiate or reiterate information provided through mass media channels, the chances increase that individuals and groups will decide to act.³⁴ A combination of popular leaders’ rec-

ommendations, peer group approval, and mass media messages—especially if enhanced by coordinated listening groups, call-in opportunities, and face-to-face approaches—is a powerful impetus to adopt an innovation.³⁵

Diffusion takes time. The process of going through the various stages of change—from initial awareness to intention to adoption to sustained change—may be gradual for both individuals and organizations. The funding for many promising programs ends or programs are prematurely evaluated and found wanting before desired change has had a chance to occur. In addition, an individual or organization may adopt the innovation early, later, or last. The diffusion of an innovation, as in other aspects of human life, can be captured within the normal or bell-shaped curve. An innovation is spread first by pioneering individuals who initiate or “import” it. Then comes a slightly larger group of early adopters, a category of local “missionaries” for speeding the diffusion process. Early adopters are key players in getting an innovation to the point of critical mass, the point at which enough individuals have adopted an innovation that the innovation’s further rate of adoption becomes self-sustaining.

The fourth element is the social system, which constitutes the boundary within which an innovation diffuses. A large social system, such as a city, has many subunits, such as health systems and facilities, religious and political groups, social clubs, unions, and informal associations of people. The structure and norms of each unit will affect diffusion of an innovation within the unit, and collectively whether an innovation will be adopted by a critical mass within the larger social system. Health promoters must understand to the degree possible the social systems into which a health innovation is to be introduced. Qualitative research—in-depth interviews, focus groups, and social network mapping—can help identify opinion leaders who can diffuse the desirable innovations.

Health Promotion: Tools of the Trade

Today most health planners use a combination of theory-based approaches and tools (described below) to promote positive behavior change. No single approach is likely to produce significant or sustainable change. For example, in the case of developing countries’ fertility transition to smaller families, mass media played a contributory role

but only as part of a complex social process rather than as an independent effect. Multiple channels over time provide reinforcing messages that produce interpersonal discussion among more and more people and eventually result in a change in social values and behavior.³⁶

Mass Media

Used traditionally and often effectively to convey information or promote products or action through ads and “spots,” health planners are increasingly inserting their messages into entertainment. This approach is called “entertainment-education.” While thoroughly modern, the technique is ancient. In 350 B.C., Aristotle understood why stories stir people to good behavior: Audiences watching a tragedy identify with the tragic hero’s plight, pitying him and fearing for themselves.³⁷

Entertainment-education has become increasingly popular and sophisticated; appropriately enough, there are many entertaining and educational case histories for students of health communication to analyze.³⁸ For example, Johns Hopkins University and partners in Tanzania designed a multimedia campaign that promoted family planning; the campaign included a 52-episode radio soap opera, complemented by radio spots, promotion of a new logo for improved family planning services, stories in newspapers and magazines, and audiocassettes promoting spousal communication about contraception. When compared with women not exposed to these messages, women who recalled the radio messages were almost twice as likely not only to discuss modern contraception with their husbands but also to be using modern methods. Women who recalled one media source were twice as likely to be using modern contraception; those who could recall six sources were 11 times more likely to be using modern methods.³⁹ Such programs can achieve high levels of synergy if they integrate on-air broadcasts with on-the-ground listening groups and local service delivery.⁴⁰

Social Marketing

Can one market healthy behaviors? Social marketers answer affirmatively; they note that advertising unhealthy products such as cigarettes has been immensely successful. Social marketing adapts commercial marketing strategies, including mass media, to sell subsidized health-related products—bednets, oral rehydration salts, condoms, birth control pills—and promote the

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for copyright reasons.

Mass media can spark interest in healthy behavior. These children helped create radio stories to promote handwashing.

behaviors related to them. The technique depends on careful consumer research to offer the “4 P’s”—an attractive product (or service), a price affordable to the intended beneficiaries, convenient places where it will be available, and persuasive promotion.⁴¹

To reduce risks of sexually transmitted infections (STIs) and unwanted pregnancies in Cameroon, a Population Services International social marketing program reached approximately 600,000 sexually active, urban youth ages 15 to 24 to motivate them and build their skills to use condoms or abstain from sex.⁴² The project used young Cameroonian peer educators, journalists, comic-strip artists, radio personalities, and scriptwriters to develop messages and activities that resonated with urban youth. Linked by the *100% Jeune* brand of condoms, all communication activities promoted images of youth who challenge social norms to protect their health. Particularly popular were a serial radio drama, “Solange: Let’s Talk about Sex,” and a call-in radio show. Face-to-face sessions with youth using role-plays and other interactive techniques also reached about 10,000 in-school and out-of-school youth each month. More than 40,000 condoms were sold to youth through *100% Jeune* outlets in 2002. After 18 months of program activities, youth of both sexes who were exposed to the program were significantly more likely to know how to use condoms correctly, less shy about buying them, and more likely to have used a condom the last time they had sex with a regular partner.

Community Mobilization

Mobilizing a community for healthy change involves tapping into social networks, helping stakeholders identify common health goals, and building on the strengths of cultural values rather than radically departing from them (see Box 3). Above all, mobilization requires enlisting community leaders to advance the cause. In a Senegal project, for example, grandmothers served as nutrition educators and strongly and positively influenced younger women's practices.⁴³ A similar approach was used in Kenya to eradicate the harmful practice of female circumcision in several communities.

Beginning in 1993, Maendeleo Ya Wanawake, Kenya's largest women's organization, and PATH, an international NGO, promoted "Alternative Rites of Passage."⁴⁴ This program built on existing rituals and celebrations marking the passage from girlhood to womanhood and omitted only genital cutting. Research showed that the communities were unaware of the health risks associated with circumcision of girls and in fact held strong beliefs that it enhanced health. Moreover, parents believed that uncircumcised girls would be rejected as wives. Parents also valued the

seclusion period where girls learned about wifely roles; although the girls suffered pain, they enjoyed the community recognition of their graduation to womanhood and the festivities that followed. Community education focused not only on health risks but also on findings that young men did not in fact object to marrying uncircumcised women. The education yielded many converts to the new way, including respected community members willing not only to be the first not to circumcise their daughters but to become leaders of the new movement (see Box 4). Once the community observed that influential people adopted the new practice and that the valued rituals and festivities remained, the practice of "circumcision by words" grew rapidly. Ten years later, almost none of the 5,000 graduates of the alternative rite has since been circumcised;⁴⁵ an independent evaluation concluded that the combination of intensive community sensitization and the option of an alternative rite played an important role in the attitudinal and behavioral changes that occurred.⁴⁶

Health Education

The dissemination of health information is nothing new—via the classroom, out-of-school settings, radio, television, newspapers, magazines, and the Internet. In addition to helping adults make healthy decisions, information and education are indispensable for socializing the young into health-promoting norms and behaviors—and to change unhealthy ones. Behavioral scientists assert that although one can organize information to make it more understandable, usable, and appealing, information is necessary but not sufficient to bring about behavior change in most people.⁴⁷ However, it can make a difference when embedded in well-designed, theory-based educational programs.⁴⁸ Sex education in the United States, where teen pregnancy and sexually transmitted infections are public health problems,⁴⁹ is a case in point.

A systematic review of sex education programs found several that had sustained impact on delaying the onset of sex, increasing contraceptive use, or preventing pregnancy among adolescents.⁵⁰ Sex education that discussed contraception did not hasten initiation of sex or increase the frequency of sex. In fact, some sex- and HIV-education programs delayed sexual initiation; for teens already sexually active, these programs reduced the teens' frequency of sex, increased their use of condoms, and reduced their number

Box 3

Culture as Strength

In *Health and Culture: Beyond the Western Paradigm*, Nigerian professor Collins Airhihenbuwa advises health educators not to assume that culture always represents an obstacle.¹ He divides cultural traditions into three categories: positive, neutral, and negative. Cultural traditions such as breastfeeding and transmission of important messages through song and dance are positive building blocks for health education. Beads tied around a child's wrist to ward off evil spirits offer no threat to health. Gender inequity, female circumcision, and withholding fluids during diarrheal episodes have negative consequences. He recommends building on the strengths of the culture to reinforce the positive and gently undermine the negative.

Ethnologist Dwight Conquergood illustrates this approach in his work in a Hmong refugee camp. After an outbreak of rabies in the camp, a mass dog-vaccination campaign failed to produce a single dog for inoculation, and Conquergood, who lived with the Hmong, was asked to design a better campaign. He organized a Rabies Parade led by Hmong who played important characters in their own folktales—the tiger danced and played a traditional instrument; the dab (a spirit who lives in the jungle and causes epidemics when disturbed) sang and banged a drum; while the chicken, known for its power of predictions, explained what must be done to avoid rabies. The next day, the health center was overwhelmed by Hmong men and women bringing their dogs for vaccination.²

1. Collins O. Airhihenbuwa, *Health and Culture: Beyond the Western Paradigm* (Thousand Oaks, CA: Sage Publications, Inc., 1995): 25-43.

2. Anne Fadiman, *The Spirit Catches You and You Fall Down* (New York: Farrar, Straus and Giroux, 1997): 35-37.

of sexual partners. Few abstinence-only programs were included in the study because they did not meet the criteria for rigorous evaluation. Of those abstinence-only programs studied, there was no evidence of effectiveness.

Successful programs used theory-based approaches known to be effective. Crucial features included:

- Focusing on specific risky sexual behaviors and delivering clear and consistently reinforcing messages about abstaining from sex or using condoms and other forms of contraception.
- Providing accurate information (see Box 5, page 14).
- Discussing and including activities to address social pressures that influence sexual behavior. Practice sessions to build communication, negotiation, and refusal skills prepared teens for real-life situations. These and other participatory teaching methods permitted students to personalize information.
- Selecting and training teachers or peer leaders who believed in the program.
- Gearing the curriculum to the age, sexual experience, and culture of the students.

One in-depth program that combined sex education, comprehensive health care, and tutoring had a positive impact on sexual behavior, contraception, and births among girls for as long as three years. Sex education is not a quick fix; short-term curricula did not have a measurable impact on the behavior of teens.

Improving Client–Provider Interactions in Health Facilities

Evidence suggests that clients and potential clients face many barriers in accessing health services.⁵¹ But if behavior-change interventions do succeed in reducing those barriers and motivating people to seek care at health facilities, will they encounter rudeness or courtesy? The quality of client-provider interactions, both verbal and nonverbal, is a pivotal part of the health communication continuum, and can influence whether clients follow counselors' advice, adhere to treatment, or return for follow-up visits.⁵²

A review of research on client-provider interactions in family planning services finds that

client satisfaction is associated with more effective use of contraception, higher rates of continuation, and positive word-of-mouth reports.⁵³ Conversely, client dissatisfaction is associated with method failure, discontinuation, and negative publicity within social networks.⁵⁴ Research in Egypt found that adding about one minute extra to solicit and respond to clients' needs resulted in a threefold higher level of both client satisfaction and contraceptive continuation, compared with physician-dominated consultations.⁵⁵ Whether seen at clinics or visited at home, people want the same things. A survey in Bangladesh found that clients value field workers who not only provide information but also are sympathetic to their needs, appreciative of the need for privacy, responsive to questions, and helpful with problems. Respondents served by field workers who were categorized as providing high or very high quality of care were more than 60 percent more likely to subsequently adopt a method.⁵⁶ A recent publication, *Improving Client-Provider Interaction*, outlines research-based ways to make the experience better for both sides.⁵⁷ For example, providers in Indonesia who attended a training course on client-centered counseling and

Box 4

Deviants and Peers

People who differ in desired ways from the norm of their society or personal social network are considered “positive deviants”—for example, young male gang members in Latin American slums who do not espouse typical “macho” behaviors of violence and disrespect toward women. Such exceptional people can make good peer educators if they are popular with their crowd and are willing to reveal their different behavior as part of an outreach campaign.

This is exactly what is happening in Project H, sponsored by the Rio de Janeiro NGO Promundo.¹ After intensive training, selected young men reach out to other young men in the large slum with messages about alternative ways to be masculine. They also sell inexpensive condoms marketed specifically to youth in the project area.

Initial results indicate high recognition of the Hora H condom, increased condom use with both stable and occasional partners, and positive gains on 18 of 24 items on the Gender-Equitable Men Scale.² Improved performance on this scale confirms attitudinal changes related to gender-based violence, fatherhood, and gender equity.

The positive deviance approach is increasingly popular. It is one of the most sustainable and culturally relevant ways to change behavior because it builds on existing strengths and resources within the community in which it is used. Selection, training, and ongoing support of positive deviants are key factors.³

1. Victoria White et al., *Men and Reproductive Health Programs: Influencing Gender Norms* (Washington, DC: The Synergy Project, 2004): 27–28.

2. Julie Pulerwitz, “Measuring Gender-Equitable Norms: Validation of the GEM Scale,” presentation at the Global Health Council Annual Conference, Washington, DC, May 30, 2003.

3. The Positive Deviance Initiative website, www.positivedeviance.org.

Information Is Powerful

Behavioral scientists agree that, for most people, information is necessary but not sufficient to bring about sustained behavior change. However, for health policymakers, information—if relevant to their interests, evidence-based, and vetted by other respected professionals—can spark change in policies and practices. The power of information is reinforced if it is used by coalitions of groups working to set health agendas.¹

According to a recent analysis of successful large-scale programs that significantly improved public health, information played a powerful role by:

- Raising awareness about a health problem, thereby focusing the attention of political and health leaders on it.
- Shaping the design of health programs by applying lessons resulting from pilot projects, surveys of health consumers, or operations research regarding the most effective (and cost-effective) approaches.
- Motivating people to stay the course through periodic feedback on a health program's progress. This feedback has prompted course corrections, renewed efforts, and even competition among countries to achieve goals.²

1. Lori Ashford, personal communication, Jan. 4, 2005.

2. Ruth Levine, "Information is Power," in *Millions Saved: Proven Successes in Global Health*, ed. Ruth Levine et al. (Washington, DC: Center for Global Development, 2004): 8-9.

who also attended weekly self-assessment and peer review meetings were able to sustain continuous quality improvement in performance, compared with those who received only training.⁵⁸ Clients too can be coached to ask providers questions, thus overcoming the social distance that inhibits most poor women.⁵⁹

Policy Communication

Policymakers influence the world, but who influences policymakers? Cynics might point to campaign contributions or outright bribes. But there are legitimate ways to reach the majority of honest policymakers. The Population Reference Bureau (PRB) has a long history of communicating with policymakers to inform decisions related to population and health. A successful project they supported in Ghana validates observations worldwide that "champions" can best advance a cause.⁶⁰

With PRB's support, a small group of professors at the University of Ghana and Ghanaian journalists woke up their nation's longstanding but slumbering population policy. Population planning is a sensitive issue; many Ghanaians distrusted the policy because of perceptions that external donors had imposed it on the country as a condition for aid. To revitalize interest in slow-

ing population growth and addressing reproductive health problems, highly respected Ghanaians would have to lead the efforts. Following a leadership conference on "Population and National Reconstruction," the Population Impact Project (PIP) of Ghana was born and immediately launched activities to reach policymakers at every level of Ghanaian society—representatives of government ministries; universities; research institutes; NGOs; trade unions; and various associations of teachers, doctors, nurses, and pharmacists. Media played a key role. The PIP team worked with radio, television, and print journalists to create continual coverage of the issues. The team organized public events, spoke in every possible classroom and forum, and disseminated a series of booklets to more than 800 influential individuals.

Two interventions were particularly powerful. One was a television broadcast that reached large numbers of opinion leaders. A booklet featuring interviews with government officials soon followed. In the introduction, the president of Ghana spoke out in favor of the population policy. PIP's activities had now achieved the "critical mass" of policymakers whose support it needed. The government, once a "target" of activities, became a partner and diffused population policy mandates throughout its ministries. A U.S. government evaluation concluded that PIP had made incredible gains, accomplishing what neighboring countries had been unable to achieve.⁶¹

PIP leaders continue to be champions of sound population and reproductive health policies in Ghana. In collaboration with others, PIP is working to reduce HIV/AIDS, unwanted pregnancies, and sexual coercion among youth.⁶²

Applying Behavior Change Theories and Tools

Being mindful of successful programs that have used behavior-change theories and tools will help health planners design the most effective interventions⁶³ to address disease control priorities in developing countries or to achieve the related Millennium Development Goals. New approaches must also be tried; a wide range of interventions—both large-scale and small-scale—provide promising models.

The case histories described below use a combination of behavior-change tools and reflect the ecological behavior-change theories described earlier. Although aiming primarily to change

behaviors of individuals and communities, these case histories also focus on the behavior of health system officials and policymakers, and address important contextual factors.

Case History: Reducing Malnutrition

The first Millennium Development Goal—“Eradicate extreme poverty and hunger”—combines hunger and poverty for a good reason: both are inextricably linked in a downward spiral. Poverty predisposes people to hunger and hunger to disease. Disease in turn exacerbates poverty by draining already strained household resources and reducing or destroying the ability of adults to work and children to attend school, further reducing actual or future earnings. A sound public health approach aims to interrupt this cycle of hunger, poverty, and disease.⁶⁴

One important way to address malnutrition is to reduce micronutrient deficiencies, the “hidden hunger” that affects the health of billions.⁶⁵ The Canada-based nonprofit Micronutrient Initiative (MI) and its many partners around the world have done just that. Working with WHO, UNICEF, the World Bank, national governments, the private sector, and communities, MI has fostered unprecedented cooperation for widespread fortification of common foods with needed micronutrients or their distribution as food supplements. Since 1990, this remarkable partnership has brought worldwide attention to the consequences of micronutrient malnutrition and demonstrated what can be done about it. MI has worked with the Expanded Program of Immunization in countries around the world to distribute vitamin A and other micronutrient supplements during National Immunization Days, and the partnership has convinced and helped salt producers and millers of corn and wheat to fortify their products. These efforts have resulted in strong progress toward controlling widespread micronutrient malnutrition:

■ As the result of a long-term MI campaign to iodize all of the world’s edible salt, and with the cooperation of the salt industry, more than 70 percent of the world’s population has access to iodized salt—one of the most impressive public health success stories of the latter half of the 20th century.

■ In the year 2000 alone, MI met 75 percent of the world’s need for vitamin A supplements. In a

three-year period, vitamin A supplements helped save the lives of more than 1 million children.

■ Addressing iron deficiency is more difficult, but there are signs of progress. In Bangladesh, for example, MI and partners support government measures to protect young women from iron deficiency. Before marriage and pregnancy, adolescent girls are given iron supplements, counseling, and nutrition education to help prevent iron deficiency and anemia during pregnancy. In India, three of every four pregnant women now take at least some iron/folate tablets. In Darjeeling, a subdistrict of West Bengal, fortified flour is distributed to low-income groups through the public distribution system. Social marketing and health communications strategies have generated consumer awareness and demand for fortified flour. Mills in Iran commenced fortifying flour in 2001.

■ Given the number of people who can be reached, large-scale programs are the most desirable, but are not feasible everywhere. A recent pilot study of fortification of maize with multiple micronutrients in Zambia showed that small-scale programs are also feasible and acceptable to local people and millers.

■ Multiple-fortified salt—combining iodine, vitamin A, and iron—is a strong possibility for the future that MI is supporting. If all three of these micronutrient deficiencies could be addressed through a single universal mechanism, the number of lives saved would undoubtedly soar. The technology for double fortification of salt is already developed and being scaled up; research is well underway on triple-fortified salt.⁶⁶

MI and its many partners developed an effective program model that reveals understanding of human behavior at every level: building political commitment, raising concern among community leaders and citizens, initiating and providing the tools for action, building consensus and networks, leveraging resources and transferring ownership, demonstrating success, and increasing the capacity of local entities to carry on the work (see Box 6, page 16). In turn, MI was itself an example of global social mobilization. Based on growing research, the scientific community first called the world’s attention to micronutrient malnutrition in the late 1970s and early 1980s. The Micronutrient Initiative was born out of the pledge of the 1990 World Summit for Children to

Industry Sets a Positive Example

In the mid-1990s, Vinod Kapoor, president of the Roller Flour Mills Federation of India, proposed that mills belonging to the federation consider fortifying their flour with iron. Though inexpensive, the cost of fortification was still too high for the small mills, most of which operate with extremely narrow profit margins. Also, based on experience, there is an inherent mistrust of anything being added to food in India. Kapoor was undeterred.

With the support of the Micronutrient Initiative (MI), he opted to introduce iron fortification at his own mill. Though it meant reassuring his customers and overcoming technical problems associated with the type of flour used in India, Kapoor never hesitated. Today, some five years later, the flour being produced at his family mill is still fortified. It reaches approximately 1 million people. Kapoor says he acted out of what he felt was “a social obligation.” However, he adds, it is imperative that MI and its partner agencies do more to convince the “top echelon” in India that all food fortification—not just the addition of iron to wheat flour—is good for the country.

Source: The Micronutrient Initiative, *A Decade of Progress, A Lifetime of Hope*, accessed online at www.micronutrient.org.

protect the world’s children against malnutrition. In 2002, the UN General Assembly Special Session on Children reaffirmed the pledges to end childhood malnutrition.⁶⁷ The fact that three of the top 10 risks for the burden of disease are micronutrient deficiencies shows that this good work must continue at an accelerated pace. The halving of hunger and poverty by 2015 as the first MDG bodes well for this possibility.

Case History: Combating HIV/AIDS

Uganda is one of the earliest AIDS successes stories, having experienced first a dramatic decline in HIV incidence (new infections) and then prevalence (total infections), beginning in the early 1990s. The drop in HIV rates among pregnant women—a proxy for the general population—has been corroborated by data from the U.S. Census Bureau; the Joint United Nations Programme on HIV/AIDS (UNAIDS) and its predecessor, the WHO Global Programme on AIDS; and other research. National HIV adult prevalence in Uganda peaked at about 15 percent in 1991, fell to 5 percent by the late 1990s, and stood at just above 4 percent in 2003.⁶⁸

What happened in Uganda? Although deaths from AIDS must be factored in, Uganda’s falling HIV prevalence is most likely attributable to the nationwide diffusion of an innovation: sexual behavior change.⁶⁹ The acronym ABC stands for those primary changes in behavior the population

was urged to adopt: Abstinence, or delay of sexual debut; Being faithful, or reducing one’s number of partners; or using Condoms. While the relationship between the large variety of interventions to fight AIDS and the decline in HIV rates in Uganda is not completely understood, a 2002 analysis identifies these key elements.⁷⁰

■ **High-level political support to address HIV led to a multisectoral response.** In 1986, after 15 years of civil strife, popular Ugandan President Yoweri Museveni began addressing the population almost nonstop via the media and in face-to-face gatherings about a new enemy—the growing AIDS epidemic. Asked later about his leadership, he replied: “When a lion comes to the village, shout!”⁷¹ He emphasized that fighting AIDS was a patriotic duty and that openness, communication, and strong leadership were needed at every level of society. By 2001, approximately 700 government agencies and NGOs were working on HIV/AIDS issues across all districts in Uganda.

■ **Decentralized behavior-change campaigns reached general populations and key at-risk groups.** Uganda launched an aggressive public campaign against HIV that included print materials, radio, and billboards, but mostly relied on grass-roots community mobilization. Its STD/AIDS Control Programme trained thousands of community-based AIDS counselors, health educators, peer educators, and other types of specialists. Led by their leaders’ examples, and because of decentralized allocation of resources, the general population in both urban and rural areas eagerly joined the fight against AIDS. HIV touched every community visibly,⁷² prompting effective mobilization.

■ **Interventions addressed women and youth, stigma and discrimination.** From the highest governmental to the grassroots levels, behavior-change efforts emphasized empowerment of women and girls. Without this supportive environment, it is unlikely that women could adopt ABC behaviors.⁷³ Teachers and other change agents reached youth both in and out of school. Messages from leaders to fight stigma and discrimination against persons living with HIV/AIDS had an impact. Although it still exists, stigma has been reduced to a level that creates a safer climate for seeking counseling and testing and for disclosing HIV status.

■ **Religious leaders and faith-based organizations were mobilized to lead AIDS education and care activities.** Mainstream faith-based organizations—Catholic, other Christian, Islamic, and traditional—wield enormous influence in Uganda and used this influence to fight AIDS and encourage acceptance of those infected. Mission hospitals were among the first to develop AIDS care and support programs in Uganda. One of hundreds of faith-based initiatives, the AIDS education project implemented in rural Muslim communities by the Islamic Medical Association of Uganda was selected as a “Best Practices Case Study” by UNAIDS.⁷⁴

■ **Uganda initiated Africa’s first confidential voluntary counseling and testing (VCT) services.** In 1990, the first center for anonymous VCT opened in Kampala; within two years the services spread to centers in four major urban areas as the stigma-reduced environment encouraged large numbers of people to find out their HIV status. Rapid HIV tests gave same-day results and “Post-Test Clubs” provided long-term support for behavior change to those tested, regardless of status.

■ **Social marketing of condoms played an important but not a major role.** In the beginning, Uganda’s president and some religious leaders resisted condom promotion but, by the mid-1990s, resistance had generally faded. By that time, nearly all the decline in HIV incidence had already occurred. In more recent years, increased condom use, particularly among high-risk groups, probably has contributed to the continuing declines.

■ **Control and prevention programs for STIs received increased emphasis.** Since 1994, after declines in HIV prevalence began to be documented, two donor-funded projects helped to improve STI diagnosis and treatment. By the end of the 1990s, drug supplies were adequate and distribution to rural health facilities had improved.

Primary behavior change—a decrease in multiple sexual partners—appears to be the single most important determinant of the reduction in HIV incidence in Uganda. For the most part, Ugandans who are sexually active now have no or significantly fewer nonregular sex partners.⁷⁵ Such behavioral changes appear related to com-

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A decrease in multiple sex partners appears to be the most important factor in reducing HIV incidence in Uganda. These young Ugandans attend a health education seminar at a youth center.

munication of AIDS prevention information through social networks arising from nationwide grassroots mobilization. Acquiring information from trusted role models and peers is likely to have personalized risk more effectively, resulting in greater behavior change and ultimately fewer HIV infections.⁷⁶ Efforts to bring about this unprecedented decline in HIV rates were remarkably cost-effective—about \$1.80 per adult per year over the 10-year period.⁷⁷

More recently, in the Rakai district of Uganda, there has been a rise in casual sexual relationships. Although there has been an accompanying rise in reported condom use,⁷⁸ this increase in sexual networking is worrisome to some analysts.⁷⁹

Case History: Reducing the Toll of Malaria

According to WHO, malaria is the eighth-highest disease burden worldwide and the fifth-highest for the poorest developing countries. This mosquito-borne disease disproportionately afflicts and kills children under 5 and pregnant women. WHO’s Roll Back Malaria initiative has set targets for halving the total number of deaths from malaria and ensuring that at least 60 percent of those at risk benefit from, among other things, insecticide-treated mosquito nets by the year 2010.⁸⁰ Sleeping under insecticide-treated bednets (ITNs) can reduce mortality by up to 63 percent and morbidity by at least 40 percent.⁸¹ Because these strategies require behavior change at every level, WHO has developed a training module for health personnel managing

malaria programs, *Communication for Behavioural Impact to Roll Back Malaria*.⁸²

In one effort to help stimulate commercial investment in ITNs, the U.S. Agency for International Development (USAID) launched NetMark, an innovative consortium led by the Academy for Educational Development that has formed international partnerships with 13 major firms (representing more than 80 percent of the global capacity to produce and distribute the bednets) to develop ITN markets and expand the availability of affordable ITNs in Africa.⁸³ The program has helped eliminate taxes and tariffs on ITNs in Mali, Senegal, and Zambia. In 2002, the program launched ITN marketing in Ghana, Nigeria, Senegal, and Zambia, selling more than 600,000 ITNs and 500,000 insecticide re-treatments during its first five months of operation.⁸⁴

NetMark designs and implements consumer-focused marketing campaigns based on behavioral theory and research, using a full range of mass media and community-based communication tools. Commercial marketing reduces the burden on the public sector by creating demand for bednets and then supplying them to those who can afford to pay, thereby allowing the public sector to use its limited resources to focus on those who cannot afford to pay. At the same time, NetMark is working to ensure sustained equitable provision of ITNs for the poor and is supporting country efforts to access the resources of the Global Fund for AIDS, Tuberculosis and Malaria,⁸⁵ which aims to provide 40 million ITNs over a five-year period. NetMark also primes the market for commercial expansion, building the capacity and quality of local ITN production among African-based manufacturers. Given NetMark's successes in implementing its approach in several countries, this investment in a new and replicable model for a sustainable health intervention and partnership with the commercial sector bodes well for both health and economic advances in Africa.

Case History: Helping Children Survive

As mammals, human beings are “hardwired” to protect their young. Yet each year, an estimated 10.6 million children in low- and middle-income countries die before they reach their fifth birthday.⁸⁶ Seventy percent of these deaths are due to just five preventable and treatable conditions: pneumonia, diarrhea, malaria, measles, and malnutrition. Deaths often result from a combination of these conditions.⁸⁷

In reality, the glass is half-full as well as half-empty. When public health leaders have considered such sad statistics, they have marshaled expertise, resources, and political will to organize public health campaigns to increase child survival. These efforts have paid off. Rates of deaths to children under age 5 have dropped from 148 deaths per 1,000 children in 1955 to under 59 deaths per 1,000 children in 2000.⁸⁸ Since the 1950s, an increasingly effective public health “toolkit” has helped save children's lives. It includes vaccines to prevent major contagious diseases, antibiotics to treat infections, and oral rehydration salts to save children suffering from extreme diarrhea—plus exclusive breastfeeding, a free and effective “technology.” In addition, mass media has joined interpersonal approaches to reach millions with messages to use these life-saving tools.

Breastfeeding is Mother Nature's way to nourish and protect young infants. Any form of breastfeeding reduces by one-half a baby's chance of dying before age 1, compared with no breastfeeding. However, doing it right—initiating breastfeeding immediately after birth, breastfeeding exclusively for the first six months, and introducing nutritious complementary feeding after six months—is an even more powerful tool for infant health. This optimal form of breastfeeding could save an estimated 1.5 million infant lives each year that otherwise would be lost to diarrhea and acute respiratory infections.⁸⁹ The USAID-funded Linkages Project is using theory-driven behavior change strategies to work with policymakers, health workers, communities, and family members to create a supportive environment for optimal breastfeeding.⁹⁰

In each country, the Linkages Project first influences policies relevant to optimal breastfeeding by forming active partnerships with government health and nutrition leaders, NGOs, international agencies, and academic institutions. Policy analysis and stakeholder workshops have proved essential for building consensus and mobilizing resources for program interventions to support optimal breastfeeding. The Linkages Project identifies six elements common to its interventions in different countries:

■ **Formative research** that analyzes benefits and barriers to change within each relevant segment of the population and identifies the specific and desired actions that people will be able to adopt;

- **Targeted, concise, and pretested messages** to promote the “do-able” actions;
- **Counseling and communication skills** for health and community workers;
- **Consistent messages and materials** across program communication channels to address critical behaviors;
- **Saturation of specific audiences with messages** through appropriate media (electronic, print, interpersonal, event-based, and traditional approaches such as songs and puppet shows); and
- **Support of the mother and peer group interaction** such as mother-to-mother support groups, women’s clubs, or other existing groups at the local level.⁹¹

Results are impressive. The rates of timely initiation of breastfeeding almost doubled in Madagascar (from 34 percent to 60 percent) and Ghana (from 32 percent to 62 percent), and rose 25 percent in Bolivia. The rate of exclusive breastfeeding nearly doubled in Madagascar (from 46 percent to 83 percent), increased significantly in Ghana, and showed a slight rise in Bolivia. While the already high rates of timely complementary feeding did not increase in these countries, the proportion of mothers who gave better quality complementary foods to their infants went up.

Although breastfeeding helps to prevent diarrhea, oral rehydration therapy (ORT) is a life-saver for those children who do have acute diarrheal episodes and risk of dying of dehydration. A WHO report estimates that deaths attributable to diarrhea fell from 4.6 million in 1980 to 1.5 million in 1999—a decline of two-thirds—and the widespread adoption of ORT can claim much of this success. Use of ORT spread during the 1980s in several countries and eventually around the world. This diffusion occurred in spite of difficulties related to proper mixing and the limitations of oral rehydration salts (ORS) to treat only dehydration and not diarrhea itself.⁹² ORT now helps save more than 1 million children’s lives each year.⁹³

In Egypt, deaths due to diarrhea declined by 82 percent in the 1980s. The National Control of Diarrheal Diseases Program became fully operational in 1984; by the end of the decade, ORT



Breastfeeding is Mother Nature’s way to nourish and protect infants. Creating a supportive environment for breastfeeding may entail working with policymakers, employers, health workers, communities, and families.

was being used to treat between one-third and one-half of all diarrheal episodes. To shape its approach, the ORT campaign conducted research on consumer preferences and cultural practices. Intensive behavior-change strategies were used, including the training of health professionals, pharmacists, and journalists. Education on the importance of ORT reached the general public through interpersonal channels and mass media. Evaluators consider social marketing and the mass media campaign the most important elements of success. Unlike most developing countries, television reached almost all households in the mid-1980s and thus was the primary channel that spread core messages even to poor rural households. TV spots had wide appeal and were bolstered by a popular “motherly” soap opera star as spokesperson. Billboards on roads and posters and pamphlets in pharmacies and clinics complemented the continual airing of TV spots.⁹⁴

Community health workers provided practice sessions for mothers to mix ORS; the mothers learned quickly and most were able to mix the solution correctly. In addition, easy-to-use ORS became widely available. Mothers used ORS twice as often when diarrhea was perceived to be severe rather than mild, a specific message of the

communication campaign. The campaign also urged mothers to continue feeding their babies during diarrheal episodes, in contrast to the normative practice of withholding food; there were also positive changes in this regard. Hospital admissions for severely dehydrated children dropped and deaths of infants due to diarrhea fell more rapidly than those due to other causes. The WHO evaluation concluded that the behavioral changes on the part of mothers and the health system personnel in case management accounted for most of the reduction in mortality attributable to diarrhea.⁹⁵

Recent research shows that ORS itself can be improved: Reducing concentrations of salt and sugar in ORS and supplementing it with zinc reduces the duration and severity of diarrhea and is significantly more cost-effective than earlier formulations of ORS.⁹⁶ In addition, mothers who gave their children zinc syrup with ORS were 75 percent less likely to give them antibiotics, a common but unnecessary practice leading to antibiotic resistance.⁹⁷ New WHO/UNICEF guidelines recommend specific behaviors for mothers, health workers, and government policymakers to translate these findings into reality.⁹⁸

No discussion of strategies to improve children's health would be complete without the joint WHO and UNICEF initiative called Integrated Management of Childhood Illness (IMCI). Its goal is to save children's lives and foster their growth and development by changing behavior at several levels. IMCI combines several effective child survival programs so that not just one but several illnesses can be averted or managed effectively at the same time. Why is this initiative necessary? Every day, many of the millions of sick children taken to hospitals, health centers, pharmacists, doctors, and traditional healers are not properly assessed or treated. Parents frequently receive either poor or no advice from health personnel and may have dangerously delayed seeking care. In poor countries, drugs, supplies, and equipment are often scarce, and diagnostic tools such as radiology and laboratory tests are minimal or nonexistent. Health workers tend to rely on history and symptoms to determine a course of treatment that makes the best use of their available resources.⁹⁹

IMCI encourages the preventive and curative behaviors that together largely determine the health of a child. IMCI has three main components: improving case management skills of health care staff; improving overall health sys-

tems; and improving family and community health practices. While IMCI is now considered the standard in preventing and treating childhood illnesses, evaluations in Bangladesh, Brazil, Peru, Tanzania, and Uganda found that only one component was successful so far: IMCI training for health workers in first-level health facilities has led to rapid and sustained improvement in health workers' performance in managing children's illnesses. However, ministries of health and their partners in these sites have not been able to expand training beyond a few pilot districts. Evaluators conclude that scaling up IMCI will require a stronger commitment to improved management and supervision, greater funding, and reduced staff turnover. There is also a need for stepped-up outreach to communities to increase care-seeking behaviors.¹⁰⁰ It will be worth the effort: The synergies of this approach provide the best hope for improving child health on a grand scale.

Case History: Improving Maternal Health

Of the 529,000 maternal deaths that occur worldwide each year,¹⁰¹ 99 percent of them take place in poor countries. For every woman who dies, another 30 to 50 women suffer serious and long-term complications.¹⁰² Consequently, pregnancy-related complications are among the leading causes of death and disability for women in developing countries. Because many people also see maternal mortality as a human rights issue,¹⁰³ interventions to influence policymakers' decisions relevant to maternal health have often included appeals to conscience. The fact that reducing maternal mortality is one of the Millennium Development Goals is itself a testimony to policy communications skills within the Safe Motherhood Initiative, a global effort to reduce deaths and illness associated with pregnancy and childbirth.

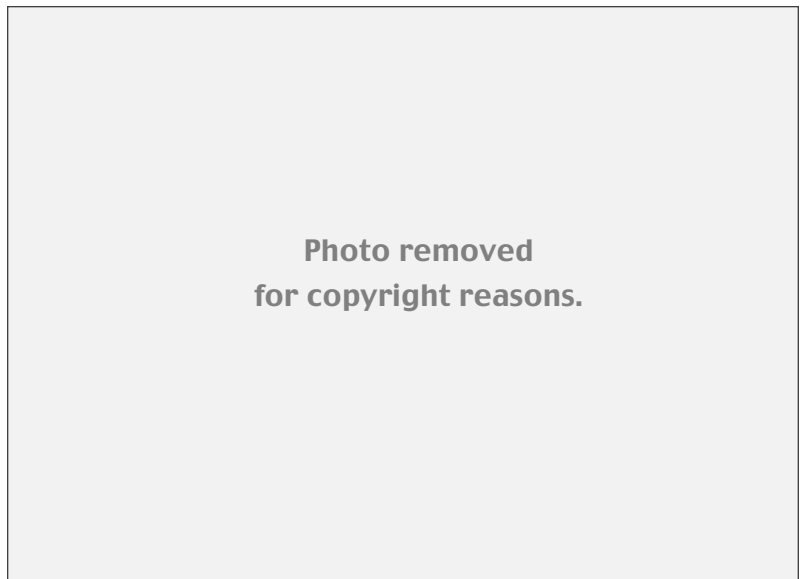
Sometimes a catchy phrase is a catalyst to awaken dormant concern. A 1985 journal article by two public health leaders made clear that maternal and child health services (MCH) were overwhelmingly oriented to child health, and neglected mothers' health. The article's subtitle—"Where is the 'M' in 'MCH'?"—became a rallying cry for advocacy.¹⁰⁴ Even with a few earlier, notable efforts to reduce deaths of women in childbirth, the Safe Motherhood movement did not gather steam until the mid-1980s,¹⁰⁵ and the widespread dissemination of "Where is the 'M' in

‘MCH’?” gave it a leap forward. Health policy-makers everywhere were challenged to answer the question and to provide funding. Since the obstetrical emergencies that kill women cannot be predicted, antenatal visits, vitamins, and even trained birth attendants would not be enough. Those serious about reducing maternal deaths would also have to provide emergency obstetric care (EmOC), including blood transfusions and Caesarean sections.

Sri Lanka and Malaysia were pioneers in reducing maternal mortality; well before the 1980s, committed policymakers and health planners began programs that reached key people and eventually changed health workers’ and community members’ behavior throughout those two countries. The programs provide well-documented lessons on how poor countries can gradually cut maternal mortality rates by one-half or more.¹⁰⁶ Their successes also energized the Safe Motherhood movement and provided a model to follow, thereby accelerating progress. The commitment of health policymakers reached by the Safe Motherhood Initiative has led to rapid programmatic success in reducing maternal mortality in Bolivia, Yunan province in China, Egypt, Honduras, Indonesia, Jamaica, and Zimbabwe.¹⁰⁷

In addition, successful models can be adapted and implemented on a much wider scale. The six-year, multicountry, multiagency Averting Maternal Death and Disability (AMDD) Program, supported by the Bill & Melinda Gates Foundation, provides technical assistance to improve women’s access to lifesaving EmOC in more than 50 countries where health policymakers and planners have responded to the promise offered by the project.¹⁰⁸ Over a three-year period, AMDD Program activities covered almost 180 million people and more than 270,000 women were treated for obstetrical complications—an average increase of 144 percent. Case fatalities decreased by more than 50 percent.¹⁰⁹ A major element of success has been the integration of life-saving technologies with the behavior change strategies needed to make them widely available—and used.

The White Ribbon Alliance for Safe Motherhood is another large-scale initiative, a grassroots movement now in 24 countries that initiates awareness-raising campaigns and builds practical, action-oriented alliances among communities, government health workers, and NGOs to prevent needless maternal and neonatal deaths. These activities have paid off. In Indonesia, for example, 70 percent of women



Improving access to emergency obstetric care is key to saving mother’s lives.

exposed to the campaign used a skilled provider for childbirth, compared with 44 percent who were not exposed; and 41 percent exposed to the campaign knew that bleeding during pregnancy was a danger sign, compared with 16 percent not exposed.¹¹⁰ Women’s health experts are pleased by such successes but are keenly aware that in addition to substantial funding, further progress in improving maternal health will require outspoken and determined champions from within the health system and among decisionmakers and politicians.¹¹¹

Case History: Making Family Planning a Norm

Being able to control one’s fertility through means other than unsafe abortions is a step forward on the long journey to women’s empowerment.¹¹² Because unplanned and poorly timed pregnancies pose serious health risks to women and infants,¹¹³ the adoption of modern family planning methods by millions of women in the developing world is an advance in public health and illustrates well the widespread diffusion of an innovation.¹¹⁴ As of 2004, an estimated 60 percent of married women of reproductive age in developing countries were using some means of family planning, compared with 15 percent in 1960; in 2004, 54 percent were using modern contraceptives.¹¹⁵ Over the same period, fertility in these countries also dropped from over six children per women to just over three; while overall development played a larger part, more

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for copyright reasons.

Increasingly, reproductive health programs include men. This father attends a family planning meeting in Ghana.

than 40 percent of this change is attributable to family planning program efforts.¹¹⁶

While the history of individual efforts to regulate fertility is ancient, the first large-scale organized family planning program began in the 1950s in India. Beginning in the 1960s, as rapid population growth increasingly was perceived as a major factor in environmental deterioration and poverty, research findings and high-level political advocacy groups convinced foreign assistance agencies, foundations, and eventually government programs around the world to promote and fund family planning services. In 1965, USAID received congressional authorization to include population and family planning programs in its aid to poor nations. Eventually, USAID became the single largest population donor among a large number of bilateral donors and private foundations. Although successful in the long run, family planning programs have always generated controversy.¹¹⁷

However, “organized family planning programs” were indeed organized and worked tirelessly to overcome resistance. Governments and NGOs designed and launched networks of free-standing family planning clinics, or, in some regions of the world such as sub-Saharan Africa, integrated family planning services into maternal and child health services. China and India undertook their own programs early on and vigorously implemented. Bilateral and multilateral donors,

foundations, and the International Planned Parenthood Federation provided significant funding and technical assistance to other countries, including Bangladesh, Thailand, Indonesia, Egypt, Morocco, Kenya, and Zimbabwe. These countries undertook a massive number of workshops to train doctors, nurses, and other health workers to offer modern methods of contraception and to counsel clients in their use. Counselors offered pamphlets on available methods of family planning—even if clients could not read. At the same time, significant resources were invested in developing new methods of contraception and eventually the variety of modern methods available in clinics grew to meet clients’ similarly varied needs and preferences.

Some organizations focused on promoting family planning. Community events, puppet shows, dancers, singers, and other face-to-face approaches publicized the existence of family planning services, reassured potential clients of their harmlessness, and encouraged local women—and, far more rarely, men—to utilize them. While newspapers, magazines, and television reached the elite opinion leaders with messages about the negative effects of population growth, other forms of mass media—radio, posters, comic books, and billboards—reached millions of poor and often illiterate or low-literate audiences. Soap operas with family planning themes were broadcast during prime time on radio; as radio coverage grew rapidly, these soap operas reached most of the population.¹¹⁸ In rural villages and poor city neighborhoods, community leaders supported group talks and films (using portable generators) on family planning. Promoters also used folk entertainment to transmit messages about the desirability of family planning while amusing the audience. Actors frequently portrayed poor mothers and fathers beleaguered by many children, while in the next scene other actors portrayed a stylish and well-off couple who chose to have only two children.¹¹⁹ While this approach may not have prompted immediate contraceptive adoption, ongoing messages of this type probably contributed to smaller family size norms.

Door-to-door promotion and distribution of nonclinical contraceptives was a response to cultural constraints in countries where women could not travel to clinics. This approach worked so well in increasing the number of women in rural Bangladesh who used these contraceptives

that “community-based distribution” earned fame, its own acronym—CBD—and was scaled up nationally in Bangladesh and replicated elsewhere. CBD programs, with local modifications, became a frequent adjunct to clinic-based services in many parts of the world. Also in Bangladesh, a program based on social networks used community inquiry centers called *Jiggashas* to help move family planning from an individual to a social norm; in these communities, family health workers became group discussion facilitators and not just transmitters of information and supplies.¹²⁰

Social marketing soon joined other approaches to publicize, promote, and distribute contraceptive pills and condoms through pharmacies and other retailers at low subsidized prices. Social marketing used mass media, particularly radio, posters, and billboards, to encourage those with sufficient means to purchase their contraceptives in retail outlets.¹²¹ Eventually, with perseverance in disseminating persuasive messages, expansion of available and affordable contraceptives and services, and the spread of successful models to other countries, family planning was transformed from a controversial innovation into a global norm (see Box 7).¹²²

Toward Effective Health Promotion Programs

Lessons learned from many years of designing and implementing behavior-change interventions can be applied and adapted effectively in health promotion programs:¹²³

- Identify the specific health problem to be addressed and the corresponding behaviors that, if changed, will ameliorate the problem. Identify the key actors at every relevant level, from the individual to the policymaker.
- Know and use sound behavioral theories in designing health promotion programs.
- Review and conduct thorough research about and with key actors; understand underlying behavioral reasons for the health problem, including biologic, environmental, cultural and other contextual factors, and likely motivations and constraints to change. Pay particular attention to barriers to change and vulnerabilities due to social and structural inequities.

Box 7

Changing the Family Planning Paradigm

The family planning story continues to evolve. Given historic concerns about rapid population growth, family planning was initially defined narrowly as contraception. As time went by, women’s health advocates increasingly documented and voiced new concerns about program abuses in some countries, including forced or coercive sterilization. These advocates also felt that programs largely ignored other needs such as ensuring safe pregnancies and deliveries; reducing risks of sexually transmitted infections, including HIV/AIDS; and addressing the underlying gender inequity that gives women little power over their sexual lives.¹

These advocacy efforts influenced the perspective and recommendations of the UN-sponsored International Conference on Population and Development (ICPD), held in Cairo in 1994.² ICPD rejected the population-control paradigm. The Programme of Action, agreed to by 179 nations, began a new trend of client-centered, rights-based, integrated services to meet a far broader range of women’s reproductive health needs. For example, a growing number of programs that formerly offered only contraception now address HIV/AIDS risks and intimate-partner violence, and work to include men as partners. The UN Population Fund emphasizes that the achievement of ICPD goals will also advance progress toward the Millennium Development Goals.³

1. Marge Berer, “Population and Family Planning Policies: Women-Centered Perspectives,” *Reproductive Health Matters* 1, no. 1 (1993): 4-12.
2. George F. Brown, “Foreword,” in *Responding to Cairo: Case Studies of Changing Practice in Reproductive Health and Family Planning*, ed. Nicole Haberland and Diana Measham (New York: Population Council, 2002): xi-xiv.
3. United Nations Population Fund, *10th Anniversary of the International Conference on Population and Development* (updated Nov. 8, 2004), accessed online at www.unfpa.org, on Dec. 2, 2004.

- Include the participation of relevant stakeholders as true partners in the design, implementation, and evaluation of the intervention, using participatory assessment and learning tools.
- Do not neglect the practical necessities: careful planning and budgeting to ensure the right timing, the appropriate duration of activities to show results and undertake evaluation, identification of the right partners, and selection of the best people to work on the project. Monitor the occurrence, quality, and coverage of activities and make needed corrections.
- Ask key stakeholders to identify role models and peers who exhibit “positive deviance”—healthy behaviors different from the social norm—that the program can enlist to support its objectives. Role models who appeal to program managers may not appeal to youth or other beneficiaries.
- Work to create an enabling environment through policy dialogue, advocacy, and capacity

building. Based on the likelihood that nonhealth sectors represent important contextual factors for health-related behavior, be prepared to involve and coordinate other sectoral efforts.

- Organize a multifaceted intervention that addresses both specific behaviors and contextual factors and reaches policymakers, gatekeepers, and direct beneficiaries. To reach key audiences, use communication channels identified through research such as mass media, face-to-face community activities, training of health workers, and policy-influencing conferences, with coordinated, mutually reinforcing messages and opportunities for community discussion.

- Work to ensure sustainability. Identify mechanisms and local assets for reinforcement of positive behavior on the individual level, institutionalization at the organizational level, and sound policies and resource mobilization at the policy level. Build on cultural values and traditions that foster mutual help and social cohesion.

- Build in evaluation from the beginning. Ideally, design an evaluation with experimental and control groups and gather baseline data; evaluate at the end of the project, six months later, one year later, and, if possible, up to five years later. Include qualitative and participatory methods to ensure stakeholder perspectives are represented. Disseminate findings widely in user-friendly reports and meetings.

- Form partnerships to scale up and/or adapt the most successful interventions for implementation in other settings.

Conclusion

Although idealistic public health officials in the late 1970s pledged to attain “health for all” by the dawn of the 21st century, recent health statistics reveal a different reality. Despite progress, good health still eludes billions of people, and serious health challenges remain everywhere. Analysis of risk factors for the major burdens of disease—deaths and disabilities caused by illness and injuries—reveals the central role of human behavior as both causes of and solutions to health problems.

Both the Millennium Development Goals and the identification of disease control priorities reflect a remarkable consensus of world leaders: to eradicate or dramatically reduce our most serious health and related development problems. Achievement will depend on behavior change at every level—individuals, families, communities, organizations, and policymaking bodies. Fortunately, evidence-based behavioral theories and successful behavior-change case histories point the way. Bolstered by political will and adequate resources, adaptations of successful programs and new approaches will go a long way toward ensuring health for all. We do not have to wait for the next millennium.

References

1. World Health Organization (WHO), "Declaration of Alma-Ata International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978," accessed online at www.who.int, on Oct. 1, 2004.
2. Peter Lamptey et al., "Facing the HIV/AIDS Pandemic," *Population Bulletin* 57, no. 3 (2002): 17.
3. International Rescue Committee, "IRC Study Reveals 31,000 Die Monthly in Congo Conflict and 3.8 Million Died in Past Six Years. When Will the World Pay Attention?" Dec. 9, 2004, accessed online at www.theirc.org, on Feb. 12, 2005.
4. ORC Macro, *DHS Dimensions* 6, no. 2 (2004), accessed online at www.measuredhs.com, on Feb. 6, 2005.
5. Ruth Levine et al., *Millions Saved: Proven Successes in Global Health* (Washington, DC: Center for Global Development, 2004): 5.
6. WHO, *World Health Report 2002: Reducing Risk, Promoting Healthy Life* (Geneva: WHO, 2002), accessed online at www.who.int, on Nov. 15, 2004.
7. Colin D. Mathers et al., "Global Burden of Disease in 2002: Data Sources, Methods and Results," *Global Programme on Evidence for Health Policy*, Discussion Paper No. 54 (Geneva: World Health Organization, December 2003).
8. Tracy Kidder, *Mountains Beyond Mountains* (New York: Random House, 2003): 37-44.
9. Laurie F. DeRose et al., "Does Female Disadvantage Mean Lower Access to Food?" *Population and Development Review* 26, no. 3 (2000): 517-47.
10. Leonard S. Rubenstein, "Racial Discrimination and Health Care," statement before the World Conference on Racism, Race Discrimination, Xenophobia and Related Intolerance, Durban, South Africa, Sept. 5, 2000, accessed online at www.phrusa.org, on Jan. 24, 2005.
11. WHO, *World Health Report 2002*.
12. Vinand Nantulya and Florence Muli-Musiime, "Kenya: Uncovering the Social Determinant of Road Traffic Accidents," in *Challenging Inequities in Health: From Ethics to Action*, ed. Timothy Evans et al. (New York: Oxford University Press, 2001): 211-25.
13. WHO, *World Health Report 2002*.
14. WHO, *World Health Report 2000—Health Systems: Improving Performance* (Geneva: WHO, 2000).
15. Dean T. Jamison et al., eds., *Disease Control Priorities in Developing Countries*, 2d ed. (Washington, DC: Disease Control Priorities Project, Fogarty International Center, National Institutes of Health, forthcoming), accessed online at www.fic.nih.gov, on Jan. 29, 2005.
16. United Nations (UN), "Millennium Development Goals," accessed online at www.un.org/millenniumgoals, on Dec. 2, 2004.
17. Adam Wagstaff and Mariam Claeson, *The Millennium Development Goals for Health: Rising to the Challenges* (Washington, DC: The World Bank, 2004): ix-xiv.
18. E.M. Forster, *Aspects of the Novel* (Orlando, FL: Harcourt, Inc., 1927).
19. This section draws on an excellent summary developed by the National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion* (2003), available online at <http://cancer.gov>.
20. Kenneth R. McLeroy et al., "An Ecological Perspective on Health Promotion Programs," *Health Education Quarterly* 15, no. 4 (1988): 351-77.
21. James O. Prochaska et al., "In Search of How People Change: Application to Addictive Behaviors," *American Psychologist* 47, no. 9 (1992): 1102-14.
22. Irwin M. Rosenstock et al., "Social Learning Theory and the Health Belief Model," *Health Education Quarterly* 15, no. 2 (1988): 175-85.
23. Albert Bandura, *Social Foundations of Thought and Action* (Englewood Cliffs, NJ: Prentice Hall, 1986).
24. Lori Heise et al., "Ending Violence Against Women," *Population Reports*, Series L, no. 11 (1999).
25. National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion*: 18.
26. Paulo Freire, *Pedagogy of the Oppressed* (New York: Continuum, 1970.)
27. Saul Alinsky, *Rules for Radicals: A Pragmatic Primer for Realistic Radicals* (New York: Vintage Books, 1971; revised edition, 1989).
28. National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion*: 22.
29. Robert E. Lande, "Performance Improvement," *Population Reports*, Series J, no. 52 (2002).
30. Everett M. Rogers, *Diffusion of Innovations*, 4th ed. (New York: The Free Press, 1995).
31. Thomas W. Valente, "Social Network Thresholds in the Diffusion of Innovation," *Social Networks* 18 (1996): 69-89.
32. Muhiuddin Haider et al., "Diffusion of Innovation and FOMENT: A Synergistic Theoretical Framework in Health Communication," in *Global Public Health Communication: Challenges, Perspectives, and Strategies*, ed. Muhiuddin Haider (Sudbury, MA: Jones and Bartlett Publishers, 2005): 1-24.
33. Naomi Rutenberg and Susan Cotts Watkins, "The Buzz Outside the Clinics: Conversations and Contraception in Nyanza Province, Kenya," *Studies in Family Planning* 28, no. 4 (1997): 290-307.
34. Rogers, *Diffusion of Innovations*: 23-30.
35. Asha Mohamud, personal communication, March 9, 2005.
36. Robert Hornik and Emile McAnany, "Mass Media and Fertility Change," in *Diffusion Processes and Fertility Transition: Selected Perspectives*, ed. John Casterline (Washington, DC: National Academies Press, 2001): 208-39.
37. Elaine Murphy, book review of Arvind Singhal et al., eds., *Entertainment-Education and Social Change: History, Research and Practice*, in *Journal of Health Communications: International Perspectives* 10, no. 5 (forthcoming).
38. Arvind Singhal et al., eds., *Entertainment-Education and Social Change: History, Research and Practice* (Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, 2004).

39. Miriam Jato et al., "The Impact of Multimedia Family Planning Promotion on the Contraceptive Behavior of Women in Tanzania," *International Family Planning Perspectives* 25, no. 2 (1999): 60-67.
40. Arvind Singhal et al., "Air Cover and Ground Mobilization: Integrating Broadcasts With Community Listening and Service Delivery in India," in *Entertainment-Education and Social Change: History, Research and Practice*, ed. Arvind Singhal et al. (Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, 2004): 351-75.
41. William A. Smith, "Social Marketing and Social Change in Public Health Communication," in *Global Public Health Communication: Challenges, Perspectives, and Strategies*, ed. Muhiuddin Haider (Sudbury, MA: Jones and Bartlett Publishers, 2005).
42. Josselyn Neukom and Lori Ashford, *Changing Youth Behavior Through Social Marketing: Program Experiences and Research Findings from Cameroon, Madagascar, and Rwanda* (Washington, DC: Population Reference Bureau, 2003).
43. Judi Aubel et al., "Strengthening Grandmother Networks to Improve Community Nutrition: Experiences from Senegal," *Gender and Development* 9, no. 2 (2001): 62-73.
44. Asha Mohamud et al., "Girls at Risk: Community Approaches to End Female Genital Mutilation and Treating Women Injured by the Practice," in *Reproductive Health and Rights: Reaching the Hardly Reached*, ed. Elaine Murphy (Washington, DC: PATH, 2002).
45. PATH and Maendeleo Ya Wanawake, *Evaluating Efforts to Eliminate the Practice of Female Genital Mutilation: Raising Awareness and Changing Social Norms in Kenya* (Washington, DC: PATH, 2002).
46. Jane N. Chege et al., *An Assessment of the Alternative Rites Approach for Encouraging Abandonment of Female Genital Mutilation in Kenya* (New York: The Population Council, 2001).
47. National Cancer Institute, *Theory at a Glance: A Guide for Health Promotion*: 11.
48. Karen Glanz et al., "Linking Theory, Research and Practice," in *Health Behavior and Health Education: Theory, Research, and Practice*, 2d ed., ed. Karen Glanz et al. (San Francisco: Jossey-Bass, Inc., 1997): 19-35.
49. U.S. Centers for Disease Control and Prevention, *Healthy Youth!*, accessed online at www.cdc.gov, on Dec. 4, 2004.
50. Douglas Kirby, *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy* (Washington, DC: National Campaign to Prevent Teen Pregnancy, 2001).
51. Tim Ensor and Stephanie Cooper, "Overcoming Barriers to Health Service Access: Influencing the Demand Side," in *Health Policy and Planning* 19, no. 2 (2004): 69-79.
52. Debra L. Roter and Judith A. Hall, "Patient Provider Communication," in *Health Behavior and Health Education: Theory, Research, and Practice*, 2d ed., ed. Karen Glanz et al. (San Francisco: Jossey-Bass, Inc., 1997): 206-26.
53. Elaine M. Murphy and Kristina Gryboski, "The Importance of Client-Provider Interactions: Evidence from Family Planning Programs," in *Global Public Health Communication: Challenges, Perspectives, and Strategies*, ed. Muhiuddin Haider (Sudbury, MA: Jones and Bartlett Publishers, 2005): 199-216.
54. John Bongaarts and Susan C. Watkins, "Social Interactions and Contemporary Fertility Transitions," in *Population and Development Review* 22, no. 4 (1996): 639-82.
55. Nahla Abdel-Tawab and Deborah Roter, "Provider-Client Relations in Family Planning Clinics in Egypt," *Population and Development Review* 22, no. 4 (1996): 639-82.
56. Michael A. Koenig, *The Impact of Quality of Care on Contraceptive Use: Evidence from Longitudinal Data from Rural Bangladesh* (Baltimore: Johns Hopkins University, 2003): 6.
57. Sharon Rudy et al., "Improving Client-provider Interaction," *Population Reports*, Series Q, no. 1 (2003).
58. Mi Kim Young et al., "Self-Assessment and Peer Review: Improving Indonesian Service Providers' Communication with Clients," *International Family Planning Perspectives* 26, no. 1 (2000): 4-12.
59. Mi Kim Young et al., "Increasing Patient Participation in Reproductive Health Consultations: an Evaluation of 'Smart Patient' Coaching in Indonesia," *Patient Education and Counseling* 50, no. 2 (2003): 113-22.
60. Ruth Levine et al., "Mobilizing Political Leadership and Champions Takes a Little Luck and a Lot of Preparation," in *Millions Saved: Proven Successes in Global Health*, ed. Ruth Levine et al. (Washington, DC: Center for Global Development, 2005): 7.
61. Elaine M. Murphy, *The Population Impact Project of Ghana: Reaching Out to Policymakers* (Washington, DC: Population Reference Bureau, 1991).
62. African Youth Alliance, accessed online at www.ayaonline.org, on Feb. 21, 2005.
63. Donald Nutbeam and Elizabeth Harris, *Theory in a Nutshell: A Guide to Health Promotion Theory* (New York: McGraw-Hill, 1999).
64. John Walley et al., *Public Health: An Action Guide to Improving Health in Developing Countries* (New York: Oxford University Press, 2001): 168.
65. World Bank, "Nutrition," *At-a-Glance* (Washington, DC: The World Bank, 2003): 1.
66. The Micronutrient Initiative, *A Decade of Progress, A Lifetime of Hope*, accessed online at www.micronutrient.org, on Nov. 28, 2004.
67. UN, *A World Fit for Children*, report of the 2002 UN General Assembly Special Session on Children, accessed online at www.unicef.org, on Dec. 2, 2004.
68. UNAIDS, *2004 Report on the Global AIDS Epidemic*, accessed online at www.unaids.org, on Dec. 2, 2004.
69. Edward C. Green, *Rethinking AIDS Prevention: Learning from Successes in Developing Countries* (Westport, CT: Praeger Publishers, 2003).
70. Janice A. Hogle, ed., *What Happened in Uganda?* (Washington, DC: U.S. Agency for International Development (USAID), 2002).
71. Arvind Singhal and Everett M. Rogers, *Combating AIDS: Communication Strategies in Action* (Thousand Oaks, CA: Sage Publications, 2002): 376.
72. Joan Haffey, personal communication, Feb. 21, 2005.
73. Elaine M. Murphy and Margaret Greene, "Defending the ABCs: A Feminist Perspective" (2005, submitted for publication).
74. UNAIDS, "The IMAU AIDS Education Project in Uganda," *UNAIDS Best Practices*, accessed online at www.unaids.org, on Nov. 13, 2004.
75. Rand Stoneburner and Daniel Low-Ber. "Population-Level HIV Declines and Behavioral Risk Avoidance in Uganda," *Science* 302, no. 30 (2004): 714-18.

76. Rand Stoneburner et al., "Enhancing HIV Prevention in Africa: Investigating the Role of Social Cohesion on Knowledge Diffusion and Behavior Change in Uganda," presentation at U.S. Agency for International Development, Washington, DC, 2000.
77. Hogle, *What Happened in Uganda?*
78. CNN.com, "Study: Condoms keep AIDS in check in Uganda," accessed online at www.cnn.com, on March 9, 2005.
79. James D. Shelton, "Partner Reduction Remains the Dominant Explanation," letter to the editor of *British Medical Journal* online, accessed online at <http://bmj.bmjournals.com>, on March 9, 2005.
80. WHO, "Roll Back Malaria," accessed online at <http://mosquito.who.int>, on Nov. 14, 2004.
81. USAID, "Our Work: Malaria," accessed online at www.usaid.gov, on Nov. 13, 2004.
82. WHO, *Communication for Behavioural Impact to Roll Back Malaria* (Geneva: WHO, 2002): i.
83. Academy for Educational Development (AED), "NetMark," accessed online at www.netmarkafrica.org, on Nov. 14, 2004.
84. USAID, "Our Work: Malaria."
85. The Global Fund for AIDS, Tuberculosis and Malaria, accessed online at www.theglobalfund.org, on Nov. 14, 2004.
86. UNICEF, *State of the World's Children 2005*, accessed online at www.unicef.org, on Jan. 23, 2005
87. World Bank, *Child Health at-a-Glance 1* (2002), accessed online at www.worldbank.org, on Nov. 21, 2004.
88. Levine et al., *Millions Saved: Proven Successes in Global Health: 1*.
89. UNICEF, *Facts for Life*, 3d ed. (New York: UNICEF, 2002), as cited in *Experience Linkages* (Washington, DC: AED, 2003).
90. AED, "Linkages Project," accessed online at www.linkagesproject.org, on Nov. 22, 2004.
91. AED, *Experience Linkages*.
92. Cesar G. Victora et al., "Reducing Deaths from Diarrhoea through Oral Rehydration Therapy," *Bulletin of the World Health Organization* 78, no. 10 (2000): 1246-55.
93. Rehydration Project, accessed online at <http://rehydrate.org>, on Feb. 21, 2005.
94. Ruth Levine et al., "Preventing Diarrheal Deaths in Egypt," in *Millions Saved: Proven Successes in Global Health*, ed. Ruth Levine et al. (Washington, DC: Center for Global Development, 2004).
95. Victora et al., "Reducing Deaths from Diarrhoea through Oral Rehydration Therapy."
96. Bjarne Robberstad et al., "Cost-Effectiveness of Zinc as Adjunct Therapy for Acute Childhood Diarrhoea in Developing Countries," *Bulletin of the World Health Organization* 82, no. 7 (2004): 523-31.
97. Abdullah H. Baqui et al., "Zinc Therapy for Diarrhoea Increased the Use of Oral Rehydration Therapy and Reduced the Use of Antibiotics in Bangladeshi Children," *Journal of Health, Population and Nutrition* 22, no. 4 (2004): 440-42.
98. WHO and UNICEF, *WHO/UNICEF Joint Statement on Clinical Management of Acute Diarrhoea* (May 2004), accessed online at www.who.int, on March 4, 2005.
99. WHO Integrated Management of Childhood Illness website, accessed online at www.who.int, on March 4, 2005.
100. Jennifer Bryce et al., "The Multi-Country Evaluation of the Integrated Management of Childhood Illness Strategy: Lessons for the Evaluation of Public Health Interventions," *American Journal of Public Health* 94, no. 3 (2004): 406-15.
101. WHO, *Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF and UNFPA* (Geneva: WHO, 2004): 2.
102. Robert M. Hecht, "Foreword," in *Investing in Maternal Health: Learning from Malaysia and Sri Lanka*, ed. Alexander Preker (Washington, DC: The World Bank, 2003): xi-xiii.
103. Jerker Liljestrand and Kristina Gryboski, "Women Who Die Needlessly: Maternal Mortality as a Human Rights Issue," in *Reproductive Health and Rights: Reaching the Hardly Reached*, ed. Elaine M. Murphy (Washington, DC: PATH, 2002): 121-28.
104. Allen Rosenfield and Deborah Maine, "Maternal Mortality—A Neglected Tragedy: Where is the M in MCH?" *The Lancet* 2, (1985): 83-85.
105. Carla AbouZahr, "Safe Motherhood: a Brief History of the Global Movement 1947-2002," *British Medical Bulletin* 67 (2003): 13-25.
106. Indra Pathmanathan et al., *Investing in Maternal Health: Learning from Malaysia and Sri Lanka* (Washington, DC: The World Bank, 2003).
107. Marjorie A. Koblinsky and Oona Campbell, "Factors Affecting the Reduction of Maternal Mortality," in *Reducing Maternal Mortality: Learning from Bolivia, China, Egypt, Honduras, Indonesia, Jamaica, and Zimbabwe*, ed. Marjorie A. Koblinsky (Washington, DC: The World Bank, 2003): 5-37.
108. Averting Maternal Death and Disability Network, accessed at <http://cpmnet.columbia.edu>, on Nov. 15, 2004.
109. Therese McGinn, "Toward MDG 6: Reducing Maternal Mortality Globally," abstract submitted in October 2004 to the Global Health Council for presentation at the Global Health Council conference, May 31-June 3, 2005.
110. Kristina Gryboski, "Case Study: Indonesia's White Ribbon Alliance: Expanding Civil Society and Government Partnerships at Multiple Levels to Advocate for Maternal and Neonatal Health," report of Maternal and Neonatal Health Project (Baltimore: Johns Hopkins University, 2004).
111. AbouZahr, "Safe Motherhood: a Brief History of the Global Movement 1947-2002."
112. Family Health International, *Women's Voices, Women's Lives: The Impact of Family Planning* (Arlington, VA: Family Health International, 2000).
113. Elaine M. Murphy, "Being Born Female is Dangerous to Your Health," *American Psychologist* 58, no. 3 (2003): 205-10; and Barbara Shane, *Family Planning Saves Lives*, 3d ed. (Washington, DC: Population Reference Bureau, 1997).
114. Elaine M. Murphy, "Diffusion of Innovations: Family Planning in Developing Countries," *Journal of Health Communication* 9, Supplement 1 (2004): 123-29.
115. Carl Haub, *World Population Data Sheet 2004* (Washington DC: Population Reference Bureau, 2004).
116. John Bongaarts, "The Role of Family Planning Programs in Fertility Decline," *Population Briefs* 2, no. 3 (1996).
117. Judith R. Seltzer, *The Origins and Evolution of Family Planning Programs in Developing Countries* (Santa Monica, CA: RAND, 2002): 1-44.

118. Everett M. Rogers et al., "A Radio Soap Opera's Effects on Family Planning Behavior in Tanzania," *Studies in Family Planning* 30, no. 3 (1999): 193-211.
119. Phyllis T. Piotrow and Esta de Fossrd, "Entertainment-Education as a Public Health Intervention," in *Entertainment-Education and Social Change*, ed. Arvind Singhal et al. (Mahwah, NJ: Lawrence Erlbaum Associates Publishers, 2004): 39-60.
120. D. Lawrence Kincaid, "From Innovation to Social Norm: Bounded Normative Influence," *Journal of Health Communication: International Perspectives* 9, Supplement 1 (2004): 37-57.
121. Seltzer, *The Origins and Evolution of Family Planning Programs in Developing Countries*: 33-34.
122. John Cleland, "Potatoes and Pills: An Overview of Innovation-Diffusion Contributions to Explanations of Fertility Decline," in *Diffusion Processes and Fertility Transition*, ed. John B. Casterline (Washington, DC: National Academies Press, 2001): 39-65.
123. See for example, Andrea C. Gielen and Eileen M. McDonald, "The Precede-Proceed Planning Model," in *Health Behavior and Health Education: Theory, Research, and Practice*, 2d ed., ed. Karen Glanz et al. (San Francisco: Jossey-Bass, Inc., 1997): 359-83.

Suggested Resources

Core Initiative. *Health Education in Primary Health Care Projects: A Critical Review*. Washington, DC: Child Survival Collaboration and Resources Group (CORE), 2004. Available online at www.coregroup.org.

Elder, John. *Behavior Change and Public Health in the Developing World*. Thousand Oaks, CA: Sage Publications, 2001.

Freire, Paulo. *Pedagogy of the Oppressed*. New York: Continuum, 1970.

Grabman, Lisa Howard, et al. *How to Mobilize Communities for Health and Social Change*. Baltimore: Johns Hopkins Bloomberg School of Public Health / Center for Communication Programs. Available online at www.hepartnership.org.

Green, Edward C. *Rethinking AIDS Prevention: Learning from Successes in Developing Countries*. Westport, CT: Praeger Publishers, 2003.

Haider, Muhiuddin, ed. *Global Public Health Communication: Challenges, Perspectives, and Strategies*. Sudbury, MA: Jones and Bartlett Publishers, 2005.

Levine, Ruth, et al. *Millions Saved: Proven Successes in Global Health*. Washington, DC: Center for Global Development, 2004.

National Cancer Institute. *Theory at a Glance: A Guide for Health Promotion* (updated Feb. 27, 2003). Available online at <http://cancer.gov>.

Pretty, Jules, et al. *Participatory Learning and Action: A Trainer's Guide*. London: International Institute for Environment and Development, 1995.

Rogers, Everett M. *Diffusion of Innovations*, 5th ed. New York: The Free Press, 2003.

Singhal, Arvind, et al. *Entertainment-Education and Social Change: History, Research, and Practice*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., 2004.

Walley, John, et al. *Public Health: An Action Guide to Improving Health in Developing Countries*. New York: Oxford University Press, 2001.

World Health Organization (WHO). *World Health Report 2002: Reducing Risk, Promoting Healthy Life*. Geneva: WHO, 2000. Available online at www.who.int.

Recommended Websites

Academy for Educational Development's CHANGE Project
www.change.org

The Cochrane Library Database of Abstracts of Reviews of Effectiveness
www.update-software.com/cochrane-frame

The Communication Initiative
www.comminit.com

Family Health International and Johns Hopkins University's Health Information and Publications Network (HIPnet)
www.hopkinsmedicine.org

The Futures Group International's "What Works" series
www.futuresgroup.com

Johns Hopkins University Center for Communication Programs
www.jhuccp.org

Population Reference Bureau
www.prb.org

Management Sciences for Health's Best Practices Consortium
www.msh.org

Program for Appropriate Technology in Health (PATH)
www.path.org

UNAIDS Best Practices Collection
www.unaids.org

USAID Knowledge for Development/Communities of Practice
<http://knowledge.usaid.gov/ss.html>

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Women of Our World 2005



by Lori Ashford and Donna Clifton

The fourth edition of PRB's datasheet, "Women of Our World 2005," provides updated estimates on women's status and progress in reproductive health, education, work, and public life. On the positive side, girls and women in developing countries have seen gains in a number of commonly measured indicators over the past decade, including school enrollment. But women everywhere still face social and economic disadvantages relative to men, and inequalities are most acute in the poorest countries. (2005)

Preventing Cervical Cancer Worldwide

Alliance for Cervical Cancer Prevention

With hundreds of thousands of the world's women dying of cervical cancer every year, the report, *Preventing Cervical Cancer Worldwide*, highlights innovative approaches to reducing the impact of this preventable disease particularly in developing countries, where 83 percent of the world's new cases and 85 percent of all cervical cancer deaths occur. This 24-page report reviews research conducted by the five-agency Alliance for Cervical Cancer Prevention on the safety, reliability, and cost-effectiveness of new prevention and treatment techniques. (2004)



The Unfinished Agenda: Meeting the Need for Family Planning in Less Developed Countries

by Dara Carr and Marya Khan

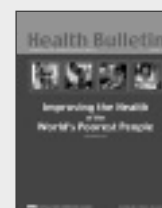


This six-page policy brief reviews the challenges ahead in meeting the need for family planning in less developed countries. Despite dramatic gains achieved by family planning programs over the past 50 years, a large and persistent divide still exists among countries in access to and use of contraception. Various factors intensify the challenges ahead in meeting demand, including population growth, a shortage of supplies, and inadequate funds. These challenges are not insurmountable. But rising demand makes it crucial to address current shortcomings in services. (2004)

Improving the Health of the World's Poorest People

by Dara Carr

For the more than 1 billion people living on less than \$1 a day—one of every six people worldwide—health services and modern medicines are out of reach. And many initiatives that tried to improve the health of people in extreme poverty have failed. This 34-page Health Bulletin report examines facets of the poor-rich health divide, factors that play a role in health disparities, and approaches for improving the health of the poor. (2004)



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