

# Egypt's *Mabrouk!* Initiative

## *A Communication Strategy for Maternal/Child Health and Family Planning Integration*

Ron Hess, Dominique Meekers,  
and J. Douglas Storey

Q: Are you using the *Mabrouk* book?

A: Using it? We're living by it!

(One of the original 2004 Minya newlywed wives, one year later)

### Introduction

One of the most successful domains of health communication globally over the past 30 years has been in the area of fertility management. Many low-income countries have initiated family planning programs since the 1970s that have resulted in smaller family sizes, longer intervals between births, and slower population growth rates. With fewer births and more time between them, maternal and child health have also improved, aided by improved access to affordable health services. However, in many low-income countries that saw initial gains, the pace of the fertility decline has slowed, leveling off above replacement level. At the same time, maternal and neonatal morbidity and mortality levels in many of those countries remain unacceptably high, underscoring the challenge of sustainable change in public health.

This chapter describes the *Communication for Healthy Living* (CHL) project in Egypt.<sup>1</sup> CHL was part of the larger Health Communication Partnership (HCP), which was the flagship global communication project supported by the United States Agency for International Development (USAID). The CHL project in Egypt was a national effort that used a strategic, life-stage approach to design an integrated maternal and child health (MCH) and family planning (FP) communication program, resulting in improved health outcomes among young couples. The project implemented a full-scale national

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and community-based communication campaign – supported by advocacy, capacity building, and coordination with service delivery – to address the health needs of family members in various life stages, with a special emphasis on newlywed and young couples. This emphasis was named the *Mabrouk!* Initiative using the Arabic word for “congratulations” to reflect the celebratory spirit of the key life events, marriage, childbirth, successful birth spacing, and child raising, while emphasizing the promise of a lifetime of family health. Given the complexity of the project, we will first describe its demographic context, as well as the conceptual and systematic approaches used in its design, implementation and evaluation, before turning to the specifics of the interventions and evidence of their impact.

## The Egyptian Context

Although Egypt has been described as a low health-care spender (WHO, Regional Office for the Eastern Mediterranean, 2006), it has worked closely with international agencies and donors over many years to curb its population growth rate and to improve the health of its population. The main international donor is the United States Agency for International Development (USAID), which has provided assistance to Egypt in the areas of population and health since 1977. By 2010, USAID had obligated an estimated \$1.5 billion (2010 Presentation by James Bever, USAID-Egypt Mission Director) to help achieve Egypt's strategic objectives in population and health. During the past three decades, Egypt has expanded the number of available health facilities, and most of the population now has access to affordable basic health services. The country has achieved substantial reductions in mortality rates, and has improved control of infectious diseases. It has also made major progress in reducing fertility and population growth rates (USAID, Office of Inspector General, 2006; WHO Regional Office for the Eastern Mediterranean, 2006).

Recognizing the strains that a burgeoning population creates on clean water, educational systems, and other resources, Egypt has long prioritized the management of population growth. It has had a family planning program since the 1960s. An extensive network of public, semi-public, and private outlets provide family planning services. In the public sector alone, over 4,470 public sector family planning clinics provide services at nominal fees (Adbel-Tawab and Roter, 2002; Ministry of Health and Population, Egypt, El-Zanaty and Associates, and ORC Macro, 2003, p. 94). Additionally, since the early 1980s the government of Egypt, in partnership with USAID, has consistently supported national-scale family planning information, education, and communication programs (Robinson and El-Zanaty, 2006) with the aim of achieving replacement level fertility by the year 2015 (USAID, Office of Inspector General, 2006).

Survey data show that the total fertility rate declined from 5.3 children per woman in 1980 to 3.5 in 2000 and to 3.0 in 2008, the most recent year for which national data are available (El-Zanaty and Way, 2009; Robinson and El-Zanaty, 2006; USAID, 2009; Vignoli, 2006). The same 2008 data show that 67 percent of currently married women were recently exposed to family planning messages (mostly from television) and that 60 percent are currently using a method of family planning. The 2008 data

also show that 82 percent of eligible women have used family planning at some point, and that 87 percent of demand for contraceptive services has been satisfied (El-Zanaty and Way, 2009).

Demand for any service such as family planning can be represented as a primary demand curve (Rothschild, 1999), and progress toward satisfaction of that demand can be conceptualized in stages, as illustrated by Rogers' (1983) S-shaped diffusion curve. According to Rogers' stages of adoption, Egypt's demand for contraception has reached an advanced stage. With 87 percent of demand satisfied, family planning has become a well-established norm. The remaining population of nonusers of contraception includes both the pool of potential new users and those who have discontinued family planning use but still wish to delay or limit childbearing. Potential new users include the large group entering their reproductive life stage as well as potential "late adopters" from among challenged, hard-to-reach populations – often from rural or poor urban communities. Discontinuers are distributed throughout the population.

As with any enterprise, Egypt's family planning program must attract new clients and retain old ones. Attracting new clients from among the very late adopters is especially challenging, but Egypt's family planning program must overcome this challenge to achieve its goals of reaching replacement-level fertility and sustaining FP adoption and use. Robinson and El-Zanaty (2006, p. 123) identify a threefold approach to closing the remaining demand gaps in this mature market: (1) encouraging young, low-parity couples to delay childbirth and increase birth-spacing (emerging prospects); (2) encouraging existing users who have achieved their desired family size to maintain contraceptive use and reduce discontinuation (retaining customers); and (3) encouraging adoption among rural or poor urban nonusers (challenged, or underserved groups).

The *Mabrouk!* Initiative seeks, in some measure, to address all three of these goals, but prioritizes a focus on young couples entering the childbearing stage – an audience segment that we refer to as the *young family cohort*.

## Conceptual Approach

The *Mabrouk!* Initiative was designed carefully and systematically according to the principles of the P-Process (Health Communication Partnership, 2003; Piotrow *et al.*, 1997), an iterative approach that progresses in stages from Situation and Audience Analysis to Strategic Design and Development to Implementation and Evaluation. The tools of analysis were drawn from the fields of public health as well as marketing communication.

### Role of theory

*Health competence.* It is increasingly recognized that to achieve enduring, sustained demand for good health, the population must be *health-competent*. The health competence approach derives from the call by WHO, as early as the 1950s, for a shift in thinking toward health as "a state of complete mental, physical and social well-being and not

merely the absence of disease” (WHO, 2006, p. 1). Building on the concepts of social capital and health literacy, Storey, Kaggwa, and Harbour (2008, p. 2) define health competence as “having the knowledge, attitudes, skills, and resources to act consistently and appropriately across multiple health behaviors.”

In their analysis of data from Egypt and South Africa, Storey, Kaggwa, and Harbour (2008) found that individuals with basic health knowledge about causes of disease and wellness, positive attitudes toward preventive health, and access to health information and social support were more likely than individuals without those assets to display not just single disease-specific behaviors but to perform better across a spectrum of family health actions (in the case of Egypt) or of HIV/AIDS prevention actions (in the case of South Africa). But it is not enough for health programs to create health-competent *individuals*; they need to help create health-competent *households* and *communities* within which individuals live. This, in turn, requires a fundamental shift toward the view that households, not health care systems, are the primary producers of health. Households become health-competent when they are enabled to mobilize the resources they need – including information, social support, and greater control – in order to make health decisions consistently and gain greater ownership over positive household health outcomes.

While building health-competent societies is a challenging task, especially in contexts with limited resources and relatively low levels of education, strategic health communication programs are ideally positioned to help accelerate the process. Strategic health communication programs, designed in accord with communication theory, are based on evidence, oriented toward results, and implemented, monitored, and evaluated using the best practices from communication, epidemiology, demography, and other subfields of public health.

*Communication theory.* Health-competence communication builds on elements of various social science theories commonly used to predict health behavior (Edberg, 2007; Glanz, Rimer, and Viswanath, 2008). It also draws on theories at levels of aggregation above the individual level, including newer versions of health literacy (e.g., Kickbusch and Nutbeam, 1998) and social capital (e.g., Kawachi, Kennedy, and Lochner, 1997) that describe elements of capacity to respond to health challenges and characteristics of social organizations that “combine to facilitate cooperation among people for their mutual benefit” (Putnam, 1993, p. 36).

Putnam (1993, 2001), for example, identifying these facilitating traits, focuses on trust and reciprocity among group members (cognitive dimensions), but also on patterns and levels of participation in groups (a structural dimension). Health competence also draws on the model of Participatory Communication for Development and Social Change (Kincaid and Figueroa, 2009), which is built around the process of community dialogue leading to collective action and draws from a broad literature on development communication, particularly the work of Latin American theorists (Beltrán, 1974; Díaz-Bordenave, 1994), as well as theories of group dynamics, conflict resolution, networks/convergence, leadership and equity (see, e.g., Chemers, 2000; Gumucio-Dagrón, 2001; Lord and Brown, 2004; Moser, 1993; Senge, 1994; Stogdill, 1974; Tirmizi, 2002; White, 1994).

While different theories emphasize different aspects of social interaction, there is broad consensus that behavior is influenced by a combination of factors, such as the

intent to perform the behavior, perceived and actual barriers and constraints, skills, attitudes, perceived social norms, self-efficacy and the influence of social networks (Salem *et al.*, 2008). Together, these conceptual elements helped inform analysis of the evidence base and the design of strategies, activities, and materials for the *Mabrouk!* Initiative from the beginning.

*The marketing perspective.* While public health tools and concepts help planners to analyze health issues at a population level, the marketing perspective emphasizes a view of the customer or client as an active partner in any health transaction, making decisions based on perceived value or benefit. Additionally, the marketing perspective focuses on return on investment, seeking to answer the question of where change can be achieved most cost-effectively, as well as on market readiness, to identify the margins of change where growth is most likely. The field of social marketing, which applies marketing principles to social goals is well elaborated elsewhere (Kotler, 1999; Kotler and Lee, 2008). Storey and colleagues (2008) describe the application of these principles to health behavior and health promotion.

## Analysis

### The audience

Data from the 2008 Egypt Demographic and Health Survey (EDHS) indicate that it is common for households to have members in several different life stages. Egyptian households are larger on average and somewhat more complex generationally than those in most Western countries. In rural Upper Egypt, 88 percent of households (n=4806) have a male head of household and an average of 5.8 residents (El-Zanaty and Way, 2009). Breaking down household members into five life stages,<sup>2</sup> we find that 91.6 percent of households include one or more ever-married older adults aged 30 or older; 39.9 percent include one or more married young adults aged 29 or younger; 53.1 percent include at least one never married person (most likely unmarried youth) over 15 years of age; 60.2 percent include one or more children aged 5–14; and 52.8 percent include one or more children below five years of age. Overall, 90 percent of the households in rural Upper Egypt have members in two or more different life stages. Over one-third of all households, 37 percent, have household members representing three different life stages; 25 percent have members presenting four different life stages; and 7 percent have members representing all five life stages.

Life-stage approaches to health communication are somewhat rare because funding streams tend to be vertical – aimed to achieve disease-specific objectives – rather than to cut across health areas. USAID, under its flagship global project – the Health Communication Partnership, of which CHL was a part – adopted an innovative cross-cutting communication design to see if such an approach could add value in terms of health outcomes across different health sectors as well as enhance the sustainability of health communication efforts. Another reason is the logistical challenges of an ambitious cross-cutting health program that not only addresses multiple health areas, but also simultaneously targets different life stages.

As a strategic entry point into the life stages of Egyptian households, the *Mabrouk!* Initiative selected the young family cohort (married couples under 30 years of age) as the primary audience segment, based on a variety of demographic and behavioral factors. Thirty-seven percent of married women fall into this category. Selection of this segment was guided by health need, as well as by considerations of market size, the long-term dividend on an investment in the health of young families, and readiness. The concept of “readiness” is vital to strategic communication for two main reasons: (1) because “change happens at the margins,” a phenomenon well known in political communication circles, and widely observed in both the physical and social sciences (Kincaid, 2004); and (2) because communication empowers people to act rather than impels them. Communication-enabled change is voluntary, not coercive; if people find value in the offering and are ready, willing, and able, they are more likely to act.

### The health issues

A complex and interrelated set of health issues confront new families. It has been widely recognized for some time that babies are more likely to survive if their mother gives birth less often and less frequently. Evidence is growing that the reverse may be true as well, that as more children in society survive, fertility rates go down (Udjo, 1997), underscoring how maternal and child health may be interconnected in ways we do not fully understand yet. Contraceptive use can reduce maternal and child morbidity and mortality and, conversely, successful outcomes in postpartum maternal and child health can influence family planning preferences and practices. The move toward lower fertility, or reduction in *quantity* of children may be driven in part by an increase in the *quality* of reproductive outcomes (increased child health and survival resulting in increased investment per child) (Becker, 1993; Robinson and El-Zanaty, 2006, p. 131). This complex interaction underlies, in our view, the integrated health competence approach adopted by the *Mabrouk!* Initiative.

Members of the young family cohort, if they have at least one child, in some ways represent more than one life stage. The couple itself faces the challenges of Young Marrieds around fertility planning, prenatal care, safe delivery, and postpartum care, while simultaneously facing the challenges of all adults, including smoking, nutrition, and other aspects of lifestyle health. Their children, of course, face the challenges of Early Childhood, particularly nutrition and immunization.

*Family planning.* Egypt's largest group of new FP users is young couples entering the childbearing stage. This demographic segment of young families is of vital importance to Egypt's future, due to its sheer magnitude and its great potential to affect Egypt's health status through the trends it sets in motion. More than 50 percent of Egypt's estimated 80 million people are under 25 years of age. It is at the stage of early adulthood and marriage when major reproductive health events begin, such as the onset of sexual activity and childbirth. Even in developed countries, the first pregnancy may be the very first time a young woman interacts with health services. Therefore, prenatal care provides an important opportunity to provide young adults with health education, including how to use contraceptives.

In Egypt, childbearing, as a rule, begins after marriage (Kashan, Baker, and Kenny, 2010; Population Council, 2010), and there are an estimated 1.2 million marriages per year (Minister of State for Family and Population, Mushira Khattab, personal communication, 2010). Nine out of ten married couples with no children say they want to have a child soon, so there is very little demand for delaying the first birth. However, six out of ten women with no children say they intend to use family planning *in the future* (El-Zanaty and Way, 2009), so the socially acceptable entry point for family planning is *after* the first birth, with 76 percent approving of the use of contraceptives at this stage. By contrast, only 1.2 percent consider it appropriate to use contraception before the first birth and less than half a percent of couples without children use contraception. However, after the first child is born, most Egyptian couples are ready, willing, and able to use contraception. This is the key point of market entry for family planning. Contraceptive use after the first birth, or at parity 1, has risen from 29 percent in 1995 to 35 percent in 2000, to 58 percent in 2008. El-Zanaty and Way (2009, p. 51) confirm that fertility has declined most rapidly among the 15–19 and 20–24 age groups. For example, between 1995 and 2008 (EDHS), the age-specific fertility rate for 15–24 year olds declined by 16 percent, but only by 12 percent among 25–34 year olds.

The second source of new contraceptive users comes from among the hard-to-reach populations that have lagged behind the national norm in contraceptive adoption, such as those in the economically disadvantaged or socially marginalized areas of urban slums or rural Upper Egypt. Though these areas still trail the national average on most indicators, in the last decade significant advances have helped to narrow the gap between the underserved areas, such as rural Upper Egypt, and the nation as a whole (El-Zanaty and Way, 2009). While the national contraceptive prevalence rate (the percentage of married women of reproductive age currently practicing family planning) has increased by 12.4 percent from 1995 to 2008, the rate in rural Upper Egypt has increased by 24.4 percent during the same period (El-Zanaty and Way, 2009).

*Maternal and child health.* In addition to advances in family planning, Egypt has achieved significant gains in maternal and child health (El-Ghazaly and Meekers, 2007; El-Zanaty and Way, 2009; Khalil and Roudi-Fahimi, 2004). The percentage of pregnancies for which regular antenatal care (four or more antenatal visits) was obtained increased from 28 percent in 1995 to 66 percent in 2008, and the percentage of medically assisted deliveries increased from 46 percent to 79 percent during the same period (El-Zanaty and Way, 2009). The coverage rates for child vaccinations are also very high (USAID, 2009). These changes have contributed to important declines in infant and child mortality. In 2008, the infant mortality rate was estimated at 24.5 deaths per 1,000 live births, and the under-five mortality rate at 28.3 per 1,000 live births (USAID, 2009). Although maternal mortality has decreased, it remains relatively high at 84 per 100,000 live births. The large majority of these maternal deaths are avoidable with sufficient prenatal care (Khalil and Roudi-Fahimi, 2004; USAID, 2009).

While recommended child vaccinations are nearly universal and full antenatal care coverage is increasing, not all aspects of family health receive the same degree of programmatic attention or are as widely addressed within households. Lifestyle diseases related to unhealthy diet, lack of exercise, and smoking make up an increasing proportion of the disease burden in Egypt (WHO Regional Office for the Eastern Mediterranean,

2006). Hence, there is an increasing need to integrate healthy lifestyle initiatives into larger efforts to improve family health and help move Egypt toward full health competence.

*Health competence.* Addressing the young family cohort for maternal and child health is vital to establishing positive health practices and health competence early, laying the foundation for a lifetime of family health. Hillary Clinton, in a 2010 United Nations Summit on the Millennium Development Goals (MDGs) endorsed a worldwide donor initiative aimed at improving MIYCN (Maternal, Infant and Young Child Nutrition) for the “First 1,000 Days” – the critical window for infant and child development, from conception to two years of age (-9 to +24 months) (Clinton, 2010). Programs that prepare young women for their first birth by promoting prenatal care, medically assisted delivery, and postnatal care, help to build the health competence of the young family cohort at a critical life stage and increase the likelihood of a pattern of healthy behaviors (Bandura, 2004) that will be sustained as the cohort ages and moves on to subsequent life stages. More health-competent parents, in turn, are more likely to consciously or unconsciously model health behaviors (e.g., handwashing, avoiding secondhand smoke, family planning, birth spacing), which has an educational effect on their children and results in more sustainable changes in family health patterns.

*Integration across health issues.* Integration across health issues is not a novel idea. For example, it has been fairly common practice for some programs to link family planning programs with post-abortion services (Youssef *et al.*, 2007) or with HIV prevention activities. The basic premise of many of these integrated programs is that a visit to a health care worker or facility for one specific health problem creates a unique opportunity for trained health professionals to also provide the client with information about other health issues. Such integrated approaches take advantage of existing face-to-face contact with trained health professionals. This is particularly important in developing country contexts where people do not always have good access to health information and services and where contacts with health care workers may be infrequent.<sup>3</sup> But many of these programs tend to focus almost exclusively on health services, or the supply side of health care. Few programs have tried to promote integration on the demand side of health, among the public.<sup>4</sup>

Typically, programs that focus on the demand side by promoting preventive and health-seeking behaviors among the public, have tended to focus on vertical health areas. For example, HIV prevention programs often focus on discouraging risky sexual behavior, increasing condom use, and promoting HIV testing. But very few programs are designed to address these issues in combination with other non-HIV-related health issues that individuals may face during their life course, and that families may have to deal with simultaneously, or in a relatively short time span.

One notable exception is the *Mabrouk!* Initiative, which was purposely designed to provide crosscutting communication support to increase positive behaviors and demand for services across a range of family health areas. The key maternal and child health goals addressed by the program were to increase prenatal care visits (including maternal nutrition), medically assisted delivery, neonatal birth weight, postpartum care (including immediate initiation of breastfeeding, use of contraception within two months of delivery), increased birth intervals, and infant health and nutrition. However, the



health-competence platform on which the program was based allowed it to respond to other health issues as they emerged over time, including new activities related to second-hand smoke and smoking cessation, hepatitis-C, and avian influenza, among others. The next sections of the chapter describe the program strategy derived from this analysis, followed by a description of the program itself.

## Strategic Design and Development

Based on this analysis of the situation and audiences in Egypt, the *Communication for Healthy Living* project selected the following two crosscutting goals:

- 1 To improve health outcomes in the areas of family planning and reproductive health, maternal and child health, and other public health threats, including infectious disease (avian and pandemic influenza, viral hepatitis, safe injection practices, and hygiene) and noncommunicable diseases or /healthy lifestyles (tobacco, breast cancer, cardiovascular disease, and diabetes).
- 2 To improve the capacity and sustainability of health communication programs in the public, NGO, and commercial sectors, as well as to establish enduring public demand for good health (Center for Communication Programs, Johns Hopkins University, 2010; Communication Initiative, 2005; Johns Hopkins University, 2005a).

The conceptual framework that was used to design the CHL project is based on three main guiding principles:

*Households are primary producers of health.* Families use their knowledge and information about health, and their access to services in the communities where they live, to avert risk, prevent illness, and stay healthy, thus “producing” their own health on a daily basis. Because such health decisions are made at the household level, it is essential to give ownership of “good health” to the families themselves.

*Program activities and messages must be crosscutting and integrated.* Because health information and messages from vertically funded service delivery programs converge at the household level, it is important to develop crosscutting messages and integrated programs that address fundamental household health needs. A unified health approach that promotes positive behaviors across the health domain can produce both synergistic outcomes across health areas and longitudinal gains in positive health effects. Integration of this type requires a multisectoral program that draws on the respective strengths of the public sector, the NGO sector, and the private sector. It also requires a multifaceted media campaign that uses a wide range of communication channels (including forms of mass media and forms of interpersonal communication).

*Sustainability should be built into the system.* The capacity of the health communication system as a whole must be strengthened. This includes building up: the essential capacity of households to access information, seek services, and practice healthy behaviors, thus creating an enduring demand for good health; the capacity of community networks to share information and offer access to basic quality health services; and the capacity of

institutions and organizations in the public, private, and NGO sectors to play complementary, decentralized roles in providing credible health information and service-seeking opportunities for the public.

In line with the strategic objectives of the project donor, the United States Agency for International Development (USAID), the focal point of the CHL strategic framework is the “Healthy Families, Healthy Communities” concept. From the top down, national health policies and service delivery systems provide households and families with messages that promote healthy families, particularly with respect to family planning and reproductive health, maternal and child health, and infectious diseases, while, from the bottom up, households and communities are empowered through communication to demand the information and services that allow them to produce and take ownership of better health (Johns Hopkins University, 2005a). Specific behavior-change communication activities were designed using a detailed conceptual framework that outlines the underlying conditions that may affect the outcomes, and the pathways through which communication activities can help achieve improved family planning and reproductive health (Johns Hopkins University, 2005a; Salem *et al.*, 2008; Storey, Kagawa, and Harbour, 2008).

Consistent with the analysis of the structure of Egyptian households above, the *Mabrouk!* Initiative segmented the family according to the age- or stage-appropriate needs of each member, addressing the household as a decision-making unit. At the same time, this approach addressed the needs of entire age cohorts in society (for example, “Children under 6 years” or “Unmarried Youth”), allowing for messaging that was relevant to the population as a whole. While each life stage has specific behavioral objectives, the Life Stage conceptual framework acknowledges that every stage is transitional and operates within the context of the family and community as a whole. Good health behavior adopted at an early stage, or collectively, represents a positive health investment and will have a cumulative, sustainable impact on future health behavior. Figure 18.1 shows how these life stages are depicted by CHL.

In early childhood, the main health needs include immunization, proper nutrition, and prevention and treatment of acute respiratory infections and childhood diarrhea. In its community program, CHL gives special focus to the critical window of maternal health and child development, from conception and pregnancy to the child’s age of 2 years (–9 to +24 months), in line with the MDG “First 1,000 days” initiative. By the time these children reach school age, the needs shift toward nutrition, female genital mutilation, and healthy lifestyles, such as smoking prevention (Population Council, 2010; Suzuki and Meekers, 2008). Unmarried youth and adolescents continue to face a need for proper nutrition and healthy lifestyles. Moreover, since many Egyptian males start smoking at an early age, unmarried males also have a need for smoking cessation programs (Meekers and El-Ghazaly, 2005; Population Council, 2010). Young married couples also face the risk of HIV infection and other sexually transmitted diseases. Because this life stage is associated with the onset of childbearing, there is also a need for safe motherhood and birth spacing. Older men and women face exceeding their desired family size, and therefore may have a need for family limitation. Proper nutrition and healthy lifestyles are also key concerns for this life stage (El-Zanaty and Way, 2001, 2006, 2009).

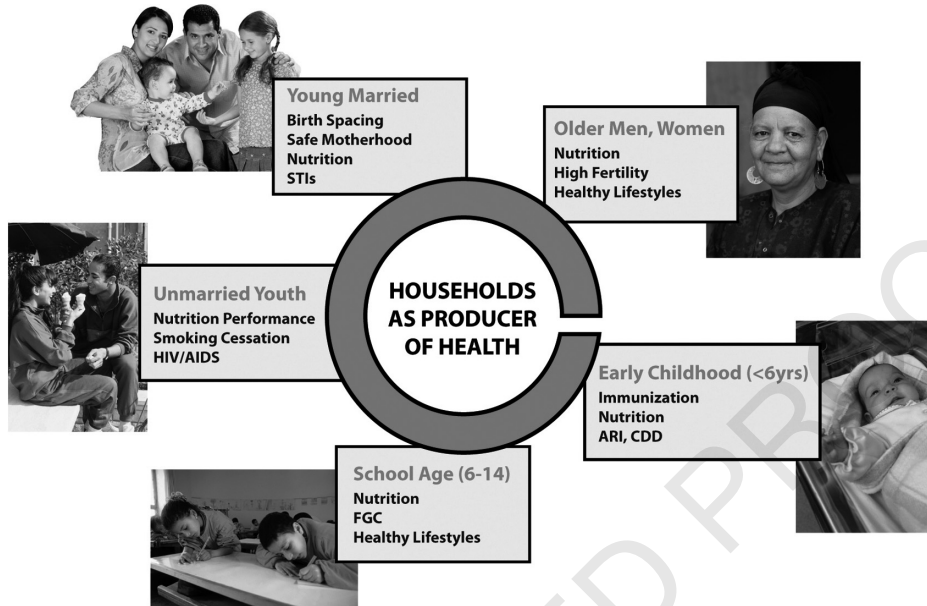


Figure 18.1 Households as producers of health.

The fact that health needs vary by age suggests that health competence is also life-stage-specific to a certain extent, as well as crosscutting. While some behaviors, such as hand washing, basic hygiene practices, and nutrition are relevant at all stages, other different sets of knowledge, attitudes, skills, and resources become necessary as one progresses to a new life stage and faces new health challenges (e.g., reproductive health in adolescence and young adulthood). Furthermore, people who practice health-competent behaviors at an earlier point in time are more likely to practice other healthy behaviors later. For example, analysis of survey data collected for the CHL project in 2004, 2005, and 2008 following a panel of 1,661 married women aged 15 to 49 showed that those who reported in 2004 that they had adopted family planning after the birth of their first child were significantly more likely in 2008 to report breastfeeding their most recent child, to have received regular antenatal care during that pregnancy, to have a smoke-free area in their home, and to practice handwashing before preparing food and after defecation. Consistent with social learning theory (Bandura, 1997, 2004), success in one aspect of health behavior results in self-efficacy perceptions that increase confidence in one's ability to achieve other health goals, so health competence is cumulative.

### Program Implementation: The *Mabrouk!* Initiative

The *Mabrouk!* Initiative was implemented using an Integrated Marketing Communication (IMC) approach (Arens, 1999; Kotler, 1999) that has been widely applied and validated globally for social and behavioral change. Not to be confused with integration across focal

areas of health (e.g., integrated approaches to FP/MCH/Nutrition), IMC seeks to unify and coordinate as many communication forms and approaches as possible (e.g. advertising, public relations, Internet communication, community mobilization, counseling) to reinforce and complement each other. At a deeper level, IMC means that all client contacts and messages are designed to communicate the same fundamental value associated with proposed actions and desired outcomes. The strength of this approach lies in the trust established between the client and the provider of the product or service. By focusing on the client–provider relationship, or trust, this approach recognizes that the client or customer is the main actor and decision maker with regard to the exchange.

The *Mabrouk!* Initiative used a full spectrum of communication approaches (ranging from mass media and publicity events, to community mobilization and empowerment, to client–provider counseling support) to promote the value of birth spacing and to help couples achieve their desired family planning outcomes (Center for Communication Programs, Johns Hopkins University, 2010; Communication Initiative, 2005; Salem *et al.*, 2008; Soul Beat Africa, 2010).

In line with Integrated Marketing Communication principles, the *Mabrouk!* Initiative (and, in fact, the entire CHL project) maintained a consistent, unifying focus on the value of good health, based on the deeply held cultural belief in Egypt that health is a gift that should be cherished and protected. This core value and unifying idea was embodied in the campaign's signature message, "*Sabetak Sarwetak,*" or "Your Health is Your Wealth," which was featured and reinforced in virtually all program materials and activities over a span of more than six years.

## Campaign highlights

### *Enabling environment*

The national crosscutting communication program was made possible through the leadership of Egypt's Ministry of Health (MOH) and its long-term institutional partners, principally the Ministry of Information/State Information Services (Piotrow *et al.*, 1997). Crucially, MOH policy created the enabling environment for the crosscutting communication program, supporting the integration of the various health sectors (including Population, Maternal/Child Health, and Infectious Disease), and a platform for interministerial coordination as well as partnership with the nongovernmental and commercial sectors.

As a first step, the MOH and national partners in the USAID-supported Communication for Healthy Living project identified the country's strategic health priorities, forming a technical strategy whose implementation was overseen by an MOH-chaired Executive Steering Committee. The Executive Steering Committee coordinated sectoral workplans and joint activities. After a series of activities designed to strengthen the governmental officials' leadership capacity to conduct integrated programs, and to develop an agreed set of family health messages, the program was launched.

### *The national media campaign*

The reach of communication programs is an essential precondition for impact. As with any program seeking to have population-level effects, the CHL program sought to achieve the greatest reach at the lowest cost per person. Since the Egyptian public's

access to and viewership of television is almost universal – even among rural populations – television played an important role in the communication mix.

Because over 95 percent of Egyptian households own a television, the program launched *Sahetek Sarwetak* and other specific family health messages in a series of television spots. The signature TV spot featured a marriage party on a boat, with parents and friends wishing the couple, *Mabrouk!* (Congratulations), Happiness and Good Health! The message positioned health as both a desired goal and a responsibility, and modeled parental and social support to young couples making family health decisions, including family planning.

Other TV messages addressed the specific health needs of young couples, including antenatal care, medically assisted delivery, breastfeeding, and postpartum care, as well as family planning initiation after the first child, (re)initiation of FP use within two months after delivery, and three- to five-year birth spacing. The spots also modeled husband–wife communication (a strong predictor of family planning use globally; see Lozare *et al.*, 1993), parental– and client–provider communication, women’s education, as well as timely information- and service-seeking.

The TV messages, in various combinations, were broadcast periodically throughout the life of the project from 2004–2010. Overall, the TV campaigns reached an average of between 52–65 percent of the adult population, or roughly 20–30 million adults every year (El-Zanaty and Way, 2009; PARC, n.d.).

#### *Mabrouk! wedding celebrations*

In Egypt, marriage is the foundation of family life, and wedding festivities are an important part of the local culture. Group wedding receptions are a customary way for families and friends of several newlywed couples to stage a major festivity jointly and to share in the costs. CHL launched the *Mabrouk!* Initiative locally in conjunction with the national *Sahetek, Sarwetek* media campaign by cohosting such a group wedding celebration in Minya Governorate in September 2004 (see Figure 18.2).

The celebration involved 150 newlywed couples and 9,000 guests, and was held in the Minya community sports stadium under the auspices of Minya Governor Hassan Hemeida and the Ministry of Health (Center for Communication Programs, Johns Hopkins University, 2010; Hammond, 2005; Johns Hopkins University, 2005b; Soul Beat Africa, 2010). The event was hosted by the popular Egyptian television personality Tarek El-Allam, included performances by several other major national celebrities, and attracted a broad range of private sector sponsorship. Major media coverage, including a feature on the global Arabic-language *Al Jazeera* network, and national and regional media, amplified the *Sahetek, Sarwetek* message, contributing to its success as a publicity event.

#### *Edutainment: Mabrouk! newlywed game show*

Similar but smaller wedding events were subsequently staged in several governorates of Egypt, in collaboration with event host Tareq El-Allam and his popular national television variety show, *Al Afdal*. As part of the collaboration, the *Al Afdal* TV program incorporated a *Sahetek Sarwetak* game show in the newlyweds segment. The segment was produced on location in the governorates. Each one featured a small-scale newlywed



Figure 18.2 Group wedding celebration in Minya Governorate in September 2004.

event open to the public, with the governor, celebrity Tarek El-Allam, and musicians on stage, joined by up to a dozen local newlywed couples. The segment took the form of a loosely structured contest in which the celebrity would quiz the new couples on their plans for a healthy family, addressing a variety of health themes, as well as husband–wife communication and gender roles. Stage props included crying baby dolls and cooking utensils, among other objects. The host would end the newlywed game by reminding participants and viewers, “Your health is your wealth.” The segment was then aired nationally as a segment within *Al Afidal* broadcasts and viewers were encouraged to call in for a chance to win prizes. In 2004 and 2005, the show aired during the 30 days of the Islamic holy month, Ramadan, when viewership was at its peak. In 2004, the show attracted an estimated 15 million viewers, and received almost 8.5 million calls over the Ramadan period. In 2005, the show was named by one of the national newspapers as the most popular television program during Ramadan (Communication Initiative, 2005; Johns Hopkins University, 2005b; Salem *et al.*, 2008; Soul Beat Africa, 2010).

Additional edutainment media programs included magazine-format TV and radio shows for young couples with children, featuring popular pediatrician, Dr. Mohamed Refaat. Dr. Refaat’s 30-episode program *Yum Wara Yum* [Day after Day] was coproduced by CHL, Procter and Gamble, and the Showtime channel in Dubai. It aired on satellite television during Ramadan in 2007 and was rebroadcast the next year on the national Egyptian terrestrial broadcast channel, Channel One. A complementary radio program of daily health tips and a weekly call-in show were also aired on the popular *Nogoom* FM radio station. In his programs, Dr. Refaat gave health tips for young couples on infant and young child care, including support for breastfeeding, nutrition at weaning, birth spacing and a wide range of other child care issues.



Figure 18.3 *Mabrouk!* family health booklet.

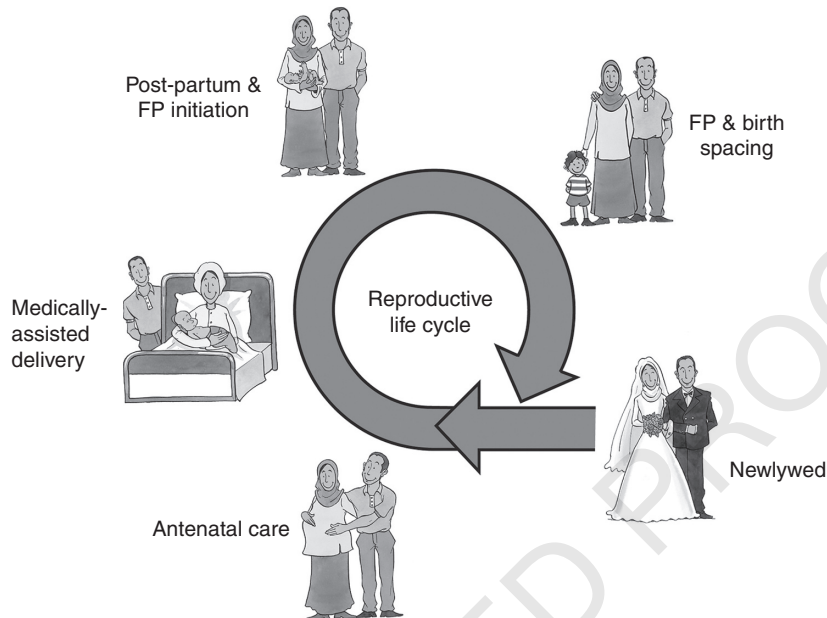
#### *Mabrouk!* family health booklet

All couples who participated in the Minya wedding event and subsequent TV newlywed shows, as well as hundreds of thousands of other couples over the life of the project were provided with a specially designed *Mabrouk!* family health booklet (see Figure 18.3). The *Mabrouk!* booklet guides the couple through the main health issues that they are likely to face during the first few years of their marriage, and that may have a lifelong effect on their family health (including family planning, safe pregnancy and delivery, pre- and post-natal care, breastfeeding, and child immunization). It is packaged in a standing picture frame that can be used to display the couple's wedding or other family photo with the booklet stored behind it to encourage keeping the book and having it accessible for easy reference (Salem *et al.*, 2008; Soul Beat Africa, 2010).

The booklet opens by wishing the couple happiness and good health, and then proceeds to give essential health information on the key health events (see Figure 18.4), with a double page for each reproductive life cycle event. For example, the section "You're pregnant" emphasizes the importance of visiting a doctor to monitor the pregnancy and the growth of the baby and to receive vaccinations and nutritional supplements that may be needed. Each section of the booklet also lists the warning signs that would require visiting a doctor and more serious danger signs that would require immediate emergency medical consultation. The booklet also contains a schedule of recommended vaccinations for children and space to record important information such as doctors' contact information, appointments, the mother's weight gain, and the child's weight gain.

The project distributed the booklet and related health communication materials wherever it made contact with young couples. In addition to the wedding event, over 100,000 booklets were distributed by MOH outreach workers and facility-based health workers to newlywed couples throughout the country (Salem *et al.*, 2008; Soul Beat Africa, 2010). The *Mabrouk!* booklet was inserted in special wedding issues of popular women's magazines on nine occasions, reaching an estimated 1.36 million purchasers directly, with additional pass-along readers assumed for each issue.

CHL also partnered with the *Maazoun* Association, or association of Islamic Marriage Registrars, and with priests of the same specialty, to deliver the *Mabrouk!* booklet to



**Figure 18.4** Reproductive life cycle from the *Mabrouk!* family health booklet.

newlywed couples applying to register their marriages (Center for Communication Programs, Johns Hopkins University, 2006). And in 2007, CHL entered an agreement with Procter and Gamble under which the company includes the *Mabrouk!* booklet in gift bags distributed to 130,000 new mothers annually. Through the variety of channels mentioned above, the project has distributed an estimated two million *Mabrouk!* booklets to couples throughout the country.

*Interpersonal communication and counseling at the service-delivery level*

The project also had goals to improve interpersonal communication linking MCH and FP within the service-delivery system. The enabling environment created by the MOH for an integrated, family health approach played an important role in supporting linkages between antenatal care, safe delivery, postpartum care, and family planning within the service-delivery system. After launching the integrated technical strategy, the training of providers, and the development of a set of integrated, family health messages, CHL continued to work with the MOH leadership to include family planning information in the antenatal care package, as well as to develop an integrated postpartum protocol. The protocol pioneered links between the hospital (curative sector) where most couples deliver, and the primary health care unit (preventive sector) that initiates the postpartum home visit. Additionally, the protocol linked the postpartum home-visiting service provided by an MCH nurse (who conducts a basic exam and checks for any signs of distress or complications) and that of the female health visitor, or *Raida Refaya*, who provides family planning, breastfeeding and MCH counseling and support. This integrated protocol was adopted



and applied by the MOH throughout its public sector program, reaching an estimated 80,000 postpartum couples from 2005 through 2010. CHL and Save the Children through the Community Health Program conducted another 50,000 postpartum home visits.

#### *The premarital exam*

From the beginning of the project, CHL took a “demand side” approach to addressing the health needs of young couples, seeking to generate greater demand for health information and services at the household level. No premarital exam or health service for newlyweds had existed previously within the MOH system, so the first health service or “supply side” contact with couples was typically when they sought antenatal care for a first pregnancy. However, CHL worked closely with the MOH to assist in the development of a nationwide Premarital Examination and Counseling service that issues a required health certificate for marriage. While in its early stages of implementation in 2010, the service holds great potential as an early contact point to offer newlyweds essential information as they begin their family lives.

#### *Client/provider educational materials*

In addition to the *Mabrouk!* booklet, the project partners produced and disseminated a wide range of client education materials and provider counseling aids to improve interpersonal communication linking MCH and FP. Simple flyers for low-literacy clients address subjects such as danger signs and proper prenatal care during pregnancy, safe delivery, postpartum care and danger signs, proper breastfeeding, as well as family planning methods, including the lactational amenorrhea method (LAM). These, and posters covering the project’s other main health areas, have been disseminated widely throughout the MOH health system with its estimated 5,000 service sites (Ministry of Health and Population, Egypt, El-Zanaty and Associates, and ORC Macro, 2003), as well as by NGOs and through a private sector pharmacy network, which has been developed and supported by the project and now consists of an estimated 30,000 neighborhood pharmacies nationally.

In addition, a client-provider counseling flipchart with a section for each MCH and FP health issue was developed for use in MOH primary health care centers. CHL and MOH together printed nearly 150,000 flipcharts on MCH, FP, and breastfeeding.

Production and distribution of such media and materials were strategically planned to reach and support, in as many ways and places as possible, the millions of young couples nationwide who were beginning family life: managing pregnancy, safe delivery, postpartum care, breastfeeding, and birth spacing.

#### *The Community Health Program*

To complement the national approach, the CHL project designed an intensive community health program to serve vulnerable groups in hard-to-reach, economically disadvantaged areas. What distinguished these subgroups from the majority was less their access to media than the psychosocial patterns of influence that created barriers to good health practices. The CHL program used community programs to “go the extra mile” and engage the social networks to affect change in rural Upper Egypt. This component was

implemented in cooperation with one of JHUCCP's Health Communication Partnership partners, Save the Children, in a select number of villages. As noted in the early sections of this chapter, areas of Upper Egypt (in more isolated south central parts of the country) have traditionally lagged behind the rest of the nation on major health indicators. CHL's Community Health Program under the *Mabrouk!* Initiative, therefore, focused initially on these governorates.

The Community Health Program initially started in seven focal villages in Minya governorate in 2004, and expanded to villages in Qena and Fayoum governorates in 2005.<sup>5</sup> By September 2009, the program had expanded to 206 villages and hamlets with an estimated population of two million in five governorates (three in Upper Egypt and two in Lower Egypt). In these areas, CHL worked closely with community development associations (CDAs), which are local nongovernmental organizations, to assess the health needs of the village, to form village health committees where influential locals and the clinic doctor were represented, to build groups of women and men leaders, and, finally, to implement an easily managed family health program (Center for Communication Programs, Johns Hopkins University, 2010; Salem *et al.*, 2008; Soul Beat Africa, 2010). The core of the community health program is the *Mabrouk!* package on a village scale, with newlywed visits, pregnancy classes, safe delivery referrals, postpartum home visits, and infant nutrition classes, as well as special activities for avian influenza and school health and hygiene.

#### The Community Health Package: newlywed visits, antenatal care, postpartum home visits, and child nutrition sessions

As part of this community mobilization program, CDAs train outreach volunteers to help extend the reach of the *Mabrouk!* Initiative through the local social network. These CDA volunteers – who come from the community and know the members of their neighborhoods – make home visits to the newlywed couples to wish them “Happiness and Good Health,” hand out the *Mabrouk!* booklet, introduce them to the health facilities that are available in the community, provide basic counseling on family health issues, distribute health-related information materials, and invite the couple to participate in various community activities.

CDAs also assist in organizing pregnancy classes in the local health facility. The CHL project has conducted community-based sessions with over 12,000 women who needed antenatal care especially those identified as being “at risk” because they were pregnant for the first time, had a pregnancy with low weight gain, or had previously delivered infants with low birth weight below the WHO standard of 2.5 kg (Center for Communication Programs, Johns Hopkins University, 2010). The safe pregnancy program conducted home visits to identify all pregnant women in the village and track their antenatal care and weight gain on a monthly basis. Women who were pregnant for the first time and those with low weight gain were recruited into health awareness classes. Volunteers facilitated regular antenatal classes in the local clinic and also assisted couples to make arrangements for medically assisted delivery at the local hospital, usually in a district center at a distance from the village.

During the first week after the delivery, CDA volunteers worked with nurses at the local primary health care unit to conduct postpartum home visits. Because most women conceive within the first few years of marriage, many women involved in the community health program have received a newlywed visit, antenatal classes, and a postpartum visit. Postpartum home visits by birth attendants are common in Egypt (Darmstadt *et al.*, 2008), so familiarity with and acceptance of this practice provides an opportunity to meet women in the privacy of their own home and to use interpersonal communication to reinforce and expand on the national messages seen in the media or in the government service delivery setting. During postpartum home visits, nurses and CDA volunteers discuss infant health and postpartum care for the mother, support them in breastfeeding the newborn, and encourage women to start using family planning within 40 days of the delivery, as well as to space their children three years apart.

In addition to this antenatal/postpartum care component, the CHL community health program sought to reduce malnutrition among children 6 to 24 months of age – a critical transition period in child development. Children that were underweight for their age were identified by weighing all the community babies in this age cohort – with findings showing malnutrition rates of typically 25–30 percent. CDA volunteers then led nutritional rehabilitation sessions in which the mothers with underweight children joined other village mothers in similar social circumstances with well-nurtured children to cook, eat, and learn together, using commonly available foodstuffs and sharing personal experience. After a series of such sessions, usually lasting less than six months, community malnutrition rates were reduced significantly, typically to levels of 5 percent or less.

### Arab Women Speak Out (AWSO) Training Program

In conjunction with the *Mabrouk!* Initiative, CHL's Community Health Program also organizes Arab Women Speak Out (AWSO) sessions for young female leaders. AWSO is a long-standing female empowerment training program for women in the Near East (Underwood and Jabre, 2008). The program was designed and implemented by the Johns Hopkins University Center for Communication Programs in collaboration with the Center of Arab Women for Training and Research in Tunisia, beginning in late 1999. It was later implemented in several countries in the Middle East, including Egypt (Center for Communication Programs, Johns Hopkins University, 2001; Soul Beat Africa, 2009). It has also been adapted for use in sub-Saharan Africa under the new label of African Transformations.

Consisting of video case studies, discussion guides, and other supporting materials, the program is specifically designed to be incorporated into existing community-based programs that are being implemented by organizations working in the area. CHL draws on the AWSO training program to prepare female leaders to serve as active agents to promote health and gender equity in their communities. This program helped identify, train, and recruit women volunteers (outreach workers) who implement Mabrouk Initiative as described above in all CHL focal villages.

CHL has trained over 430 female community leaders in its identified focal villages to implement this process and the discussion groups they organize reach an estimated

10,000 women annually (Center for Communication Programs, Johns Hopkins University, 2010). During fiscal year 2009 (October 2008–September 2009), nearly 13,000 women attended AWSO meetings through the CHL Community Health Program. Female leaders who have completed the AWSO training also conduct home visits with women, thereby increasing the outreach of the AWSO programs. One of the crucial roles of the AWSO program in CHL's community program has been to build social support among elder women in the community for delaying marriage, supporting female education, and supporting positive health practices among young couples.

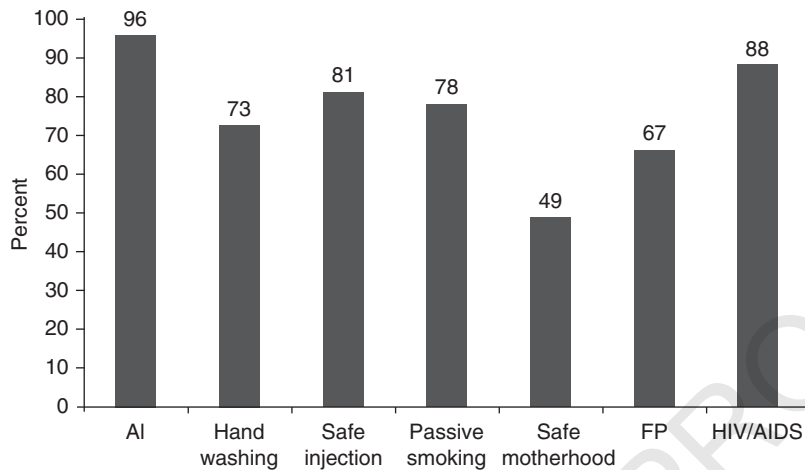
## Evaluation: CHL Program Results

### Campaign exposure

A number of studies have shown that recall of CHL campaign activities is high (Hutchinson, 2010; Meekers and Nauman, 2006b). Figure 18.5 shows that in late 2007, almost half of all adult Egyptians could recall seeing safe motherhood messages on television within the past six months, while two thirds recalled seeing family planning messages. Recall of handwashing and passive smoking messages were 73 percent and 78 percent, respectively, while recall of safe injection and HIV/AIDS messages were 81 percent and 88 percent. Ninety-six percent recalled seeing avian influenza messages on television. Overall exposure to FP messages nationally has been high by communication campaign standards: 83 percent in 1995, 96 percent in 2000, 91 percent in 2005 and 67 percent in 2008 (El-Zanaty *et al.*, 1996; El-Zanaty and Way, 2001, 2006, 2009). The decline from 2005 to 2008 is partly explained by the Egyptian MOH's enthusiastic embrace of mass media as a public health tool and its use to address an expanding portfolio of health issues, such as avian influenza (as opposed to using mass media only promote FP and MCH, as was the case in the past).

### Program Outcomes

There is strong evidence over time, as well as cross-sectionally, that exposure to the CHL health communication campaign activities had a positive effect on health competence, attitudes toward healthy behaviors, and several family planning outcomes. (Hutchinson, 2010; Meekers and Nauman, 2006a, 2006b; Storey *et al.*, 2008). We draw on two data sources to illustrate the effects of the CHL project at the national and community levels. Nationally, mass media, advocacy, and service quality improvement efforts are assessed using national Egypt Demographic and Health Survey (EDHS) data at four points in time: 1995, 2000, 2005, and 2008 (El-Zanaty *et al.*, 1996, El-Zanaty and Way, 2001, 2006, 2009). These surveys drew nationally representative samples of married women aged 15–49 years that can be disaggregated to the regional and governorate level. For the purposes of the *Mabrouk!* evaluation, we focus on a subset of these national samples,



**Figure 18.5** Television exposure by health topic, 2008.

*Source:* Egyptian Health Communication Survey, January 2008 (n=3770, 15–49 adults in 21 governorates).

namely the Young Family Cohort of women under the age of 30 who reported at least one birth in the five years preceding the survey.

Respondents in the Demographic and Health Surveys are asked a wide variety of questions about pregnancy, childbirth, prenatal and postnatal care, and family planning, corresponding to all of the key indicators targeted by the *Mabrouk!* Initiative. In addition, respondents are asked an extensive battery of questions about their demographic and household conditions, including ownership of television, radio, computers, and mobile phones. They are also asked questions about their media use and interpersonal communication habits and about whether or not they have been exposed to family planning and safe pregnancy messages through television, radio, print or interpersonal channels (including at service facilities or through personal networks).

At the community level, we rely on monitoring data collected systematically by project partners in the focal villages of Minya, Fayoum, and Qena in Upper Egypt to assess impact of the intensive home visiting, counseling, nutrition, and empowerment activities conducted under the *Mabrouk!* Initiative by CDAs and local health-service providers. Standardized forms developed by Save the Children in the 1990s for monitoring prenatal progress, postpartum care, infant growth, and malnutrition, are used to record prenatal care visits, birth statistics (e.g., birthweight and birth intervals), postpartum care, and timing of contraceptive use.

National broadcast and print media reach families in the focal villages and countrywide alike. But focal village families also benefit from the community-based program, while the rest of Egypt does not. For some analyses, in order to compare the impact of the combined national and local *Mabrouk!* activities in the focal villages with the impact of the national program alone, we compare the subset of DHS cases in Upper Egypt – the larger sociopolitical region within which the CHL community-based program was implemented – with cases from the focal village monitoring data. Focusing on the *Mabrouk!* Initiative, we further restrict most of our analyses to women in the Young Family Cohort

(YFC). These restrictions help ensure that the respondents in the monitoring data and DHS data are roughly comparable in terms of the region, rural–urban residence, demographics, and other sociocultural characteristics.

Our analysis focuses mostly on seven key family planning and maternal health variables that are described below:

*Maternal/child health variables*

- Percentage of women in the young family cohort who report that they had four or more antenatal care (ANC) visits – the WHO recommended minimum – for their last birth;
- Percentage of women in the young family cohort whose last delivery was medically assisted (assisted by a medical doctor, as opposed to a midwife, traditional birth attendant, neighbor/relative, or no one);
- Percentage of women in the young family cohort for whom the birth to birth interval for the two most recent births was more than 33 months (the lower end of the WHO standard range for optimum birth interval), and
- Percentage of women in the young family cohort whose most recent baby had a birth weight of over 2.5 kilograms (the WHO standard for acceptable birth weight).

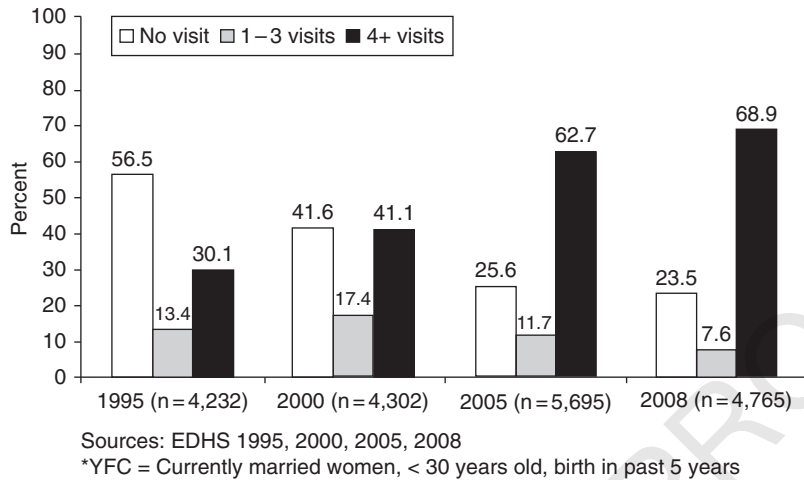
*Family Planning variables*

- Percentage of women in the young family cohort who report that they ever used family planning;
- Percentage of women in the young family cohort who report using family planning within 8 weeks after their last delivery (among those women who adopted family planning).
- Percentage of women in the young family cohort who report using family planning after the birth of their first child (parity 1 use).

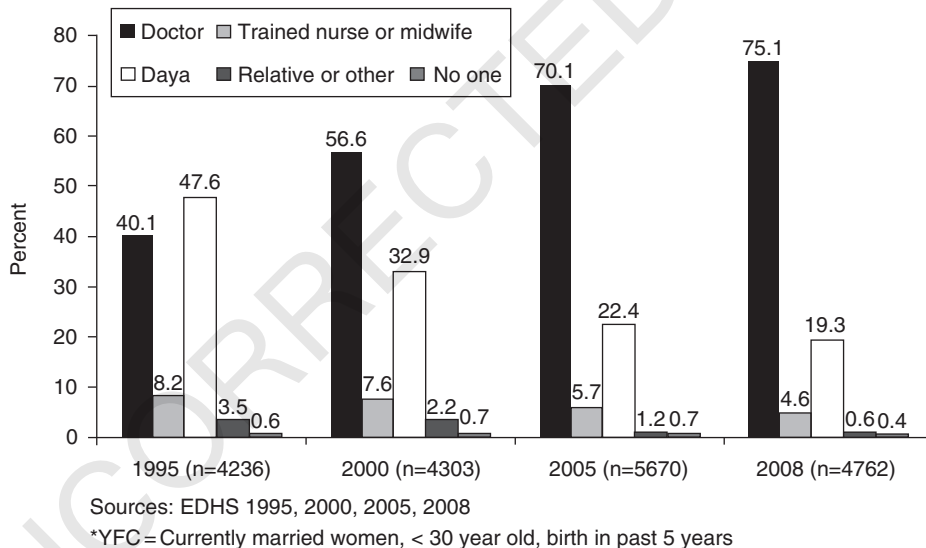
### National trend results

Figures 18.6–18.8 show national trends in prenatal care, medically assisted delivery, and birth interval for the young family cohort across the four waves of DHS data. The launch of the *Mabrouk!* Initiative is indicated between the 2000 and 2005 data points. The percentage of YFC women who report having at least four ANC visits for their most recent birth has increased steadily from 30 percent in 1995, to 41 percent in 2000, 63 percent in 2005 and 69 percent in 2008, with a jump of over 21 percentage points between 2000 and 2005 when the *Mabrouk!* Initiative started.

Figure 18.7 shows that the percentage of YFC women nationally whose most recent delivery was medically assisted has increased from 40 percent in 1995 to 57 percent in 2000, 70 percent in 2005, and 75 percent in 2008. Although the increases are somewhat less dramatic for birth interval, Figure 18.8 also shows an upward trend over time in the percentage of YFC women nationally whose two most recent births were spaced at least 33 months apart, from 39 percent in 1995 to 51 percent in 2008. That gains in birth



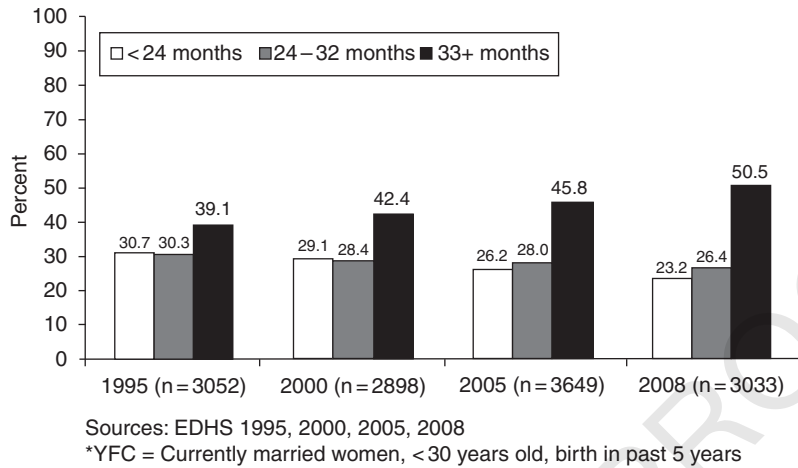
**Figure 18.6** Four+ antenatal visits.  
Sources: EDHS, 1995, 2000, 2005, 2008.



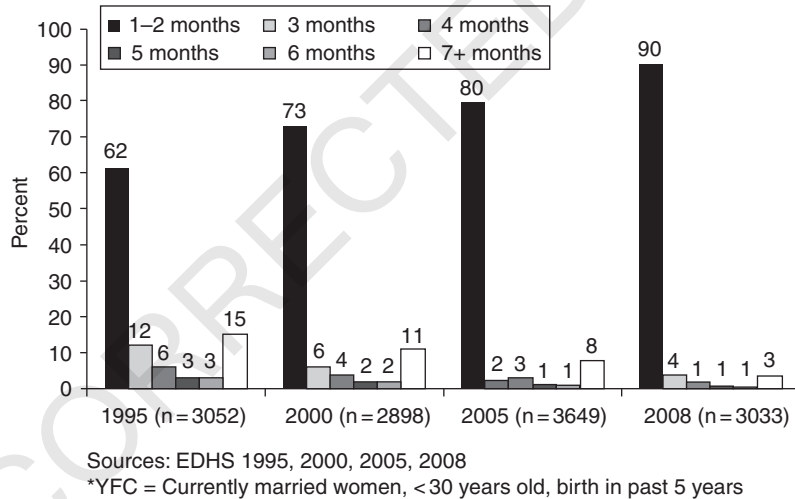
**Figure 18.7** Medically assisted deliveries.  
Sources: EDHS, 1995, 2000, 2005, 2008.

interval within this cohort are modest compared to some of the other indicators is probably explained by the fact that in Egypt newlywed couples face social pressure to demonstrate their fertility after marriage and particularly to produce a son. That much change over time was observed at all may speak well to the successful promotion of post partum and low parity family planning use.

Figure 18.9 shows trends in family planning use (either new use or reinitiation of prior use) within two months after the delivery of one's most recent child. Over time,



**Figure 18.8** Birth interval of 33 months or longer.  
Sources: EDHS, 1995, 2000, 2005, 2008.

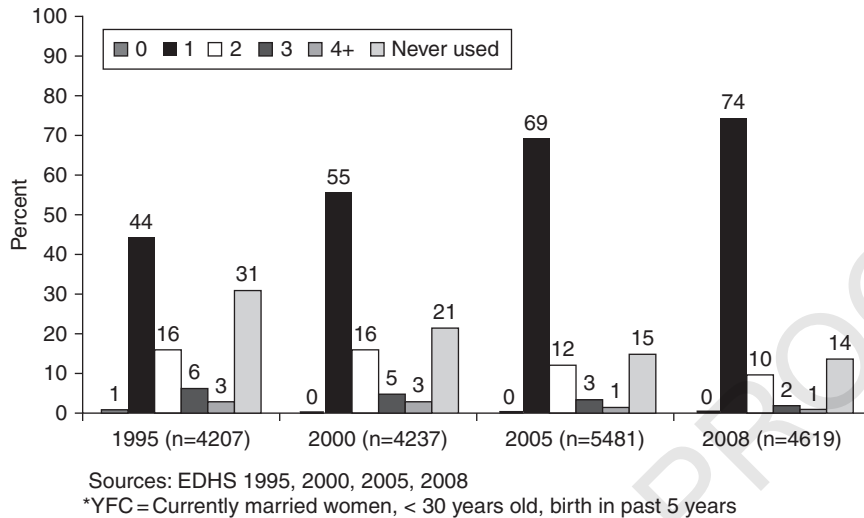


**Figure 18.9** FP use within two months of delivery.  
Sources: EDHS, 1995, 2000, 2005, 2008.

this has increased strongly from 62 percent in 1995 to 73 percent in 2000, 80 percent in 2005 and 90 percent in 2008. That 9 out of 10 women who use contraception report initiating use within two months of delivery provides strong evidence that women are proactively trying to manage their fertility by taking the precaution of starting contraception within the period before postpartum fertility returns in order to avoid unwanted pregnancy.

Finally, at the national level, the percentage of YFC women who say they first started to use FP after the birth of their first child has also climbed steadily. Figure 18.10 shows





**Figure 18.10** Number of children at first use of contraception.

Sources: EDHS, 1995, 2000, 2005, 2008.








that in 1995 only 44 percent of YFC women said they started using contraception when they had one child. That percentage climbed to 55 percent in 2000, to 69 percent in 2005, and to 74 percent by 2008. This figure also shows that the percentage of women who report never having used contraception has steadily declined from 31 percent in 1995 to 14 percent in 2008.

Taken together, these figures show consistent progress over time across the range of maternal and child health and family planning outcomes that were the focus of the *Mabrouk!* Initiative. At least two of these five indicators (prenatal care and parity 1 FP use) show particularly strong increases between 2000 and 2005 when the *Mabrouk!* Initiative was launched.

### Focal village compared to national YFC outcomes

To further examine the question of program impact, we compare the outcomes on major MCH and FP indicators between YFC women in Upper Egypt and their counterparts in the CHL focal villages of Upper Egypt. Because YFC women everywhere could have been exposed to the national *Mabrouk!* Components, but only the focal village YFC women had access to the community-based program, outcomes in focal villages should be better – other things being equal – if outreach activities somehow complement or reinforce national program components.

The table in Figure 18.11 compares outcomes for YFC women in all of Upper Egypt with those for YFC women in the focal villages on seven MCH and FP indicators. The percentage of women who received the intensive focal village interventions (postpartum home visits, pregnancy classes, family planning counseling, and infant care classes) was statistically higher on six of seven indicators, compared to the larger population of women

Indicator	All upper egypt		Focal villages upper egypt		P-value
	n	%	n	%	
 4+ ANC visits	2,051	60.8	6,893	82.4	0.001
 Delivery assisted by doctor	2,050	67.9	6,890	84.6	0.001
 Birth weight > 2.5Kg	778	85.9	6,886	98.6	0.001
 Ever use of FP	2,051	80.2	6,893	83.0	0.002
 FP use within < 8wks after delivery	1,068	69.9	5,654	77.9	0.001
 FP after birth of first child	2,051	61.4	6,893	82.5	0.001
 Birth interval > 33 months	1,335	45.8	436	33.1	ns

Members of young family cohort = married women aged 30 or less with a birth in the past 5 years

Sources: <sup>1</sup>EDHS 2008, 9 governorates; <sup>2</sup>CHL M&E data 2005–2009, 32 focal villages in 3 governorates

**Figure 18.11** Focal village compared to population outcomes (Young Family Cohort in Upper Egypt).

Sources: EDHS, 2008, 9 governorates; CHL M&E data 2005–2009, 32 focal villages in 3 governorates.

in Upper Egypt. Only birth interval was not statistically different, probably due to the low number of women in the focal village monitoring data who had the two births within a five-year period needed to calculate the birth interval.

Because the women who participated in the community-based sessions and were captured in the monitoring database were by definition “high-risk” cases due to having low weight gain during pregnancy, delivering infants with low birth weight, or having malnourished children, the fact that these challenged women could in the end outperform their regional counterparts speaks to the power of the CDA-led activities.

### Impact of communication at the national level

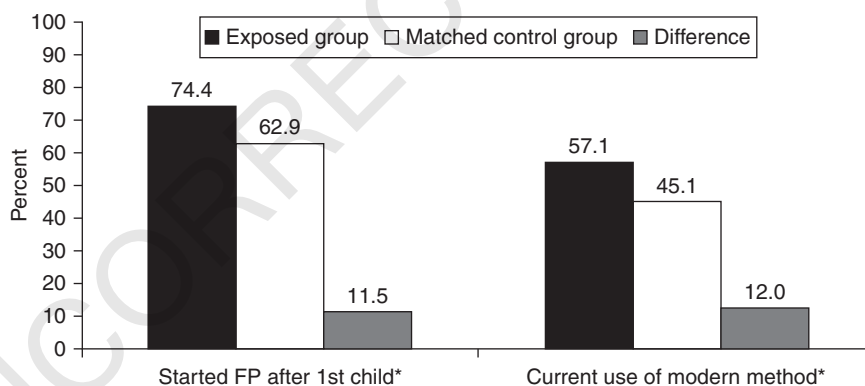
A critical question all communication programs should try to answer is whether change can be attributed to the program or if it is related to other factors, such as wealth, literacy, or access to media. Exposure to family planning messages was measured in the EDHS 2008 survey as recall of up to 12 different sources of information, including mass media, community outreach, and facility-based contacts. This scale was dichotomized at the median to create a low (0–1 sources) versus high (2+ sources) exposure variable. Exposure to safe pregnancy messages was measured in the EDHS 2008 survey as recall of up to nine sources of information including mass media, community outreach, and facility-based sources. This scale, too, was dichotomized at the median to create a zero (no sources) versus any (1+ sources) exposure variable.

Randomized assignment to treatment or nontreatment is not an appropriate design for evaluating national programs like *Mabrouk!* that aim to reach everyone, so the issue

becomes how to create a comparison group that permits measurement of exposure effects. Also, disadvantaged individuals tend to have reduced opportunity or motivation to be exposed to a program, so a comparison of outcomes based on raw exposure can be biased. To address these issues, we use a technique known as propensity score matching (PSM) to control for exposure bias and to create valid treatment and comparison groups (Do and Kincaid, 2006; Rosenbaum and Rubin, 1983; D'Agostino, 1998).

From the EDHS 2008 data, we identified a set of variables that predict YFC women's reported exposure to FP messages, on the one hand, and to safe pregnancy messages on the other hand. We found 10 variables that predicted whether or not a woman was exposed to any FP messages in the broadcast or print media, through health facility contacts or through outreach and nine variables that predicted exposure to safe pregnancy messages.<sup>6</sup> Using STATA (v11) algorithms for PSM, these variables were used to calculate propensity scores for each person representing the predicted likelihood of exposure to FP messages and to safe pregnancy messages. The PSM algorithm then matches exposed and unexposed cases at the same level of propensity before calculating an average matched difference in outcome percentages between exposed and unexposed cases, controlling for the likelihood of exposure. The result is an estimated percentage point difference between exposed and unexposed (matched control) cases adjusted for exposure bias.

Figures 18.12 and 18.13 show the results of this analysis. Exposure to FP messages accounted for a 12.0 percentage point difference in current use of a modern contraceptive method and an 11.5 percentage point difference in use of FP after the birth of the



<sup>1</sup>Recall of up to 12 sources of FP information including mass media, outreach and facility contacts (range 0–9); median split; matched control group = 0–1 sources, exposed group = 2+ sources

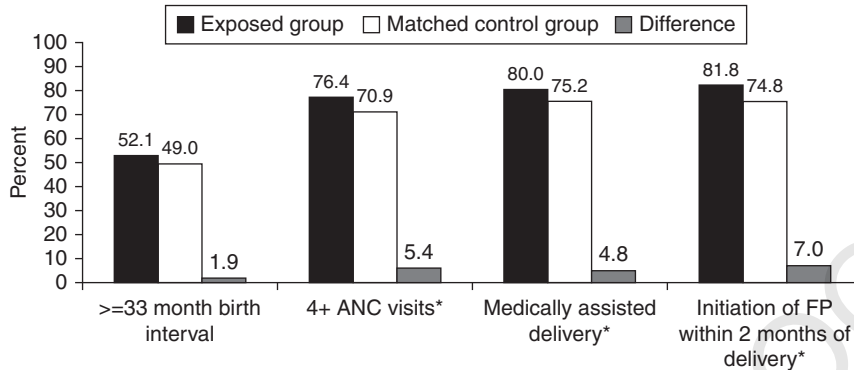
<sup>2</sup>Controlling for 10 predictors of exposure to family planning messages

source: EDHS 2008 (the young family cohort is n=2774 exposed and 1837 unexposed CMW, < 30 years old, birth in past 5 years)

\*p < .001

**Figure 18.12** Impact of FP message exposure on FP behaviors among YFC, adjusted for exposure bias (EDHS 2008).

Sources: EDHS 2008 (the Young Family Cohort is n=2774 exposed and 1837 unexposed CMW, < 30 years old, birth in past 5 years).



<sup>1</sup>Recall of safe pregnancy messages from any of 9 sources including mass media, outreach and facility contacts

<sup>2</sup>Controlling for 9 predictors of exposure to safe pregnancy messages

Source: EDHS 2008 (the young family cohort is n=1146 exposed and 3659 unexposed currently married women aged 30 or less with a birth in the past 5 years)

\*p < .05 or better

**Figure 18.13** Impact of safe pregnancy message exposure on antenatal and postnatal behaviors among YFC, adjusted for exposure bias (EDHS 2008).

Sources: EDHS 2008 (the Young Family Cohort is n=1146 exposed and 3659 unexposed currently married women aged 30 or less with a birth in past 5 years).

first child. Exposure to safe pregnancy messages accounted for a 5.4 percentage point difference in having 4+ prenatal care visits, a 4.8 percentage point difference in medically assisted delivery and a 7.0 percentage point difference in FP use within 2 months of one's most recent delivery. Only the effect of safe pregnancy message exposure on birth interval was not statistically significant.

## Discussion

The *Communication for Healthy Living* (CHL) project in Egypt implemented an unusually sophisticated full-scale national and community-based communication campaign – supported by policy change and service delivery quality improvement – to address the health needs of family members in various life stages, with the special *Mabrouk!* Initiative focused on newlywed and young couples. The achievements documented in national and community-based data could not have been realized without the political will and commitment over time of the Government of Egypt, particularly the Ministry of Health, and of one particular donor agency, USAID, to not only mitigate specific health deficits but to achieve sustainable healthy practices.

In a mature “market” like Egypt where 87 percent of the demand for family planning services is already satisfied – but where continued population growth threatens already stressed health and environmental resources – strategies must be developed to help new families become producers of health, help sustain healthy behaviors where they already exist, and help extend access to those who still face social and material barriers to good

health. None of this is possible through service delivery alone. There must be enduring demand for quality health services and for achieving healthy living.

We believe that the EDHS trend data indicate an enduring demand for better health and generational shifts in health practices that could not have occurred without communication. Women now are having fewer children than their parents, and this has enormous, long-lasting impact on how families function: as families become smaller and children are spaced farther apart, concerns about how a large family survives turn toward concerns about how to ensure the quality of child rearing and family health outcomes. The shift toward raising healthy, educated children is accompanied by shifting priorities such as increased investment in education and healthful foods. In other words, families become more health-competent.

Health competence is life-stage-specific to some extent. Because health needs vary by age, individuals at each life-stage require a different set of knowledge, attitudes, skills, and resources to achieve healthy behaviors. But in the longer term, *households* become health-competent when they are enabled to mobilize the resources they need – including information, social support, and greater control – in order to make health decisions consistently and gain greater ownership over positive household health outcomes. CHL aimed to facilitate this and the *Mabrouk!* Initiative found an appropriate entry point in newlywed couples.

Space prohibits us from describing in any detail other documented outcomes associated with the CHL program, but the partnerships established with ministries, universities, the private sector, and CDAs helped the government and communities to respond rapidly and effectively to a number of emerging health issues. We mention only a few brief examples here. CHL's work with medical students to organize university campaigns on viral hepatitis vaccination and prevention resulted in an increase in vaccinations and in a new university policy requiring all college students to be vaccinated for viral hepatitis before graduation. Getting young people actively involved in health promotion helps establish interest in good health before marriage. When a series of studies drew attention to the high breast cancer mortality rate in Egypt due to delayed detection and treatment, CHL worked with partners to help organize a Komen Foundation "Race for the Cure" event, media coverage, and other breast cancer awareness activities.

One of the most striking achievements of the CHL program was its timely response to the avian influenza (AI) outbreak in February 2006 and continued efforts to fight seasonal AI and pandemic influenza outbreaks. In 2005, anticipating an AI outbreak, CHL partners produced television spots, print materials, and outreach activities and were able to launch a national campaign on the day the first AI case was reported. Within hours of the confirmation of cases, all the major state-owned television channels were broadcasting the news to the public as well as airing an informative TV spot showing families how to protect themselves from the deadly virus. PARC Media Monitoring Services reported that the TV message reached 82 percent of Egyptian adults, or 34 million people, within a day of its launch. A battery of AI-related questions developed by CHL for its 2007 national health communication survey was adopted and included in the 2008 EDHS survey (El-Zanaty *et al.*, 2008; El-Zanaty and Way, 2009). Data from the survey revealed that recall of program messages predicted higher levels of protective knowledge among

poultry owners. Knowledge, in turn, predicted higher levels of self-efficacy and together, program recall and self-efficacy were the strongest predictors of household risk reduction behaviors in families that raised poultry (Center for Communication Programs, Johns Hopkins University, 2007).

In short, the innovative part of the CHL program – illustrated in the *Mabrouk!* Initiative we have focused on here – lies in its approach for simultaneously developing health competence at different levels: at the organizational level for timely, effective, high-quality health communication, at the community level for mobilization of health resources and outreach by civil society groups, and at the household level where newlywed couples begin to develop health-competence from the earliest days of their family life together. Although unique in its local configuration, CHL's program focus on households as producers of health, supported by their community and by public and private health service providers, including the media may be an approach that holds promise for other and could potentially change the way we think about the implementation of family planning and family health programs.

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### Notes

- 1 CHL was a seven-year project (2003–2011) funded by the United States Agency for International Development with technical assistance from the Johns Hopkins University Center for Communication Programs (JHUCCP). The program is part of the larger USAID-funded *Health Communication Partnership*, a global communication initiative also led by JHUCCP in partnership with the Academy for Educational Development, Save the Children, the International HIV/AIDS Alliance, and Tulane University's School of Public Health and Tropical Medicine.
- 2 These categories are *rough* proxies for the life stages identified by the CHL project. However, because of the way the household datasets are set up, creating the exact same categories was not feasible. Note also that, due to the age differences between spouses, it is possible for a husband and wife to be classified in different life stages.
- 3 A similar logic is used by programs that integrate health information and/or services in other sectors, such as agriculture or education. In Egypt, Pathfinder International's *Takamol* project trained agriculture and irrigation workers to provide reproductive health information (Salem *et al.* 2008) and the CHL project mobilized existing networks of local NGOs and neighborhood pharmacies that had previously supported family health initiatives to rapidly scale up avian influenza prevention efforts when the first cases appeared in Egypt in February 2006.

- 4 A notable exception is a recent eye care program in Menya Governorate that used female health visitors to talk to the entire family about the importance of seeking eye care for women in the household and to explain that saving or restoring women's eye sight would benefit the whole family (Mousa, Ezz El Arab, and Rashad, 2009).
- 5 The selected governorates are among the seven governorates that have been targeted for special USAID-sponsored family planning and health initiatives (El-Zanaty and Way, 2006, p. 6).
- 6 Statistically significant predictors of FP message exposure were: visited a health facility in the past year, had autonomy to make household decisions about money, had ever discussed female circumcision with spouse, had any barriers to health care access, region of residence, had conversations with anyone about health, watched TV daily, listened to radio daily, ever read a newspaper, spouse had at least primary education. Predictors of safe pregnancy message exposure were: literacy, wealth quintile, age, had visited a health facility in past year, had ever discussed female circumcision with spouse, had conversations with anyone about health, listened to the radio daily, ever read a newspaper, owned a TV.

## References

- Abdel-Tawab, N. and Roter, D. (2002). The relevance of client-centered communication to family planning setting in developing countries: Lessons from the Egyptian experience. *Social Science and Medicine*, 54(9), 1357–1368.
- Arens, W. (1999). *Contemporary Advertising*, 7<sup>th</sup> edn. New York: Irwin/McGraw Hill.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: Freeman Press.
- Bandura, A. (2004). Health promotion by social cognitive means. *Health Education and Behavior*, 31(2), 143–164.
- Becker, G. (1993). *A Treatise on the Family: Enlarged Edition*. Cambridge, MA: Harvard University Press.
- Beltrán, S. L. R. (1974). *Rural Development and Social Communication: Relationships and Strategies*. Proceedings of the Corner-CIAT International Symposium on Communication Strategies for Rural Development, Cali, Columbia, 17–22 March, 1974. (pp.11–27). Ithaca, NY: Cornell University.
- Center for Communication Programs, Johns Hopkins University. (2001). AWSO program helps Arab women redirect their lives. *Communication Impact*, 13. Retrieved from <http://www.jhuccp.org/sites/all/files/13.pdf>
- Center for Communication Programs, Johns Hopkins University. (2006). *CHL's Mabrouk Initiative Scales Up in Partnership with the Maazoun Association*. Retrieved from <http://www.comminit.com/global/node>
- Center for Communication Programs, Johns Hopkins University. (2007). Communication for Healthy Living's campaign improves responses to avian influenza in Egypt. *Communication Impact*, 22. Retrieved from <http://www.jhuccp.org/sites/all/files/22.pdf>
- Center for Communication Programs, Johns Hopkins University. (2010). Communication for Healthy Living. Retrieved from <http://www.jhuccp.org/node/680>
- Chemers, M. (2000). Leadership research and theory: A functional integration. *Group Dynamics: Theory, Research, and Practice*, 4(1), 27–43.
- Clinton, H. (2010). *1,000 Days: Change a Life, Change the Future*. Remarks by Secretary of State Hillary Rodham Clinton, InterContinental Hotel, New York, September 21, 2010. Retrieved from <http://www.state.gov/secretary/rm/2010/09/147512.htm>
- Communication Initiative (2005). Programme Experiences: Communication for Healthy Living (CHL) – Egypt. Retrieved from <http://www.comminit.com/global/node/128040>

- Darmstadt, G., Hussein, M. H., Winch, P. *et al.* (2008). Practices of rural Egyptian birth attendants during the antenatal, intrapartum and early neonatal periods. *Journal of Health, Population, and Nutrition*, 26(1), 36–45.
- D'Agostino, R. B., Jr. (1998). Propensity score methods for bias reduction in the comparison of a treatment to a non-randomized control group. *Statistics in Medicine*, 17(19), 2265–2281.
- Díaz Bordenave, J. (1994). Participative communication as a part of building the participative society. In S.White and N. Sadanandan (Eds.), *Participatory Communication: Working for Change and Development* (pp. 35–49). Thousand Oaks, CA: Sage Publications.
- Do, M. and Kincaid, D. L. (2006). Impact of an entertainment-education television drama on health knowledge and behavior in Bangladesh: An application of propensity score matching. *Journal of Health Communication*, 11(3), 301–325.
- Edberg, M. (2007). *Essentials of Health Behavior. Social and Behavioral Theory in Public Health*. Boston: Jones and Bartlett.
- El-Ghazaly, N. and Meekers, D. (2007). Trends and determinants of maternal health indicators in Menya Governorate, Egypt. Poster presented at the Annual Meeting of the Population Association of America, New York, March 29–31, 2007.
- El-Zanaty, F., Hussein, E., Shawsy, G. *et al.* (1996). *Egypt Demographic and Health Survey 1995*. Cairo and Calverton, MD: National Population Council and Macro International, Inc.
- El-Zanaty, F., Storey, D., El-Saied, M. *et al.* (2008). *Egypt Health Communication Survey Report*, unpublished report. Cairo: Communication for Healthy Living Project.
- El-Zanaty, F. and Way, A. (2001). *Egypt Demographic and Health Survey, 2000*. Calverton, MD: Ministry of Health and Population [Egypt], National Population Council and ORC Macro.
- El-Zanaty, F. and Way, A. (2006). *Egypt Demographic and Health Survey, 2005*. Cairo: Ministry of Health and Population, National Population Council, El-Zanaty and Associates, and ORC Macro.
- El-Zanaty, F. and Way, A. (2009). *Egypt Demographic and Health Survey, 2008*. Cairo: Ministry of Health and Population, National Population Council, El-Zanaty and Associates, and Macro International.
- Glanz, K., Rimer, B., and Viswanath, K. (2008). *Health Behavior and Health Education. Theory, Research, and Practice*, (4<sup>th</sup> edn. San Francisco: Jossey-Bass.
- Gumucio Dagrón, A. (2001). *Making Waves: Stories of Participatory Communication for Social Change*. New York: Rockefeller Foundation Report.
- Hammond, S.-E. (2005). Nice day for a mass wedding. *Egypt Today*, 26(11). Retrieved from www.egypttoday.com
- Health Communication Partnership. (2003). *The New P-Process. Steps in Strategic Communication*. Retrieved from [http://www.jhuccp.org/sites/all/files/The percent20New percent20P-Process.pdf](http://www.jhuccp.org/sites/all/files/The%20New%20P-Process.pdf)
- Hutchinson, P. (2010). Estimating causal effects from family planning health communication campaigns: An analysis of the “Your Health, Your Wealth” communication campaign in Menya Villages, Egypt. Paper presented at the Annual Meeting of the American Public Health Association, Denver, CO, November 7–10, 2010.
- Johns Hopkins University. (2005a). *Health Communication Partnership 2004–2005 Annual Report*. Baltimore: Johns Hopkins University.
- Johns Hopkins University. (2005b). Egyptian health program generates 8.5 million calls from TV viewers. Press Release. Baltimore: Johns Hopkins University.
- Kashan, A, Baker, P., and Kenny, L. (2010). Preterm birth and reduced birthweight in first and second teenage pregnancies: A register-based cohort study. *BMC Pregnancy and Childbirth*, 10(36) DOI: 10.1186/1471-2393-10-36.
- Kawachi, I., Kennedy, B. P., and Lochner, K. (1997). Long live community: Social capital as public health. *The American Prospect*, 8(35), 56–59.



- Khalil, K. and Roudi-Fahimi, F. (2004). *Making Motherhood Safer in Egypt*. MENA Policy Briefs. Washington, DC: Population Reference Bureau.
- Kickbusch, I. and Nutbeam, D. (1998). *Health Promotion Glossary*. Geneva: World Health Organization.
- Kincaid, D. L. (2004). From innovation to social norm: Bounded normative influence. *Journal of Health Communication*, 9 (Supplement 1), 37–57.
- Kincaid, D. L., and Figueroa, M. E. (2009). Communication for participatory development: Dialogue, collective action, and change. In L. Frey and K. Cissna (Eds.), *Handbook of Applied Communication* (pp. 506–532). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kotler, P. (1999). *Kotler on Marketing. How to Create, Win, and Dominate Markets*. New York: The Free Press.
- Kotler, P. and Lee, N. (2008). *Social Marketing. Influencing Behaviors for Good*, 3<sup>rd</sup> edn. Thousand Oaks, CA: Sage Publications.
- Lord, R. G. and Brown, D. J. (2004). *Leadership Processes and Follower Identity*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lozare, B. and Hess, R. (1993). *Improving Husband–Wife Communication on Family Planning through TV Drama – Pakistan*, Paper presented at the Annual Meeting of the Association for Public Health, San Francisco, CA, November, 1993.
- Meekers, D. and Nauman, E. (2006a). Effect of exposure to health communication activities on awareness of healthy behaviors in Menya, Egypt. Paper presented at the Annual Meeting of the American Public Health Association, Boston, MA. Retrieved from [http://apha.confex.com/apha/134am/techprogram/paper\\_141200.htm](http://apha.confex.com/apha/134am/techprogram/paper_141200.htm)
- Meekers, D. and Nauman, E. (2006b). Reach and impact of the Communication for Healthy Living (CHL) project in Menya, Egypt. Poster presented at the Annual Meeting of the American Public Health Association, Boston, MA. Retrieved from [http://apha.confex.com/apha/134am/techprogram/paper\\_140235.htm](http://apha.confex.com/apha/134am/techprogram/paper_140235.htm)
- Meekers, D. and El-Ghazaly, N. (2005). Smoking and attitudes toward smoking cessation in Menya Governorate, Egypt. Poster presented at the Annual Meeting of the American Public Health Association, Philadelphia, PA. Retrieved from [http://apha.confex.com/apha/133am/techprogram/paper\\_118010.htm](http://apha.confex.com/apha/133am/techprogram/paper_118010.htm)
- Ministry of Health and Population Egypt, El-Zanaty and Associates, and ORC Macro. (2003). *Egypt Service Provision Assessment Survey 2002*. Calverton, MD: Ministry of Health and Population, El-Zanaty and Associates and ORC Macro.
- Moser, C. O. (1993). *Gender Planning and Development: Theory, Practice, and Training*. London and New York: Routledge.
- Mousa, A., Ezz El Arab, G., and Rashed, E. (2009). Reaching women in Egypt: A success story. *Community Eye Health Journal*, 22(70), 22–23.
- PARC (Pan Arab Research Center) (n.d.). *Media Monitoring Reports*. Cairo: Pan Arab Research Center.
- Piotrow, P. T., Kincaid, D. L., Rimon, J. G., and Rinehart, W. E. (1997). *Health Communication: Lessons from Family Planning and Reproductive Health*. Westport, CT: Praeger.
- Putnam, R. D. (1993). The prospective community: Social capital and public life. *The American Prospect*, 13, 1–8.
- Putnam, R. D. (2001). *Bowling Alone. The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Population Council. (2010). *Survey of Young People in Egypt. Preliminary Report*. Cairo, Egypt: The Population Council.
- Robinson, W. and El-Zanaty, F. (2006). *The Demographic Revolution in Modern Egypt*. Oxford: Lexington Books.

- Rogers, E. (1983). *Diffusion of Innovations*, 3<sup>rd</sup> edn. New York: The Free Press.
- Rosenbaum, P. and Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70(1), 41–55.
- Rothschild, M. (1999). Carrots, sticks, and promises: A conceptual framework for the management of public health and social issue behaviors. *Journal of Marketing*, 63(4), 24–37.
- Salem, R., Bernstein, J., Sullivan, T., and Landa, R. (2008). *Communication for Better Health*. Population Reports, Series J, No. 56. Baltimore, MD: INFO Project, Johns Hopkins Bloomberg School of Public Health.
- Senge, P.M. (1994). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday.
- Soul Beat Africa. (2009). *Arab Women Speak Out (AWSO) – Middle East/North Africa*. Retrieved from <http://www.comminit.com/es/node/119815/38>
- Soul Beat Africa. (2010). *Mabrouk! Initiative*. Retrieved from [www.comminit.com/en/node/276306/38](http://www.comminit.com/en/node/276306/38)
- Stogdill, R. M. (1974). *Handbook of Leadership: A Survey of the Literature*. New York: Free Press.
- Storey, J. D., Kagawa, E., and Harbour, C. (2008). *Communication Pathways to Health Competence: Testing a Model in Egypt and South Africa*. Paper presented at the Annual Meeting of the International Communication Association, Montreal, Canada, May 22–26, 2008.
- Suzuki, C. and Meekers, D. (2008). Determinants of support for female genital circumcision among ever-married women in Egypt. *Global Public Health*, 3(4), 383–408.
- Tirmizi, S. A. (2002). The 6-L framework: A model for leadership research and development. *Leadership and Organizational Development Journal* 23, 269–279.
- Udjo, E. O. (1997). The effect of child survival on fertility in Zimbabwe: A micro-macro level analysis. *Journal of Tropical Pediatrics*, 43(5), 255–266.
- Underwood, C. R. and Jabre, B. (2008). Enabling women's agency: Arab women speak out. *Journal of Communication for Development and Social Change*, 2(2), 13–32.
- USAID, Office of Inspector General. (2006). *Audit of USAID/Egypt's family planning activities*. Audit Report No. 6-263-06-001-P (September 28, 2006). Cairo, Egypt: USAID/Egypt.
- USAID. (2009). *USAID Country Health Statistical Report: Egypt*. Washington, D.C.: USAID and Analysis, Information Management and Communication Activity (AIM) Project.
- Vignoli, D. (2006). Fertility change in Egypt. From second to third birth. *Demographic Research*, 5(18), 499–516.
- White, S. A. (1994). *The Concept of Participation: Transforming Rhetoric to Reality*. Participatory communication: Working for change and development. Newbury Park, CA: Sage.
- WHO (World Health Organization) (2006). *Constitution of the World Health Organization*. Retrieved from [http://www.who.int/governance/eb/who\\_constitution\\_en.pdf](http://www.who.int/governance/eb/who_constitution_en.pdf)
- WHO Regional Office for the Eastern Mediterranean (2006). *Egypt: Country Cooperation Strategy for WHO and Egypt, 2005–2009*. Cairo: World Health Organization, Regional Office for the Eastern Mediterranean.
- Youssef, H., Abdel-Tawab, N., Bratt, J. et al. (2007). *Linking Family Planning with Postabortion Services in Egypt: Testing the Feasibility, Acceptability and Effectiveness of Two Models of Integration*. Washington, DC: Population Council, FRONTIERS in Reproductive Health.