

Emphasis Behaviors in Maternal and Child Health:

Focusing on Caretaker Behaviors
to Develop Maternal and Child Health
Programs in Communities

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 **BASICS**

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Abstract

A multidisciplinary team of medical and behavioral specialists developed a list of sixteen emphasis behaviors that, if practiced by caretakers, could improve maternal and child health in communities. Criteria for identifying the emphasis behaviors included their impact on multiple disease areas, demonstrated relationship with mortality and morbidity, impact on the most important public health problems in developing countries, measurability, and their feasibility and cost effectiveness. The emphasis behaviors fall under five categories: (1) reproductive health practices, (2) infant and child feeding practices, (3) immunization practices, (4) home health practices, and (5) care-seeking practices. It is suggested that health managers choose which emphasis behaviors to focus on in their programs by reviewing existing community-based data. Following this selection process, they can develop and implement strategies appropriate for the local context, as well as monitor and evaluate results.

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Acronyms

ARI	acute (lower) respiratory tract infection
BASICS	Basic Support for Institutionalizing Child Survival
CDC	U.S. Centers for Disease Control and Prevention
CFR	case fatality ratio
CHW	community health worker
DHS	Demographic and Health Survey
EPI	Expanded Program for Immunization
ITN	insecticide-treated nets
KAP	knowledge, attitudes, and practices
MOH	Ministry of Health
MOI	missed opportunities for immunization
NGO	nongovernmental organization
ORS	oral rehydration solution
TBA	traditional birth attendant
TT	tetanus toxoid vaccine
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

In order to have a measurable impact on childhood morbidity and mortality in developing countries, public health programs need to focus on health-related behaviors, in particular the behavior of child caretakers. Many public health programs are facility-based.

Although health facilities will always play a crucial role in the provision of primary health care, programs need to move beyond the health facility in order to have a greater impact on child health.

The *Pathway to Survival* is a conceptual framework developed by the Basic Support for Institutionalizing Child Survival (BASICS) Project, U.S. Centers for Disease Control and Prevention (CDC), and U.S. Agency for International Development (USAID). The framework can assist with the development and monitoring of integrated child health programs. It highlights the need to focus on a number of household behaviors in order to have an impact on infant and child morbidity and mortality. There are also now good data available from many developing countries to suggest that at least 70 percent of all childhood mortality results from five major medical conditions: diarrheal diseases, acute lower respiratory tract infections (ARI), malnutrition, malaria, and measles. Because children often have multiple conditions at the same time, managing just one of these conditions may not prevent their death from other underlying conditions. Programs need therefore to focus on all five of the most common causes of morbidity and mortality.

The *emphasis behavior* concept has been developed for public health programs that want to improve child health in communities by changing caretaker behavior, but that do not have the resources to undertake extensive background research or to implement large and complex programs. A shortlist of sixteen emphasis behaviors was selected by a multidisciplinary team of medical and behavioral specialists. As will be described more fully, these behaviors were selected using the following criteria: broad public health importance through impact on multiple disease areas, demonstrated relationship with morbidity and mortality, impact on the most important public health problems in developing countries, measurability, and amenability to change through cost-effective public health programs.

As will be described in this publication, the process of applying the emphasis behaviors framework for bottom-up program planning involves three steps:

- First, health managers need to choose which of the sixteen emphasis behaviors to focus on in their program. They can do this by reviewing existing community-based data on caretaker knowledge, attitudes, and practices and on vaccination

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coverage rates, and by investigating the feasibility of implementing a program at the community level.

- Second, strategies appropriate for the local context need to be developed to target this subset of behaviors. This process involves: (i) identifying context-specific aspects of the behavior on which to focus, (ii) identifying target audiences, (iii) developing strategies to change emphasis behaviors in these target audiences, and (iv) identifying appropriate channels for the messages and developing the messages and materials.
- Third, a monitoring and evaluation plan is required. The subset of behaviors selected by community programs can form the basis for simple program objectives and indicators.

Overall, it is hoped that an approach that focuses on a limited number of caretaker behaviors will allow local-level health managers and planners to develop cost-effective programs in communities.

1. The Pathway to Survival: Recognizing the Importance of the Household

In order to have a measurable impact on childhood morbidity and mortality in developing countries, public health programs need to focus on health-related behaviors, in particular the behavior of child caretakers. Many public health programs are facility-based, because facilities provide an organized structure, a recognizable system, and trained health workers. Health facilities often, however, see only a small proportion of all sick children in a community and are therefore unable to have an impact on overall childhood morbidity and mortality. In order to have a greater impact on child health, programs must improve the management of children in the home by their caretakers and families. Although health facilities will always play a crucial role in the provision of primary health care, programs need to move beyond the health facility. The Basic Support for Institutionalizing Child Survival (BASICS) Project, U.S. Centers for Disease Control and Prevention (CDC), and U.S. Agency for International Development (USAID) have developed a conceptual framework, called the *Pathway to Survival*, to assist with the development and monitoring of integrated child health programs. This framework (see Figure 1) outlines the key steps from a child being well, first developing an illness, and then surviving the illness (Waldman et al. 1996). A substantial component of the Pathway takes place at the level of the home and the community. In the home, the following key areas have an effect on the quality of health care provided to children:

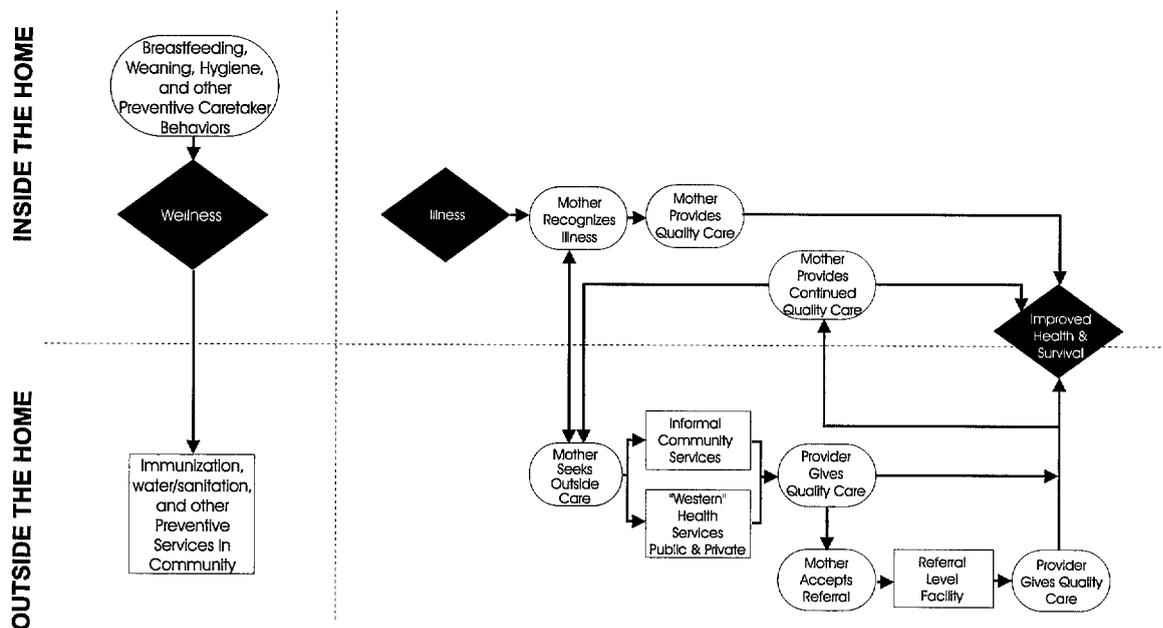
- **Prevention of illness in well children:** A number of simple strategies have been demonstrated to prevent childhood illness, including breastfeeding, appropriate complementary feeding practices, basic hygiene practices (hand washing), and receiving a full course of infant vaccines in the first year of life. Delaying the first pregnancy, birth spacing, and limiting family size have been demonstrated to reduce the likelihood of infant and child death.
- **Recognition of illness when children become ill:** In order to appropriately manage a sick child, caretakers must recognize when the child is ill.
- **Seeking care from an appropriate provider outside of the home:** When necessary, caretakers must seek care from an appropriate health-care provider (one who will provide quality care) before the child is severely sick and at high risk of death. Health workers must provide quality care, including instructing caretakers how to take medication and when to return for follow-up.

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- **Providing quality care to sick children in the home:** Caretakers must be able to correctly manage their own children in the home, whether they have sought care from a health-care provider or not. For example, caretakers should be able to correctly administer appropriate medications and oral rehydration fluids and to give fluids and food appropriately both during and after an illness.

The *Pathway to Survival* (see below) highlights the need to focus on a number of household behaviors in order to have an impact on infant and child morbidity and mortality. Preliminary data from Bolivia, for example, indicate that only 40 percent of caretakers of sick children recognized that their children were ill, with just 1 percent of these caretakers managing their children appropriately in the home (Aguilar-Liendo et al. 1997). In order to improve both the prevention and management of childhood illness in the home, the behavior of the caretakers and families responsible for young children must be changed.

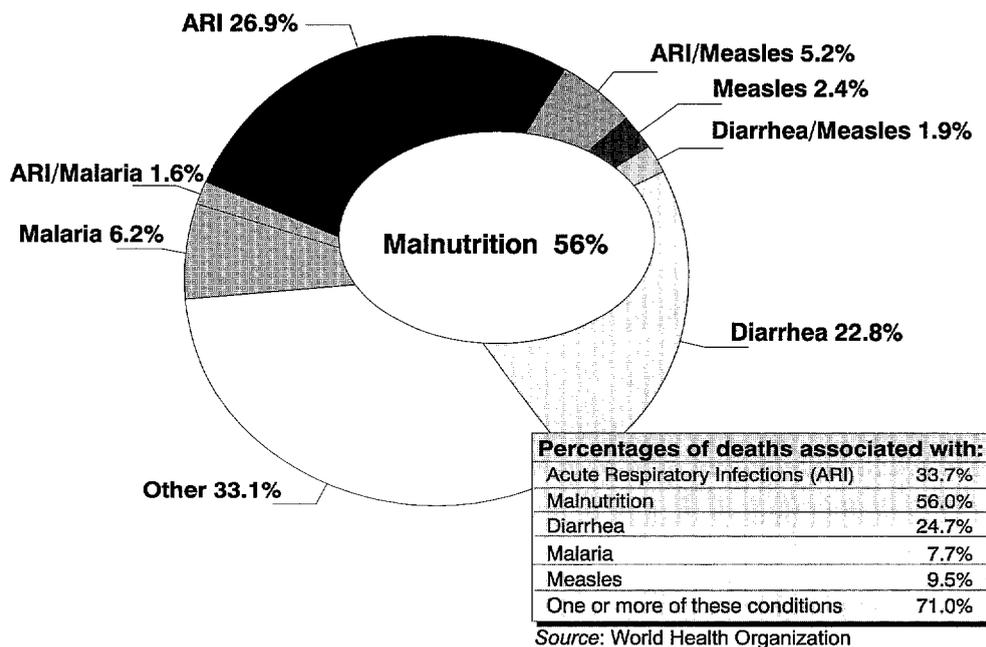
Figure 1. Pathway to Survival



2. Emphasis Behaviors: Prioritizing Household Behaviors to Develop Public Health Programs

Good data available from many developing countries now suggest that at least 70 percent of all childhood mortality is the result of five major conditions: diarrheal diseases, acute lower respiratory tract infections (ARI), malnutrition, malaria, and measles (see Figure 2). The evidence suggests that children often have multiple conditions at the same time; managing just one of these conditions may not prevent death from other underlying conditions. In addition, there is a great deal of evidence that malnutrition, even mild malnutrition, can increase the likelihood of mortality from a number of different disease entities (Pelletier et al. 1993, 1995). In order to improve the health of children in developing countries, therefore, programs need to focus on all five of the most common causes of morbidity and mortality, including malnutrition, at the same time.

Figure 2. Distribution of 12.2 million deaths among children less than 5 years old in all developing countries, 1993



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Three important considerations are involved in designing approaches to changing the health behaviors of caretakers in the home. The first consideration is whether or not changing the behavior is likely to have a significant impact on childhood morbidity and mortality. There are now good epidemiological data from a number of developing country settings that have allowed the identification of caretaker behaviors that are likely to play an important role in child health. The second consideration is the feasibility of making a change in a given behavior in practice; some

behaviors have proved difficult to change, others can be changed in the short term but cannot be sustained. Programmatic experience from a number of settings has allowed the identification of those behaviors which may be more difficult to change than others. The third consideration is the resources available for program activities at the household and community level. Governments, communities, and households have limited resources, and programs must therefore endeavor to maximize the impact for every dollar spent. Behavioral interventions should strive to be cost-effective and to maximize results with the available resources.

The *emphasis behavior* concept has been developed for public health programs that want to improve child health in communities by changing caretaker behavior, but that do not have the resources to undertake extensive background research or to implement large and complex programs. Emphasis behaviors (see Box 1) are those caretaker behaviors that have already been demonstrated to have a public health impact and that can be feasibly changed in a relatively cost-effective manner.

Box 1 Understanding Terminology

Behavior: An action or set of actions that an individual carries out at a specific time.

Emphasis Behavior: A behavior that should be emphasized through program interventions because of its impact on public health, its measurability, and its feasibility to be performed by caretakers and/or health workers.

Caretaker: An individual who has primary responsibility for the care of a child. Often, it is the child's mother, but could also be his or her father, grandparent, older sibling, or other member of the community.

3. Criteria for Selection of Emphasis Behaviors

A multidisciplinary team of medical and behavioral specialists selected a shortlist of emphasis behaviors by developing and considering five criteria. Emphasis behaviors should—

- have broad public health importance by having an impact on multiple disease areas,
- have been well documented to reduce childhood morbidity and mortality,
- have an impact on the most important health problems in developing countries,
- be measurable,
- be changeable by public health interventions already demonstrated as feasible and cost-effective.

These criteria were based both on epidemiological and programmatic considerations. In applying the criteria, it was acknowledged that not all would be equally applicable to every emphasis behavior. The use and maintenance of insecticide-treated bednets (ITNs), for example, will prevent malaria, but not affect any of the other important causes of childhood morbidity and mortality. This behavior was included because malaria is an important public health problem in many developing country settings and ITNs have been documented to be a potentially effective intervention for widespread use. Similarly, extending the duration of exclusive breastfeeding has been demonstrated to have an important public health impact, even though the development of breastfeeding promotion programs for large populations is not always cost-effective or easily sustainable. Nevertheless, strategies to achieve large-scale shifts in breastfeeding are improving and show promise for the future.

A final list organizes sixteen emphasis behaviors into five categories: (1) reproductive health practices (2) infant and child feeding practices; (3) immunization practices; (4) home health practices; and (5) care-seeking practices. Each of these categories is believed to be important in order to maximize program effectiveness. Some overlap exists among these categories, but it was felt important programmatically to separate home-feeding and immunization practices from other categories of household behavior in order to highlight their importance.

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The emphasis behaviors are presented by category in Table 1. A technical justification for each behavior is given in Annex A.

Table 1. The Emphasis Behaviors

REPRODUCTIVE HEALTH PRACTICES: Women of reproductive age need to practice family planning and seek antenatal care when they are pregnant.

1. For all women of reproductive age, delay the first pregnancy, practice birth spacing, and limit family size.
2. For all pregnant women, seek antenatal care at least 2 times during the pregnancy.
3. For all pregnant women, take iron tablets.

INFANT AND CHILD FEEDING PRACTICES: Mothers need to give age-appropriate foods and fluids.

4. Breastfeed exclusively for about 6 months.
5. From about 6 months, provide appropriate complementary feeding and continue breastfeeding until 24 months.

IMMUNIZATION PRACTICES: Infants need to receive a full course of vaccinations; women of childbearing age need to receive an appropriate course of tetanus vaccinations.

6. Take infant for measles immunization as soon as possible after the age of 9 months.
7. Take infant for immunization even when he or she is sick. Allow sick infant to be immunized during visit for curative care.
8. For pregnant women and women of childbearing age, seek tetanus toxoid vaccine at every opportunity.

HOME HEALTH PRACTICES: Caretakers need to implement appropriate behaviors to prevent childhood illnesses and to treat them when they do occur.

Prevention

9. Use and maintain insecticide-treated bednets.
10. Wash hands with soap at appropriate times.
11. For all infants and children, consume enough vitamin A.
12. For all families, use iodized salt.

Treatment

13. Continue feeding and increase fluids during illness; increase feeding immediately after illness.
14. Mix and administer ORS, or appropriate home-available fluid, correctly.
15. Administer treatment and medications according to instruction (amount and duration).

CARE-SEEKING PRACTICES: Caretakers need to recognize a sick infant or child and need to know when to take the infant or child to a health worker or health facility.

16. Seek appropriate care when infant or child is recognized as being sick (i.e., looks unwell, not playing, not eating or drinking, lethargic or change in consciousness, vomiting everything, high fever, fast or difficult breathing).
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4. Using Emphasis Behaviors to Develop Primary Health Care Programs

Emphasis behaviors can provide a framework for bottom-up program planning. A focus on changing these emphasis caretaker behaviors can direct local health planners as they develop strategies to improve child health in communities. Changes in behaviors can then be used as targets or goals for monitoring program performance. Three steps are involved in applying this approach. First, health managers need to choose which of the sixteen emphasis behaviors to focus on in their program. Second, strategies appropriate for the local context need to be developed and implemented to target this subset of behaviors. Third, a monitoring and evaluation plan is required. These three phases of program development using emphasis caretaker behaviors are further discussed below.

In thinking through how to address the selected emphasis caretaker behaviors, it is important to understand that individual caretakers live in communities, and that these communities—including their members, health workers, norms, institutions, and policies—influence whether and how caretakers perform these behaviors. For example, although caretakers are responsible for bringing infants to a health facility to be immunized against measles, health workers are responsible for administering the vaccine. Both caretaker and health worker beliefs and behaviors about immunization will influence whether or not an infant receives the measles vaccine. Similarly, a community's social norms regarding exclusive breastfeeding are likely to influence whether a mother in that community will give supplemental fluids to a 3-month-old child. Although further discussion of these issues is beyond the scope of this document, health planners need to be aware of the multiple factors that will affect individual caretaker implementation of the emphasis behaviors. A program that addresses these multiple factors is more likely to succeed than one that does not.

Prioritizing Emphasis Behaviors

Although it is important to address each of the five *categories* of emphasis behaviors in a long-term public health strategy, it is not necessarily appropriate or feasible to address all sixteen emphasis behaviors at the same time. A first step in the prioritization of caretaker behaviors should be to review existing community-based data on caretaker knowledge,

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attitudes, and practices and on vaccination coverage rates. Most community data in developing countries are collected using cross-sectional surveys which collect household information by using structured questionnaires to interview caretakers. Examples of this type of survey include Demographic and Health Surveys (DHS), World Health Organization (WHO) household surveys, and UNICEF multi-indicator surveys. In addition, nongovernmental organizations (NGOs) and ministries of health (MOH) sometimes conduct household surveys in smaller geographic areas for the purposes of local planning. A review of existing data will establish a picture of current caretaker practices. If the vaccination coverage rates for infants are already documented to be high, then immunization-seeking behavior may not be a first priority. Similarly, if infants and children are already receiving vitamin A supplementation regularly, or if families are routinely using iodized salt, then these behaviors may not require immediate attention.

A second step in the prioritization of emphasis behaviors is to investigate the feasibility of implementing a program at the community level. Again, a review of existing data on community-based communication programs will identify previously successful approaches and resources required to implement these strategies. Different communities often have different sets of resources, communication channels, and cultural norms and beliefs. Data of this type may be available from ministries of health or from local NGOs. For each emphasis behavior, it is important to review the following information:

- **The feasibility of changing the behavior.** Sociocultural and economic conditions in which households operate may influence whether or not a caretaker can implement a behavior. Community members may perceive some health behaviors as less important than others.
- **The resources available to implement a program.** Different program strategies will require different resources. The relative costs of mass campaigns and the use of formal and informal health providers and community groups should be carefully reviewed. The longer-term availability of resources to sustain program activities is an important consideration. Resources may be available from communities and households as well as from outside sources.
- **The local capacity to implement the program.** Certain activities rely on trained health workers at health facilities, as well as in the community (including community health workers (CHWs) and traditional birth attendants (TBAs)). Community-based groups (mothers' associations, churches, traditional healers, and private drug vendors, for example) and/or other organizations may be essential to support program activities. Health systems and structures must be functioning adequately to provide contraceptive services or deliver immunizations and to provide case management for sick children. In order to focus on

immunization and care-seeking behaviors, clinics must be available and functioning with a steady supply of essential drugs and viable vaccines.

In some cases, no community-level data are available on communication or health education programs and it may be necessary to collect information. Several methods for collecting qualitative and quantitative community data are available. A method that collects information on the emphasis behaviors is currently being developed (see Bhattacharyya and Murray 1997, Annex D). A review of lessons learned from previous activities, and, if necessary, supplemental field observations should allow the prioritization of a list of emphasis behaviors tailored to local needs and resources. Because most of the emphasis behaviors are practiced in the home, the ability of household members to carry out the behaviors appropriately over time should be of primary importance.

In order to prioritize the emphasis behaviors, systematic ranking procedures can be used. The instruments presented in Annexes B and C are designed to allow behaviors to be ranked quantitatively according to specific criteria (Graeff et al. 1993). The first instrument uses simple programmatic criteria, while the second focuses on behavioral elements that influence the feasibility of changing each behavior. Those behaviors with the highest ranks are selected as priority behaviors.

Box 2
Choosing among Emphasis Behaviors:
An Example of Prioritization

In reviewing the list of sixteen behaviors, the Ministry of Health (MOH) in Country X used the list in the following way. Its EPI program had achieved fairly high coverage rates for children, but had low *tetanus toxoid coverage rates for women of childbearing age*. While working to maintain its high coverage among children, the EPI program decided to intensify its efforts to immunize women with tetanus toxoid in high risk areas. Looking further down the list of emphasis behaviors, the MOH noted that *facilitating use of insecticide-treated bednets* fell outside of the Ministry's domain and therefore could not be readily incorporated into the current child survival program. On the other hand, the MOH felt strongly that its various health facilities and staff were ready to respond to the greater demand created by promoting *care-seeking behaviors*. It therefore wanted to put top priority on the improvement of care-seeking practices for sick children, especially since these behaviors cut across multiple disease areas. In this way, the list of emphasis behaviors was modified to fit the concerns and capabilities of Country X.

Developing Strategies to Target the Emphasis Behaviors

Approaches to changing the selected child health behaviors must be tailored to local community conditions. The following steps need to be considered in order to develop effective behavior-change strategies (Graeff et al. 1993; HEALTHCOM 1995, listed in Annex D):

1. Identify context-specific aspects of the behavior on which to focus

Specific behaviors can often be broken down into subcomponents. Not all of these subcomponents will be equally important. For example, if most mothers in a community initiate exclusive breastfeeding, but then introduce complementary foods to their infants at 3 months of age, then a program that focuses on the initiation of breastfeeding would not be effective. Instead, the program should focus on delaying the introduction of complementary foods. A behavior may not be practiced because caretakers do not know how to do it or because other factors may prevent them from doing it. It is often useful for programs to focus on those aspects of the behavior that pose barriers to its adoption. For example, although soap is often available to families, it is often not used for hand-washing. An effective program might develop strategies to address barriers to hand-washing, such as the availability of water.

2. Identify the target audiences

If the ultimate goal of the program is to change specific caretaker practices, then a decision must be made how best to reach this group. Consideration should be given to identifying caretakers at highest risk, such as people living in rural areas, with less education, or living in communities with traditional practices that may have adverse health consequences. In addition, consideration should be given to targeting other groups and individuals who are critical in determining caretaker behavior in the home, such as other family members (husbands, grandmothers), community leaders, teachers, and church organizations. If, for example, mothers are greatly influenced by their own mothers in deciding whether or not to give supplementary foods to their infants, then it is important that a communication program target grandmothers as well as mothers.

3. Develop strategies to change emphasis behaviors in target audiences

A variety of approaches can be used to change the behavior of caretakers of young children. The selection of strategies will depend on the existing structures and resources available in the community, the likelihood that the approach will be effective, and the cost and sustainability of the approach. Mass campaign strategies (usually using print or

broadcast media) can reach large populations, but the relative effectiveness of these strategies may be reduced in populations without access to television or radio. Strategies using the formal health system can train first-level health workers and community health workers (CHWs or TBAs) to communicate information to caretakers when they visit health facilities or during community visits, and to guide caretakers in changing their behavior. By using existing health workers, this approach can be less expensive, can help build the capacity of local health services, and can establish an improved rapport with communities. Strategies that use the formal health sector will, however, only be able to reach a limited proportion of the total population at risk. Strategies that utilize the informal health sector, such as private providers, rural drug vendors, or traditional healers, can increase the reach of health promotion activities. Changing the practices of these groups can often be difficult, however, and maintaining the quality of services for a group that lies outside of the formal health sector is often challenging. Strategies that use other existing community groups can also be effective and relatively inexpensive. A number of such groups have been used successfully in behavior change strategies, including churches, schools, women's organizations, youth organizations, community associations, and local theater groups. In order to

Box 3
Adapting Emphasis Behaviors
to Local Conditions:
An Example of Poor Careseeking

Local Conditions

Country Y identified a subset of key behaviors that included improving care-seeking practices. Existing household survey data showed that caretakers did not seek care for sick children until the child was very sick. Children with persistent fever, for example, were usually not brought to the clinic until late in the illness. Health officials assumed that the reason why caretakers did not seek care earlier for children with fever was because they could not recognize the signs of a very sick child. Qualitative research to explore this hypothesis, however, found that caretakers do recognize the signs of a sick child, but they seek other non-clinic care first, including from a variety of traditional health care providers.

Program Strategies

Given this information, the health planners shifted their focus from increasing the knowledge of caretakers to working on some of the barriers to seeking facility-based care discovered by the research. Program strategies included identifying appropriate home strategies for controlling fever (tepid bathing, antipyretics) and encouraging health workers to recommend these strategies for children with fever; working with traditional health care providers to encourage them to recommend strategies for controlling fever and to refer very sick children to the health facility; and encouraging caretakers to seek care from a health facility as soon as they recognize signs of severe illness in their child.

Program Objectives

Objectives for the program included to increase the proportion of caretakers referred to the health facility by a traditional care giver and to increase the proportion of caretakers seeking care from a health facility shortly after they first recognize signs of severe illness in their child.

maximize the impact on behavior, a number of different strategies can be used in the same community.

4. Identify appropriate channels for messages; develop messages and materials

The identification of communication strategies in the previous step will determine the channels to be used. A channel is a means of getting a message across to audiences (usually interpersonal, broadcast, or print). Messages and materials designed to change the emphasis behaviors will need to be adapted for different channels. Changing the practices of health providers and community groups will require training approaches that are tailored to their skills, roles, and responsibilities and that provide skills that they can apply during their routine practice. Materials to support health promotion activities also have to be appropriate for the educational and cultural characteristics of the target population. In some communities, visual messages are more effective than written ones; in others, verbal communication and discussion are more effective than written materials.

In order to develop messages and materials appropriate for the target groups, some qualitative information is required on current caretaker and community beliefs and practices related to the selected emphasis behaviors. Qualitative information can be collected using various methods, such as in-depth interviews, focus groups, direct observation, and surveys. Qualitative data of this type are often available in countries with a history of primary health-care programs. Existing data should be used whenever possible. Qualitative data can be quickly and easily collected, if necessary, using ad hoc discussions with key community members focusing on certain aspects of the emphasis behavior. Although it is beyond the scope of this document to discuss information-gathering approaches in detail, references to pertinent manuals and guides are included in Annex D.

Table 2 summarizes some of the most important questions that need to be answered in order to adapt the emphasis behaviors to the local context.

Strategies, materials, and methods need to be incorporated into an implementation plan. As much as possible, implementation should use existing household, community, and facility resources and should build on ongoing activities.

Table 2. Key Questions for Adapting Emphasis Behaviors

Who is implementing the emphasis behavior?

Who is not implementing the emphasis behavior?

Why are some people not implementing the emphasis behavior?

What are current behaviors that most closely approximate the emphasis behavior?

What is the subset of behaviors involved in implementing the emphasis behavior?

Who has influence on people doing the emphasis behavior?

What other factors (beliefs, social norms, laws, resources, etc.) have influence on people doing the emphasis behavior?

What barriers exist to people doing the emphasis behavior?

How can these barriers be removed?

How do people learn new information in the community (e.g., word of mouth, radio, television, town or religious meetings, from community health)?

Monitoring and Evaluating Behavior Change Programs

A monitoring and evaluation plan is critical for determining whether or not interventions targeted at changing caretaker practices have been effective. Measuring changes in the emphasis behaviors may be the only practical method to follow progress towards improving child health, because impact (reductions in mortality and morbidity from childhood diseases) can often only be demonstrated over a period of several years using large-scale surveys. However, by assuming that improved caretaker practices will have an impact on infant and child morbidity and mortality, we can demonstrate child survival

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program effectiveness using simple and rapid techniques. Regular monitoring of program performance can be used to change or improve interventions that may not be working.

The emphasis behaviors selected by community programs can form the basis for simple program objectives and indicators. For example, a program focusing on improving immunization practices might define a program objective and indicator as follows:

- **Objective:** Seventy-five percent of caretakers know at least two signs for seeking care when a child is sick.
- **Indicator:** The actual proportion of caretakers who know at least two signs for seeking care when a child is sick.

The most common method used to measure changes in caretaker knowledge and practice is a household survey, in which a structured interview is administered to a random sample of the population targeted by the program. This approach attempts to measure the proportion of the caretaker population that is practicing each emphasis behavior. Baseline and follow-up surveys can be administered in communities to measure changes in emphasis indicators over time. In addition, surveys can be conducted in communities not targeted by the program, in order to compare their health behaviors to the health behaviors of those who participated in program activities. Differences between baseline and follow-up results will tell program planners whether caretakers have changed their behaviors and whether objectives have been met. Evaluation results can also help determine how to develop and focus interventions in order to maximize program effectiveness. There is an increasing emphasis on the development of simple survey methods that can be used in communities by local health staff for the purposes of program monitoring. These approaches are simple, rapid, and can be conducted using local resources. Resources that explain some of these methods are listed in Annex D.

Annex A: Technical Justification for Emphasis Behaviors

Reproductive Health Practices

For all women of reproductive age, delay the first pregnancy, practice birth spacing, and limit family size

Babies born less than 2 years after the previous child are at least twice as likely to die in the first year of life as those born after an interval of at least 2 years. Even if these infants survive the first year, they are 1.5 times more likely to die before age 5 than children whose births were spaced at least 2 years apart (Bohler 1994; Alam 1995; Shane 1997). Closely spaced pregnancies increase the chances of women having low birth weight babies, increase competition for limited resources between siblings (mothers may be more likely to discontinue breastfeeding early, for example), and increase the risk of the transmission of infectious diseases (National Research Council 1989). The age of the mother is an important risk factor for infant and child mortality. In the developing world, an average of approximately 40 percent of women give birth before the age of 20. Children born to mothers under 20 years of age are approximately 1.5 times more likely to die before their first birthday than children born to mothers in their 20s. Babies born to young mothers are more likely to be premature, to have low birth weights, and to have delivery complications (McDevitt et al. 1996). In addition, young mothers are less likely to have social and economic supports required to maintain the health of their children. Children born to mothers over the age of 40 and fourth-born or later children are also at a higher risk of death for a number of reasons, including an increased likelihood of congenital abnormalities and an increased likelihood of closely spaced births.

Pregnant women are also at increased risk of death. Approximately 1 in every 48 women in a developing country is at risk of dying from a pregnancy and childbirth-related complication (WHO and UNICEF 1996). The most common causes of death include hemorrhage after birth or following an unsafe abortion, infection, hypertensive disorders, and obstructed labor.

The most effective strategy for planning and limiting the number of pregnancies is the use of contraception. Women need to understand, seek, and use effective contraceptive methods, which may include oral contraceptives; injectable and subdermal implants; intrauterine devices; barrier methods such as condoms, diaphragms, and spermicides; natural methods of family planning (including the lactational amenorrhoea method); and

male and female sterilization. All of these methods have been used by women in developing countries and there is some evidence that there is a growing demand for contraceptive services. Programmatic interventions need to take into consideration the role of men, religion, and social and ethnic norms and beliefs in order to be effective (Shane 1997).

For all pregnant women, seek antenatal care at least 2 times during pregnancy

It is important that pregnant women receive antenatal care in order to reduce the likelihood of maternal and infant mortality. Antenatal visits provide an opportunity to conduct a simple assessment of the mother, to provide preventive care, and treatment when required, and to instruct the mother in home-based strategies for improving the survival of herself and the child (WHO/FRH 1994). A history and physical examination are required to detect women at high risk of complications including anemia and eclampsia; in some countries this assessment includes screening for syphilis. Antenatal visits provide an opportunity to immunize the mother against tetanus (see the immunization section) and to administer iron and folic acid (see below), which have been well-documented to reduce neonatal and infant mortality. In some countries, when required, antenatal visits provide an opportunity to provide malaria prophylaxis and treatment for intestinal parasites. Health education on topics such as appropriate nutrition during pregnancy, the signs and symptoms of complications, birth practices, and family planning/birth spacing can also be given during antenatal visits, all of which can help reduce maternal and infant morbidity and mortality (Koblinsky 1995). There are two principal barriers to the effective provision of antenatal services in developing countries. The first of these is lack of access (geographic, economic, or social) to health services. The second is poor quality of antenatal services because of a lack of trained and motivated health staff. A number of programmatic strategies have been investigated in developing countries and need to be tailored to the individual circumstances (Winnard 1995; Kwast 1995; Alisjhabana et al. 1995).

For all pregnant women, take iron tablets

Iron deficiency anemia is the world's most common nutritional deficiency. It affects pregnant and lactating women in particular, as well as children under 3 years of age (ACC/SCN 1991). Anemia in mothers predisposes to stillbirths, neonatal mortality, and low birth weight in children and increases the risk of maternal mortality (Walsh et al. 1993). Anemic mothers are also less likely to implement routine child care tasks or engage in activity requiring energy expenditure because of the debilitating effects of iron deficiency on aerobic capacity and productivity (Stoltzfus 1994). Supplementation with ferrous sulphate tablets (including folic acid) at a level of 60 to 120 milligrams of elemental iron per day during the last two trimesters of pregnancy is a low-cost

intervention currently reflected in health policies in most countries (Levin et al. 1993; McGuire and Galloway 1994).

Infant and Child-Feeding Practices

Breastfeed exclusively for about 6 months

Relative to infants who are exclusively breastfed (defined as an infant who is given no liquid or solid other than breastmilk), infants not breastfed at all have at least 14 times the risk of death due to diarrhea. The risk is greatest in the first two months of life. Risk of death from respiratory disease is 4 times greater, and for other infections, 2.5 times greater for non-breastfed infants as compared with those exclusively breastfed (Victora et al. 1987; Feachem and Koblinsky 1984).

Data from Bangladesh, Brazil, Peru, and the Philippines show that premature supplementation of breastfeeding is associated with greater risk of diarrheal morbidity and death. Even the introduction of herbal teas and water to exclusively breastfed infants increases the risk of diarrheal morbidity and death. Introduction of other foods and fluids decreases the amount of breastmilk supply, thus decreasing nutritional intakes; complementary foods also decrease the absorption of iron contained in breastmilk. Complementary foods most commonly used in low-income households rarely compensate for the nutrients in the breastmilk displaced. Health workers need to be careful not to counsel mothers to introduce supplements prematurely.

There are good programmatic data to suggest that breastfeeding practices can be improved in a number of populations and that improving exclusive breastfeeding practices can reduce infant morbidity and mortality, in particular from diarrhea (Winikoff and Baer 1980; Mata et al. 1981; Brown et al. 1990; Popkin et al. 1990; Victora et al. 1989).

New data suggest that HIV/AIDS can be transmitted through breastmilk in a small proportion of infants. WHO is developing guidelines for counseling pregnant women who are confirmed HIV-positive (UNAIDS/WHO 1996).

From about 6 months, provide appropriate complementary feeding and continue breastfeeding until 24 months

Breastmilk alone does not provide all nutrients needed by an infant over 6 months of age (Scrimshaw et al. 1996). Behavioral research also suggests a developmental "readiness" in infants around 6 months to take semi-solids, as well as physiological evidence that the gastrointestinal tract is mature enough to handle a diversity of foods.

For complementary foods to be of appropriate caloric and nutritional value, however, most staple foods in developing countries (wheat, millet, corn, rice, cassava) need to be

enriched. Ingredients with high nutrient-to-calorie and calorie-to-volume values can be found in local environments. Reducing the water content and introducing animal foods, fats, oilseeds, nuts, legumes, and varied fruits and vegetables to the staple diet improve nutritional density.

Continuing to breastfeed while introducing complementary foods is also important (Dewey et al. 1996). Breastmilk accounts for a substantial proportion of fat, vitamin A, calcium, and quality protein in the second year of life. Absence of frequent and sustained breastfeeding is a significant risk factor for vitamin A deficiency. Children who remain breastfed are 65 to 90 percent less likely to develop deficiency signs (Sommer and West 1996).

Immunization Practices

All immunization practices are seen in the context of broad-based immunization programs which would focus on delivering all recommended antigens (usually BCG, OPV 1, 2, 3, and DPT 1, 2, 3) in the first year of life.

Take infant for measles immunization as soon as possible after the age of 9 months

Measles is an important cause of morbidity and mortality in developing countries, and is still responsible for approximately 1 million child deaths a year. The measles case fatality ratio (CFR) ranges from 3 percent to 11 percent and is highest in young infants and the malnourished. Infection with the measles virus has an immunosuppressive effect and can make infants and children more susceptible to other common childhood infections, especially diarrhea, ARI, and ear infections. Measles infection has been demonstrated to be associated with vitamin A deficiency, which is partially responsible for measles mortality. Vitamin A treatment of children with measles can reduce the CFR. The measles vaccine has been well documented to be an effective preventive strategy as a component of a comprehensive vaccination program in both developed and developing countries. For a full summary of measles epidemiology, see "Measles control in the 1990s: principles for the next decade" (WHO/EPI 1990).

This emphasis caretaker behavior supports the standard EPI vaccination schedule. Immunization for measles should be given as soon as possible after the child completes nine months of life to avoid the risk of infection by the wild measles virus. The virus infects virtually every child who is not protected by immunization. Programmatically, this behavior is worth singling out because many health workers mistakenly think that measles vaccination must follow vaccination for all other EPI diseases chronologically.

This is not so. The key determinant is the age of the child. While measles is the final antigen to be given according to the vaccination schedule, if other doses of vaccine have been given late or not at all, there is no need to delay vaccination against measles. In those countries with established immunization programs and where data show that measles is indeed the last dose of vaccine to be given (coverage survey data can provide this information), then measles immunization at nine months represents timely completion of the vaccination schedule. On the other hand, in countries where participation in immunization is low, it is important to pair this one caretaker behavior with the health worker practice of reducing missed opportunities. This behavior, then, can be an important indicator of program effectiveness. Coverage surveys or routine administrative data can be used to determine measles immunization coverage levels at 9 months of age (WHO/EPI 1990, 1995.)

Take infant for immunization even when child is sick. Allow sick infant to be immunized during visit for curative care.

Many parents and health workers mistakenly believe that sick children should not be vaccinated, either out of fear that the child will become sicker or that the vaccination will not be effective. Thus, many children of appropriate age are not vaccinated when they visit a health facility. These missed opportunities for immunization (MOI) are a major contributor to low vaccination coverage rates. A recent international survey of MOI reviewed 79 MOI studies in 45 countries. MOI occurred in all but one of the studies. One of the most important reasons for MOI was that health workers and parents believed in false contraindications to immunization, such as the belief that a mildly ill child cannot be immunized. The study authors emphasized the need for health workers to immunize children suffering from malnutrition, low grade fever, mild ARI, diarrhea, and other illnesses. It is important that the corresponding health worker behavior be carried out, so that both caretakers and health workers can play a role in minimizing MOIs (WHO/EPI 1992).

Data on missed opportunities to immunize sick children are frequently available from the standard KAP questionnaire that is conducted at the same time as an EPI coverage survey. The exact decrease in coverage due to MOI varies widely from country to country but can be extracted from coverage survey data. Strategies to reduce MOI must identify the local beliefs and practices that prevent vaccination from taking place. Examples of the type of perceived barriers to immunization have been collected from many countries (WHO/EPI 1992).

For pregnant women and women of childbearing age, seek tetanus toxoid vaccine at every opportunity

Neonatal tetanus still kills some five- to six-hundred-thousand newborns each year. The disease can be effectively prevented by using clean delivery practices and/or by protecting the mother by immunizing her with tetanus toxoid (TT) vaccine. Despite the availability of an inexpensive and safe vaccine, TT coverage levels in women of childbearing age are often far lower than child immunization levels. This problem is compounded by the inability of coverage figures to accurately indicate levels of immunity (WHO/VRD 1995). Women can be immunized at any time during the childbearing years, although immunization programs often do not take advantage of this long window of opportunity. In many countries the correct immunization schedule for TT often is not clearly established. A very high rate of missed opportunities to vaccinate with TT is often seen, especially when mothers may be coming to health facilities to have their children immunized (WHO/EPI 1995).

A TT promotion program should improve the behavior of both health workers and women. Health workers should screen any woman coming to a health facility for any reason to determine her TT status, immunize her if required, and record the dosage. Programs focusing on women in communities should increase their awareness of the importance of the TT vaccine and encourage them to ask for it whenever possible (WHO/EPI 1994).

Home Health Practices

Prevention

Use and maintain insecticide-treated nets

Malaria is one of the three leading causes of morbidity and mortality in the developing world. Malaria accounts for 1.5–2.7 million deaths annually, an overwhelming proportion of them in Africa. In Africa, malaria accounts for about 25 percent of all childhood mortality below 5 years of age, excluding neonatal mortality (WHO 1994).

Increasing *Plasmodium falciparum* resistance to chloroquine in many malaria-endemic areas and the unavailability of alternative antimalarial agents in developing countries has fueled the investigation of insecticide-treated nets (ITN) as a malaria prevention strategy. More than 20 studies in malaria-endemic areas have tested the impact of ITNs on mortality and morbidity due to malaria. The studies document a reduction of 20–63 percent (median, 45 percent) in malaria disease rates following introduction of ITNs. A 63 percent reduction in all mortality in children from 1 to 4 years old has been reported in an area using ITNs (Alonso et al. 1993; Lengeler et al. 1996). The efficacy of ITNs varies

considerably with the type of mosquito vector present and the degree of malaria endemicity.

Reductions in morbidity and mortality rates have usually been achieved under controlled conditions. One of the most important implementation problems is ensuring the regular reimpregnation of nets with insecticide. The question remains as to whether widespread and sustained community use of ITNs will become a cost-effective public health intervention, and efforts are now focusing on trials that measure the *effectiveness* of ITNs, rather than their *efficacy* (D'Alessandro et al. 1995; Kroeger et al. 1995; Lengeler and Snow 1996; Sexton 1994).

Wash hands with soap at appropriate times

A number of studies have demonstrated that improving hand-washing practices with soap and an adequate volume of water can reduce overall diarrheal disease morbidity by 30–50 percent (Khan 1982; Clemens and Stanton 1987; Black et al. 1981). Hand-washing behavior is complex, and changes in behavior are often difficult to initiate and sustain. There are several good programmatic examples which have demonstrated improved handwashing practices over time (Hoque et al. 1996; Pinfold and Horan 1996).

For all infants and children, consume enough vitamin A

In populations where vitamin A deficiency is endemic, a 23–34 percent reduction in mortality is expected when vitamin A status is raised to normal values. Community trials achieved this impact using universal periodic supplementation 4 to 6 months apart in the form of either megadoses (100,000 IU per dose for 6–11 months of age and 200,000 IU per dose for 12–71 months of age), small weekly doses, or vitamin A-fortified foods. This reduction was due in large part to a fall in diarrheal and measles-related deaths in the supplemented children. Clinical trials of children hospitalized with measles have demonstrated that two high doses of vitamin A reduced mortality, with case fatality ratios reduced on average by 66 percent. The recommended doses are 50,000 IU per dose for infants below 6 months; 100,000 IU per dose for 6–11 months of age; 200,000 IU per dose for 12 months of age and older. In addition, evidence is growing of the impact of improved vitamin A status in reducing the duration, severity, and complications associated with both measles and diarrhea (IVACG 1996; Coutsooudis et al. 1991; Hussey and Klein 1990; Muhilal et al. 1988; Rahmathullah et al. 1990; Sommer et al. 1986). In the home, deficiency can be prevented by the regular consumption of vitamin A-rich foods, including fortified foods, or by regularly seeking vitamin A supplements.

For all families, use iodized salt

Iodine deficiency is the world's greatest single cause of brain damage and mental retardation. It is caused by a deficiency of iodine in the soil and therefore in locally

grown foods (WHO/UNICEF/ICCIDD 1993). Iodine deficiency is associated with stillbirths and fetal wastage, and impaired cognitive function in developing children. As adults, these individuals have limited productivity. A large number of developing countries have geographic areas with a high prevalence of iodine deficiency. Salt iodization is one of the lowest cost nutrition interventions, and universal iodization is currently underway. Some child survival program areas may not be affected by iodine deficiency, and in others, iodized salt may not be available. Selection of priority emphasis behaviors should take these considerations into account.

Treatment

Continue feeding and increase fluids during illness and increase feeding immediately after illness

A number of studies suggest that diarrheal illness in childhood contributes to secondary malnutrition and that both continued feeding during the illness and increased feeding during the convalescent phase following the illness are important to reduce this nutritional impact (Black et al. 1984; Martorell et al. 1975; Brown et al. 1988, 1994; Whitehead 1977). There are also data to suggest that any illness in children is likely to reduce caloric intake and predispose the child to malnutrition following each illness episode (Martorell et al. 1980). Continued breastfeeding during diarrhea shortens duration, and reduces the risks of dehydration and growth faltering due to diarrhea (Huffman and Combest 1990). Non-breastfed children are about three times more likely to develop moderate or severe dehydration during a diarrhea episode than those who are breastfed. Frequent breastfeeding reduces the need for ORS, and provides a fluid that is more acceptable to sick infants. Continued feeding maintains activity of intestinal digestive enzymes during illness, promoting nutrient absorption; this, in turn, prevents nutritional deterioration and possibly lack of appetite. Programs to improve the feeding practices of caretakers during and after illness need to identify and target local cultural beliefs and perceptions that influence feeding behavior (Bhuiya and Streatfield 1995; Bentley 1988; Bentley et al. 1991; Bentley 1992).

Mix and administer ORS, or appropriate home-available fluid, correctly

A number of studies have demonstrated that oral rehydration solution (ORS) and cereal-based home fluids are effective for treating dehydration in adults, children, infants, and neonates (Santosham et al. 1982; Pizarro et al. 1983; Gore et al. 1992; Kassaye et al. 1994; Grange 1994). Evidence shows that the correct administration of ORS in hospitals can reduce diarrhea mortality by as much as 71 percent (Heymann et al. 1990). In addition, studies have documented that increased availability of ORS at the community level can reduce diarrheal mortality at the household level (Kumar et al. 1987; Bern et al. 1990; Claeson and Merson 1990; CDC/MMWR 1992).

Although access to and knowledge of ORS can be high in communities, getting caretakers to use oral fluids appropriately can be more difficult (Reis et al. 1994; Chowdhury et al. 1988). Since the perception and management of diarrhea varies with the social and cultural characteristics of populations, it is important to develop unique approaches to changing ORS behaviors for each setting. Developing a behavioral strategy for improving the use of ORS is a high priority for reducing mortality rates due to diarrhea-induced dehydration.

In many settings, home-available fluids rather than ORS packets are more readily available and accepted by communities. In these instances, programs should promote the administration of home-available fluids in addition to ORS for preventing dehydration in children with diarrhea.

Administer treatment medications according to instruction (amount and duration)

The primary treatment for acute lower respiratory tract infections, malaria, and dysentery in infants and children is the administration of an appropriate antimicrobial. In order for an antimicrobial to be effective, it must be active against the organism and must be given in an adequate dose for a sufficient period of time. Most pneumonia in developing countries is caused by bacteria susceptible to antibiotics (e.g., cotrimoxazole, amoxicillin, chloramphenicol). A number of studies sponsored by WHO (Haryana, India; Kediri, Indonesia; Jumla, Nepal; Bohol, Philippines; and others) have shown that, when given appropriately, antibiotics can reduce pneumonia-related childhood mortality by up to 30 percent in countries with high infant mortality (Sazawal and Black 1992). Appropriate antimicrobial therapy has also been demonstrated to reduce mortality from dysentery caused by *Shigella* species, the most important cause of bloody diarrhea in children (Salam and Bennish 1991), and from clinical malaria. For example, a recent study in the Philippines revealed that shortened, three-day courses of the first-line antibiotic (cotrimoxazole) did not have a significant impact on pneumonia mortality suggesting that a complete, five-day course is required. For this reason WHO recommends that “the mother must not expect an immediate cure from the antimicrobial and should know that she must return to the health service if the child does not improve or worsens” (WHO/ARI 1991). Strategies for improving the prescription of antimicrobials and caretaker compliance with them need to be carefully considered. Antimicrobials are often purchased from drug vendors and these groups may need to be targeted in order to improve drug use in communities (Homedes and Ugalde 1993; Bimo et al. 1993; Gutierrez et al. 1994; Calva 1996; Ofori-Adeji and Arhinful 1996). Community health workers have been used in a number of sites to deliver appropriate antibiotics to households (Ronsmans et al. 1988; Ghebreyesus et al. 1996; Delacollette et al. 1996). Since common pathogens are developing antibiotic resistance in many regions of the

world, treatment protocols must be developed using good laboratory data on antibiotic resistance patterns and periodically reviewed.

Care-seeking Practices

Seek appropriate care when infant or child is recognized as being sick (i.e., looks unwell, not eating or drinking, lethargic or change in consciousness, vomiting everything, high fever, fast or difficult breathing)

Once an infant or child becomes sick, the caretaker must treat the illness appropriately. For the most important causes of mortality, this involves either the administration of an antimicrobial agent or the administration of an appropriate fluid (ORS or a home fluid), as well as continued feeding. In the absence of treatment, mortality from pneumonia, malaria, and dysentery has been demonstrated to be high. For example, data from Nepal indicate that untreated pneumonia had a rapid course, with the average interval between the appearance of fast breathing and death being 3–5 days (Pandey et al. 1990). Other studies have reported even shorter intervals, especially in infants. Effective treatment can be provided by a variety of groups and individuals in communities, and it is important that these health providers have the skills to correctly manage sick infants and children. The first step in the provision of effective treatment requires that caretakers seek appropriate care for their infant or child. Data from Bolivia indicate that a high proportion of mothers of infants and children who had died did not recognize that their children were unwell until they were close to death (Aguilar-Liendo et al. 1997). There is evidence that caretakers are more likely to recognize simple signs of illness, such as rash (measles) and generalized convulsions, than they are to recognize symptom complexes (Snow et al. 1993). A number of simple non-specific signs have been demonstrated to be important signs of a severe underlying illness in infants and children including: looking unwell or not playing normally; not eating or drinking; abnormally lethargic or difficult to wake; high fever; fast or difficult breathing; vomiting everything; and convulsions (WHO/ARI 1991; Marsh et al. 1995). It is impossible for caretakers, community health workers, or other community providers to accurately diagnose most illness in the community. Most illness must be recognized presumptively based on simple clinical signs. Community programs must emphasize improved caretaker recognition of simple and non-specific signs.

Annex B: Worksheet for Prioritizing Emphasis Behaviors

	Availability of resources	Groups available to address behavior	Feasibility of behavior change	Total Score
Ranking system	1=least available now 15=most available now	1=least available 15=most available	1=least feasible 15=most feasible	
Emphasis Behaviors				
Delay 1st pregnancy, space births, limit family size				
Seek antenatal care at least twice during pregnancy				
Take iron tablets for pregnant women				
Exclusive breast-feeding for about 6 mos.				
Complementary feeding for 6-24 mos.				
Immunize for measles at 9 mos.				
Immunize even when infant sick				
Immunize women for TT				
Use/maintain insecticide-treated nets				
Wash hands with soap				
Consume vitamin A				
Use iodized salt				
Feed/increase fluids for illness				
Mix and administer ORS/home fluid				
Administer treatment properly				
Seek care for sick infant/child				

Annex C: Behavior Analysis Scale

Rate each behavior on the following nine criteria, and add up to obtain a total score for each behavior. Compare total scores of each behavior to decide which behaviors to focus on first.

I. Health Impact of Behavior

- 0=No impact on health problem
- 1=Some impact
- 2=Significant impact
- 4=Very significant impact
- 5=Eliminates the health problem

II. Positive Consequences of the Behavior

- 0=None that caretaker could perceive
- 1=Few perceptible consequences
- 2=Some consequences
- 3=Significant consequences
- 4=Very significant consequences
- 5=Major perceptible consequences

III. Complexity of the Behavior

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

IV. Frequency of Behavior

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

V. Cost of Engaging in the Behavior

- 0=Requires unavailable resources or demands unrealistic effort
- 1=Requires very significant resources or effort
- 2=Requires significant resources or effort

- 3=Requires some resources or effort
- 4=Requires few resources or little effort
- 5=Requires only existing resources

VI. Compatibility with Existing Practices

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

VII. Persistence

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

VIII. Observability

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

IX. Approximations Available

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

Annex D: Resource Guides on Information Gathering

General Resources

Debus, M. 1995. *A Handbook for Excellence in Focus Group Research*. HEALTHCOM Special Report Series. Washington, DC: HEALTHCOM, Academy for Educational Development, prepared for USAID.

Dickin, K., M. Griffiths, and E. Piwoz. Draft, March 1996. *Designing By Dialogue: Consultative Research for Improving Young Child Feeding*. Washington, DC: Health and Human Resources Analysis (HHRAA) Project, prepared for USAID.

HEALTHCOM, 1995. *A Tool Box for Building Health Communication Capacity*. Washington, DC: HEALTHCOM, Academy for Educational Development, prepared for USAID.

Scrimshaw, S.C.M. and E. Hurtado. 1987. *Rapid Assessment Procedures for Nutrition and Primary Health Care: Anthropological Approaches to Improving Programme Effectiveness*. UCLA Latin American Center Reference Series, Vol. 11. Tokyo, New York, and Los Angeles: The United Nations University; UNICEF/United Nations Children's Fund; and University of California, UCLA Latin American Center.

Resources for Topic-Specific Information Gathering

WHO Programme for the Control of Acute Respiratory Infections. 1993. "Focussed Ethnographic Study of Acute Respiratory Infections." ARI/93.2. Geneva: WHO.

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Bhattacharyya, K. and J. Murray. 1997. "Integrated quantitative and qualitative approach to planning and monitoring community-based child health programs." BASICS Technical Report. Arlington, VA: BASICS Project, for USAID. In press.

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