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A Strategy for Behavior Change
for Malaria Prevention and Control:
Eastern Province (Zambia)
Integrated Malaria Initiative

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by

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ACRONYMS

BASICS	Basic Support for Institutionalizing Child Survival
CBoH	Central Board of Health
CDC	Centers for Disease Control and Prevention
CHWs	community health workers
CIMI	Copperbelt Province Integrated Malaria Initiative
CQ	chloroquine
DHMT	District Health Management Team
EHP	Environmental Health Project (sponsored by USAID, located in Arlington, Va.)
EPIMI	Eastern Province Integrated Malaria Initiative
HEALTHCOM	Communication for Child Survival Project (sponsored by USAID)
IEC	information, education, and communication
IMCI	integrated management of childhood illness
IMI	integrated malaria initiative
ITNs	insecticide-treated nets
JICA	Japanese International Cooperation Agency
LIMI	Luapula Province Integrated Malaria Initiative
NHCs	neighborhood health committees
NMCP	National Malaria Control Programme
SFH	Society for Family Health
SP	sulfadoxine/pyrimethamine, or Fansidar™
TA	technical assistance
TDRC	Tropical Disease Research Centre, Ndola, Zambia
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Background

Malaria poses a challenge to public health and socioeconomic development in Africa, where 85% of the world's total malaria clinical cases and 90% of the world's malaria deaths occur, with children under five and pregnant women the most vulnerable. In Zambia, malaria is the primary cause of illness and death among all age groups. Thus, the Government of Zambia has launched a comprehensive malaria control program, managed initially by the Tropical Diseases Research Centre (TDRC) and, more recently, by the National Malaria Control Programme (NMCP). The USAID Mission in Zambia also provides support through the USAID Global Bureau's Africa Integrated Malaria Initiative (AIMI) and other projects, including the Environmental Health Project (EHP).

The activity described in this report developed and implemented a behavior change communication strategy that took advantage of available USAID-sponsored research, and linked and supported efforts by different organizations to strengthen service delivery, care-seeking behavior, and bednet promotion and sales. As part of this strategy, USAID/Zambia requested EHP to assist in developing malaria-specific information, education and communication (IEC)/behavior change materials for use initially in three Zambian districts--all located in Eastern Province--that had been targeted for accelerated malaria-control activities.

The desired outcomes for the three targeted Eastern Province districts were to strengthen the management of fever at health-care facilities, strengthen the management of fever at home, and promote the use of insecticide-treated bednets in households. The resulting project became known as the Eastern Province Integrated Malaria Initiative (EPIMI). Two additional malaria initiatives, or "IMIs," are also underway: the Luapula Province Integrated Malaria Initiative in Samfya, sponsored by UNICEF; and the Copperbelt Province Initiative in Kitwe.

Goals and Development

The five-year targets of EPIMI and other malaria initiatives in Zambia are to reduce by 35% the number of cases of uncomplicated malaria among children under five and to reduce by 45% the number of cases of severe malaria among under-fives. The goals of this behavior change communication strategy are to encourage the performance of malaria prevention and treatment behaviors by the people of Eastern Province and by health-care workers, and to increase recognition and understanding of the health benefits of regular practice of these behaviors. The strategy also seeks to improve the training and supervision of health workers, the marketing of insecticide-treated bednets, the mobilization of communities, and the appropriate use of antimalarial drugs.

Design of the behavior change communication strategy in the Eastern Province began with a review of sociological, anthropological, and epidemiological research on malaria prevention and treatment, some of which EPIMI commissioned. Social scientists and malaria epidemiologists from the U.S. Centers for Disease Control and Prevention and USAID convened for a one-day meeting in Washington, D.C., in June 1998 to review results of research conducted in the Eastern Province regarding care-seeking behaviors, home fever management, attitudes and practices about the use of bednets, and malaria treatment protocols. Based on the discussions at this meeting, the most effective yet feasible malaria prevention and control strategies were suggested for subsequent discussions in Zambia with experts from TDRC, NMCP, and the Zambian Central Board of Health (CBoH).

The most significant development in the EPIMI communication strategy was to move from IEC toward a strategy that supports behavior change and maintenance rather than the dissemination of more information about health-care practices. A few behaviors related to malaria prevention and treatment were chosen and a set of simple, consistent "core" messages was developed to serve as the basis for all communication content. The strategy also identified the target population's motivations for adopting the desired behaviors and found that many nonhealth benefits, such as a sound night of sleep when using a

bednet, were motivating factors.

The strongest aspect of this communication strategy is the relationship between the training of health-care workers and the communication program. The most problematic link is the independent marketing of insecticide-treated bednets by the Society for Family Health (SFH) in Lusaka, a practice that can lead to inconsistent messages directed at target audiences about the use of bednets. A second problem is the unreliable supply of antimalarial drugs.

Elements of the Behavior Change Communication Strategy

This strategy developed in three phases. First, key behaviors were identified for family, clan, and individuals, and for health-care workers, and IEC specialists developed core messages. Second, communications materials were developed and distributed, including 2,000 pamphlets about malaria and 2,000 about bednet use, 500 posters about treating children for malaria, and 500 illustrating bednet use; a local drama troop created a performance about bednet purchase and use; a mobile video unit was used to promote bednet use; and a public address unit mounted on a project vehicle broadcast messages. Third, the Zambia Malaria Control Programme drafted a comprehensive monitoring and evaluation plan for use by EPIMI and other IMIs. The communication strategy was modified when the results of monitoring and evaluation indicated the need to change the materials and also as the strategy focused more on changing specific behaviors.

An evaluation of the initial strategy revealed that the initiative against malaria was perceived primarily as a bednet launch; training of health-care workers was inconsistent; confusion existed about the properties of PowerChem, the insecticide used on bednets; chloroquine (CQ) dosage information was inconsistent and too technical; and the treatment of pregnant women with intermittent chemoprophylaxis had not been approved in Zambia. The communication strategy was thus revised, eliminating the posters and some of the pamphlets. Two new communication materials were developed, including a CQ dosage chart and a pamphlet to encourage the combined use of bednets and CQ treatment.

Success Factors and Sustainability

The key to sustainable malaria prevention and control initiatives is the observable and measurable effectiveness of the selected health interventions, namely, the appropriate use of insecticide-treated bednets and the appropriate treatment of malaria cases with CQ. The following additional factors were critical to the success of EPIMI's health behavior change strategy:

- C Conducting qualitative and quantitative research early in the life of the initiative and incorporating the results into program planning
- C Selecting the most efficacious health-care interventions
- C Selecting the most critical behaviors to be encouraged
- C Identifying and using the motivations of the target populations
- C Using community health-care workers, neighborhood health committee members, and health facility nurses as the principal channels of communication
- C Taking a systems approach which actively integrates all components of the initiative through the use of consistent health messages
- C Adopting a comprehensive monitoring and evaluation plan.

Potential Next Steps

For an integrated malaria initiative to succeed, a number of barriers must be addressed.

- C The availability and policy problems inhibiting the supply of CQ and sulfadoxine/pyrimethamine must be resolved.
- C Stronger partnering between IMIs is needed to improve message consistency and increase the use of bednets.
- C The use of mass media, especially radio, should be improved, as should the training of health-care workers.
- C Bednet sales and use can be improved by intensive marketing between May and August when rural people have cash available.
- C Marketing must focus on both the health and nonhealth benefits that motivate people to buy and use bednets.

1 BACKGROUND

Malaria poses a significant challenge to public health and socioeconomic development in Africa. Africa currently accounts for 85% of the world's total malaria clinical cases and 90% of the world's malaria deaths, with infants, young children, and pregnant women being especially vulnerable. Over the coming years, it is estimated that the region will experience a 7% to 20% annual increase in malaria-related deaths and cases of severe illness.

Malaria is also one of four components of the new infectious disease strategy launched by the U.S. Agency for International Development (USAID). (The other three are antimicrobial resistance, tuberculosis, and surveillance.) USAID's objectives for the malaria component include expanded application of proven interventions in targeted countries to prevent and control malaria in children and pregnant women at the household level and in health care facilities. Specifically, the objectives include the following:

- C Improved management of pediatric fever and anemia, by health-care workers at health-care facilities and by community providers, mothers, and other caretakers in the home;
- C Improved access to and demand for malaria prevention and treatment for pregnant women;
- C Increased demand for, access to, and appropriate use of affordable insecticide-treated materials; and
- C Improved management of antimalarial drugs as reflected in revised national drug policies, training of health-care workers, drug distribution/logistics, and quality of services provided by public/private-sector providers and caretakers.

All the above objectives have information, education, and communication (IEC)/behavioral change aspects, and, to be most effective, the content of these aspects should be consistent across the various sectors and organizations involved in implementing malaria-control programs.

Malaria is of particular concern in Zambia,

where it constitutes the number-one killer among all age groups. In response to this problem, the Government of Zambia has launched a comprehensive program of malaria-control activities, to be managed by the Tropical Disease Research Centre (TDRC), the implementing agency responsible for malaria control in Zambia. USAID/Zambia is supporting this effort, with supplemental assistance from the USAID Global Bureau's Africa Integrated Malaria Initiative (AIMI) and several USAID cooperating agencies, including the Environmental Health Project (EHP).

Prior to this activity, USAID had sponsored (via EHP) some very important field operations research on several malaria control topics, including evidence of chloroquine resistance; care-seeking behaviors related to fevers; and knowledge, attitudes, and practices regarding the use of bednets for malaria prevention. Considerable information was available but had not been assembled and systematically applied to an IEC/behavior change strategy. The activity described in this report provided the opportunity to develop and implement an integrated IEC/behavioral change strategy that takes advantage of the available research, and that links and supports efforts by different organizations to strengthen service delivery, care-seeking behavior, and bednet promotion and sales.

In May 1998, as part of this strategy, USAID/Zambia requested EHP to assist in developing malaria-specific IEC/behavior change materials for use initially in three Zambian districts targeted for accelerated malaria-control activities: Chipata, Lundazi, and Chama (all in Eastern Province), and, potentially, for later use in Kitwe (Copperbelt Province) and Samfya (Luapula Province).

The materials are intended to support community-based early care-seeking, appropriate use of the antimalarial drugs chloroquine and Fansidar, appropriate use of treated bednets and insecticides for their retreatment, and, eventually, chemoprophylaxis of pregnant women. EHP

closely collaborated with many stakeholders in the conduct of this activity, including TDRC; the Zambian Central Board of Health (CBoH); the local organization, Society for Family Health; and USAID's Basic Support for Institutionalizing Child Survival (BASICS) Project.

The development of IEC/behavior change materials for Eastern Province in particular was the subject of a strategy development workshop held March 23-25, 1998, in Chipata. Sixty-seven people attended the workshop, which included presentations on research findings and discussions regarding malaria treatment and prevention. At the conclusion of the workshop, representatives of the three targeted Eastern Province districts presented the following desired outcomes, agreed upon at the workshop:

1. Strengthening the management of fever at health-care facilities,
2. Strengthening the management of fever at home, and
3. Promoting the use of insecticide-treated bednets in households.

Each of these outcomes requires behavior change and preparation of integrated IEC materials. CBoH was designated as the lead organization for the development of such materials and formed the Integrated IEC Materials Committee to oversee the process.

Another activity, also discussed at the March workshop, was the launch of a pilot bednet marketing program through the USAID-sponsored Society for Family Health (SFH) to be associated with six health-care centers in Eastern Province, four in the Lundazi District and two in the Chipata District. An additional component of the overall malaria-control strategy discussed at the workshop was a technical implementation team, to be located in Chipata under the auspices of TDRC. The team was envisioned to consist of an overall coordinator, an IEC specialist, a training specialist,

and a sales and marketing specialist. Together, these activities and components made up the Eastern Province Integrated Malaria Initiative (EPIMI).

In addition to EPIMI, there are two other such malaria initiatives, or "IMIs," in different stages of development in Zambia. One is the Luapula Province Integrated Malaria Initiative (LIMI), operating primarily in Samfya, which UNICEF has sponsored for several years. The focus of LIMI has been a bednet program with some activities in health-care facilities. Behavior change has not been a major focus in LIMI until recently. The second initiative is the Copperbelt Province Integrated Malaria Initiative (CIMI), focused primarily in Kitwe. CIMI is in the early planning stages and is currently the least developed of the three initiatives.

Finally, the CBoH has recently decided to transfer responsibility for malaria control to a National Malaria Control Program (NMCP), to be housed in Lusaka. Apparently, the transition from TDRC to the NMCP is underway as of this writing (early 1999).

In summary, the context in which EHP began this activity included the following:

- C Considerable information was available on local knowledge and practices related to malaria control.
- C Interest in IEC/behavior change efforts and materials was high, but few materials had been developed and integration had not been attempted.
- C There was a need for rapid action due to the impending launch of a pilot bednet sales and distribution program.

Although EHP's technical assistance has initially focused on Eastern Province, it is expected to have much wider applicability once the IEC materials are operationalized and pilot tested in the province.

2 GOALS AND DEVELOPMENT OF THE BEHAVIOR CHANGE COMMUNICATION STRATEGY

This chapter describes the steps taken to develop an effective behavior change communication (BCC) strategy for the Eastern Province Integrated Malaria Initiative (EPIMI). It also describes the communication materials available as of June 1998 and explains the ways in which they were changed as the strategy was developed during the rest of the year.

The overall goals of the BCC strategy, described in more detail in Section 2.1, are

- C To encourage the performance of specific malaria prevention and treatment behaviors by community members and health-care workers, and
- C To increase recognition and understanding of the health benefits of regular practice of these behaviors.

The basic steps in the development of a BCC strategy in the Eastern Province of Zambia are likely to be very similar for malaria prevention and control efforts elsewhere in Africa. To fully develop and integrate the BCC efforts into a comprehensive malaria prevention and program, the following steps are usually necessary:

1. **Review the available local studies data** pertinent to malaria prevention, such as care-seeking behavior and practices for febrile illness and KAPB information related to the use of bednets.
2. **Discuss available malaria-prevention and -treatment technologies with experts.**
3. **Focus on encouraging specific behaviors**, rather than simply on disseminating information and increasing knowledge.
4. **Select a few key behaviors** that will reduce the incidence of malaria.
5. **Create a set of “core” messages** that will be used as basis of communication content.
6. **Adopt a behavior change model** to identify and respond to behavior change stages.
7. **Identify and use people’s motivations** for

adopting desired behaviors.

8. **Pilot-test** the initial communication materials, the behaviors, and related activities.
9. **Encourage tighter integration between components**, to link the public sector (clinic and hospital treatment and drug supply), community health workers, and the private sector (bednet sellers and pharmacists).
10. **Include monitoring and evaluation techniques** as a basis for program adjustments over time.

These steps were followed in building the EPIMI program, as described in Section 2.2.

The most significant development in the EPIMI communication strategy was to move from information, education, and communication (IEC) toward a communication strategy focused primarily on encouraging the adoption of a very limited number of specific, efficacious behaviors to reduce the incidence of malaria and improve the effectiveness of treatment.

As the name suggests, IEC pertaining to health usually places primary emphasis on the dissemination of information and on the education of people about their health. The success of IEC rests on the expectation that “good” health behavior will be practiced by people who become educated about their health. The results from IEC, frankly, have been very disappointing. Improvement in health status often does not follow as a result of increased knowledge about health. Awareness levels and knowledge gains do occur, but health behavior in too many instances does not change in useful directions. *It is health behavior, and only behavior, that leads to improvements in health status. Awareness and knowledge are necessary, but usually insufficient by themselves.*

To combat the disappointing results of IEC, health communication specialists in the past 20 years have radically changed the way they go about their work. Today, rather than disseminate a large amount of information on many topics, these specialists focus their attention on only a few

behaviors that, if practiced accurately and regularly, will noticeably improve health status. Further, they search for motivational factors among the target population and use them in encouraging people to maintain “good” health-related behaviors they already perform, to improve the accuracy and regularity of familiar health behaviors, to adopt new behaviors, and, occasionally, to halt behaviors detrimental to health.

2.1 Health Communication Goals

Zambia’s integrated malaria initiatives rest on the belief that if carefully selected prevention and treatment behaviors are widely adopted, illness and death from malaria will be significantly reduced. The five-year targets of the EPIMI (and the other malaria initiatives in Kitwe and in Samfya and other communities in Luapula Province) are that the number of cases of uncomplicated malaria among children under five will decrease 35%, and for severe malaria, the number of cases among under-fives will decrease 45%. These targets were set and agreed to by all the representatives at an Inter-District Meeting held in Chipata in November 1998.

Two goals were developed for health behavior change communication through this activity.

- (1) *To encourage the performance of specific malaria prevention and treatment behaviors by the people of Eastern Province and by health-care workers.*

The special target populations are children under five and pregnant women, because of their greater vulnerability to malaria. In addition, people suffering from long-term illnesses such as tuberculosis or HIV/AIDS, whose general health condition and immune systems have been compromised, are also a special target population, although to date, relatively less attention has been focused on them. Health-care workers of interest include those working in health-care facilities in the public and private sectors, as well as a relatively new cadre of community health workers (CHWs) and the members of neighborhood health committees (NHCs) that select and support them.

- (2) *To increase recognition and understanding of the health benefits of regular practice of these specific behaviors.*

Although these two goals are the heart of the BCC strategy, the health communicators, with the active support of the overall program managers, also need to encourage and facilitate the integration of the other major components of the EPIMI—training and supervision of health workers, the marketing of insecticide-treated bednets, the mobilization of communities through the community partnership program, and the supply of antimalarial drugs—with the communication program. If any of these other components is inconsistent with the behavioral advice, or if any one of them fails to perform its functions well, neither the communication program nor the initiative itself will succeed.

2.2 Steps to Develop a Communication Strategy

The EPIMI health communicators followed a systematic process to develop and refine a BCC strategy. The strategy rests on specific foundation stones that have been proven to be effective and essential to changing and maintaining desirable health-related behaviors in large target populations. These steps are reviewed in more detail below.

2.2.1 Review the available local studies

The researchers in Zambia and all of the written research reports were consulted extensively during the process of developing the BCC strategy. In addition, existing data about the incidence of malaria and the development of resistance to chloroquine were consulted.

To its great credit, the EPIMI commissioned a number of sociological and anthropological studies of the social and economic contexts in which the initiative would be undertaken. One of the very first steps in improving the communication strategy for the EPIMI was to gather the U.S.-based social science researchers and malaria epidemiologists for a two-day meeting in Washington in June 1998 (Appendix A). One of

the purposes of the meeting was to have the researchers apply their findings to the design of a communication strategy. Questions explored in the strategy's design included the following:

- C What did target populations already know (and not know)?
- C What, and how effective, were typical care-seeking behaviors?
- C What were people already doing that was appropriate for malaria prevention and treatment? What did people understand to be the cause or causes of malaria?
- C In what ways were current malaria-related behaviors functional or dysfunctional?
- C What were health workers doing to combat malaria, and how were they doing it?
- C What was the feasibility of buying and sleeping under bednets in cultural and economic terms in Eastern Province?
- C What motivations did people have for adopting the behaviors associated with bednets and chloroquine (CQ) treatment?

Finally, special attention was paid to the performance of health-care workers and their handling of and attitudes toward patients at all types of health facilities. Health-care workers were intended to form a major element of the communication strategy, with their responsibilities to include handling, counseling, motivating, and teaching people; selling nets; and providing drugs to patients and caretakers of children with malaria.

The studies revealed the following information about health-related behaviors performed at home and in communities:

- C Awareness of malaria is high among the people of Eastern Province.
- C Knowledge about the cause of malaria is good. Respondents interviewed always mentioned mosquitoes as an agent, even if they also included causes that Western science and medicine would not support.
- C Awareness of bednets is high, but they are regarded as very expensive relative to household income.
- C Some simple prevention behaviors are already in practice but are acknowledged to be only marginally effective.
- C The major cause of complicated cases of malaria is the failure to seek prompt treatment.

- C The incorrect and incomplete dispensing of CQ by caretakers is very widespread. (Incomplete dosage leads to relapses and contributes to CQ resistance.)
- C From the point of view of families, it is the male wage earner who should be protected against malaria, not children under five or pregnant women.

Regarding health-care workers, many serious "performance deficits" were detected through the formative research. Although these practices are not committed in every instance or by every health-care worker, they occur often enough to discourage many individuals from seeking prompt treatment at clinics and encourage treatment at home, which is undertaken without directions or supervision. Among the deficits were the following:

- C Poor patient-handling skills by a significant number of nurses, leading to long delays for treatment;
- C Harsh criticism of patients for poor treatment practices at home or for delays in seeking treatment at a health-care facility;
- C Making patients return each day for their three doses of CQ (when distance, cost of transport, and time away from other responsibilities are great);
- C Making an improper diagnosis for malaria (failing to ask about fever or to take the patient's temperature; failure to ask the caretaker about the presence of any of the malaria danger signs);
- C Not taking enough time to explain how much CQ to take, when to take it, and how (thereby contributing significantly to dosage errors by caretakers); and
- C Errors in CQ dosage because the nurse cannot remember the correct amounts for someone of the patient's age;

These performance deficits of health-care workers are barriers to the "prompt, correct, and complete treatment" behaviors that children's caretakers must administer. For example, caretakers may hesitate to bring a child with fever to a health facility because the caretaker anticipates "rough treatment" from the nurse. Such fears may have developed from previous experience or from stories told by friends. Similarly, problems with the CQ treatment will arise at home if the

counseling about how much CQ to give and when and how to administer it is so rushed that the caretaker cannot remember it accurately.

Many of these performance deficits are being addressed (and hopefully eliminated) through USAID's integrated management of childhood illness (IMCI) training course and through follow-up supervisory visits. The monitoring and evaluation plan calls for periodic measurement of the performance of health-care facility staff.

The communication program encourages "prompt, correct, and complete treatment with CQ" whenever fever is present. It tells caretakers to return to the health facility if the fever does not subside within 48 hours, and it directs caretakers to take the patient to a clinic or hospital immediately if any of the malaria danger signs appears. CHWs should encourage these behaviors, and nurses at health-care facilities should praise correct behavior. Even for approximately correct behavior, nurses should offer praise and on-the-spot re-education.

To aid health-care workers with respect to correct dosages, a wall chart has been prepared and will be posted in every treatment and counseling room in every clinic. In addition, the IMCI course material includes the same dosage chart in a spiral-bound book that every IMCI-trained health-care worker will keep. (For a sample dosage chart, see Appendix D.)

To aid mothers in administering both correct and complete dosages, half sheets of paper with dosage directions for both CQ syrup and tablets in symbolic form will be given with each CQ prescription. Plans call for these same dosage sheets to be handed out by all pharmacies and retail shops that sell CQ.

A summary of the assessment work conducted in Eastern Province may be found in a report by Karen Shelley and Esther Mambwe, published as EHP Activity Report No. 51.¹

2.2.2 Discuss the malaria prevention and treatment

¹ Shelley, Karen, and Esther Mambwe. October 1998. "Community and Household Assessment of Malaria Prevention in Eastern Province, Zambia: Summary of Findings on Knowledge, Attitudes, Behaviors, and Practices." EHP Activity Report No. 51.

technologies with the experts

Health communicators are not the subject matter experts in this project (or for that matter, in any health-related project). They need sound technical advice in order to know what behaviors and knowledge to promote. Specifically, health communicators need to know all the attributes, benefits, limitations, complications, and liabilities of each of the malaria prevention and treatment technologies available and what their implications are for good practices. Health communicators are eager for prevention and treatment technologies that will produce noticeable results if they are widely practiced. "Noticeable" in this case means observable by the people and the communities involved, not just by project evaluators, with their tests of statistical significance. If the benefits are readily recognizable, feedback to those who adopt the behaviors is positive, and sustained performance of the behaviors is more likely.

From the outset, the EPIMI decided to select insecticide-treated bednets as the major prevention intervention. Technically, was this the best option for Zambia? Would the bednets be more effective if combined with another prevention technique? Were any serious negative characteristics being ignored or downplayed by bednet "enthusiasts?" A similar set of questions were raised about the choice of chloroquine as the first-line antimalarial drug.

Extensive discussions about these topics began at the meeting in Washington, D.C., in June 1998, where malaria epidemiologists from the U.S. Centers for Disease Control and Prevention (CDC) and USAID participated in the initial shaping of the communication strategy. Conversations with malaria experts continued in Zambia in order to understand more completely the etiology, epidemiology, and possible treatment regimes for this disease, particularly in the Zambian context. Experts from TDRC, the National Malaria Control Programme (NMCP), and CBoH were consulted. The consultations with CBoH also included the matter of the reliability of drug supplies. (For a list of contacts, see Appendix A).

The experts offered a plethora of advice about what people should do to lessen their encounters with malaria. Frankly, many more behaviors were recommended than the BCC strategy could

promote effectively. Were all these behaviors efficacious? Which ones brought the user the greatest health benefit? Which ones were feasible for Zambians in Eastern Province to perform?

The communicators discovered a number of professional differences as to the best malaria-prevention and -treatment techniques. For example, some medical professionals are of the opinion that Zambia should use sulfadoxine/pyrimethamine (SP), or Fansidar™, as the first-line antimalarial drug, as neighboring Malawi has done. For the moment, that is not Zambia's policy. However, the debate is not over.

There also exist strong opinions in the medical community about the best malaria chemotherapy during pregnancy. A policy on such treatment has not yet been finalized. As a result, for the moment at least, health communicators have been advised to omit any messages on this topic from the communication materials. Still other malaria experts place considerable store in the efficacy of reducing the number of breeding sites for *anopheles* mosquitoes, which occur year-round in Zambia and are especially numerous during the rainy season. Environmental clean-up has many benefits besides the elimination of such breeding sites; however, draining Lake Beneguwela in Luapula Province or filling or draining standing water sites within 2 kilometers of all homes in rural areas of the Eastern Province would be gargantuan undertakings that neither the project nor the people of Zambia could afford. The reduction of breeding sites might make more sense in the more urban setting of Kitwe in the Copperbelt Province.

Spraying with insecticides has been tried extensively in Zambia and most other tropical countries. For reasons of cost, harm to the environment, and rapid adaptation of insects to insecticides, however, spraying programs are not currently encouraged or promoted.

Some of the traditional practices—such as burning mango leaves or mealie meal to create smoke to drive mosquitoes away—were also discussed. Experts agreed, however, that such practices are only marginally beneficial.

Discussions also addressed the practices of covering up in the evening by wearing long-sleeved shirts, pants, and socks; applying mosquito repellants to the skin; and burning mosquito coils. Again, these are marginally useful techniques, the experts noted, and the latter two are expensive

relative to local incomes and are not likely to be sustained year-round.

2.2.3 Focus on encouraging specific behaviors

The communication strategy (see Appendix B) focused primarily on encouraging specific malaria-prevention and -treatment behaviors for two main reasons. One reason is practical in that the social science research showed very clearly that knowledge and awareness levels regarding malaria prevention and treatment were already very high among Zambians. This included knowledge about bednets and their effectiveness.

The second reason for emphasis on specific behaviors is that people who are well educated about the health risks they face do not necessarily practice healthy behaviors. What health communication must do is promote specific health behaviors and stop relying on the assumption that if only people were well educated about health, healthful behavior would follow. That assumption simply does not work with sufficient reliability.

2.2.4 Select a few key behaviors

Changing behavior related to malaria prevention and control has many challenges:

- C **Modifying a behavior that is “mostly correct,”** such as taking CQ but not promptly enough or for the required three days.
- C **Introducing a new behavior,** such as sleeping under a bednet every night.
- C **Halting a behavior that may be detrimental,** such as neglecting to help patients understand the danger signs for malaria.
- C **Sustaining a behavior change,** such as sleeping under a bednet during the dry season.

Because sustained behavioral change is so difficult to achieve, health communicators will try to promote the least number of behaviors that will produce a significant improvement in the health of individuals and their community.

As noted above, quite a number of malaria-prevention and -treatment options are available. All of them have been promoted in Zambia and, in

fact, were included in the early EPIMI IEC materials. The initial communication materials produced by the EPIMI included a teaching flip chart for small group presentations by nurses and CHWs, a set of counseling cards for use by CHWs in one-on-one situations, and a handbook for neighborhood health committee (NHC) members.

When looked at from the perspective of behavioral change communication, there were several major problems with the materials. First of all, the primary intent of the content was to increase knowledge and raise awareness, although the project's own research showed that knowledge and awareness levels regarding malaria prevention and treatment were already quite high among the population.

Second, where the materials recommended certain behavior, that message came toward the end of the presentation or text. Further, the recommended actions tended to be vague or general, rather than explicit and precise. In addition, *everything* beneficial that a person could do was included, with no distinction made regarding which behaviors were more important than others.

Third, the training curricula and manuals for health-care facility nurses and CHWs had already been developed and were in use. The risk would have been message inconsistency between what mothers and other caretakers learned from nurses and CHWs and what they learned from IEC materials. Fortunately, there was only one major problem with the health-care facility materials: The CQ dosage chart in the CHW manual indicated that everyone from five years of age to adulthood should get the same adult dose. According to several medical authorities, the adult dose would be toxic for children. Measures to correct this error are under way.

Finally, none of the materials attempted to appeal to motivations other than health for adopting recommended any healthful behavior related to malaria. Furthermore, the reasons given for adopting any of the behaviors were limited to healthfulness. Other reasons that might prove to be more relevant and powerful in encouraging better health behaviors had not been explored.

The BCC team identified how the materials could be made more effective, relying on the technical advice from the malaria experts about the "key" behaviors that, if practiced, would result in a noticeable decrease in the incidence of malaria.

From the health communicator's point of view, there were too many messages. Some, if practiced, would produce far better results—a reduction in the incidence of malaria—than others. Some were infeasible. Some were so marginally effective that there seemed to be little point in expending resources promoting them.

In order to force prioritization, the experts were asked, "If we could only introduce one method for combating malaria, what would you recommend?" and "If we were able to introduce a second, what would it be?"

Two considerations were used to select the behaviors. One was the estimates of efficacy supplied by the malaria experts. The other was the behaviors' feasibility for people in Eastern Province. For this, the team relied on the social scientists and their studies.

The result of the discussions was the selection of two sets of behaviors. One set is related to malaria prevention, the other to treatment.

1. Malaria prevention:
 - C Sleep **every** night under a mosquito net treated with an insecticide.
 - C Keep your net treated with an insecticide.
2. Malaria treatment:
 - C Treat a person with a fever **promptly** with chloroquine at a clinic or at home.
 - C Give the **correct** dose.
 - C Give the **complete, three-day dose** of chloroquine.
 - C If the fever does not go away after the second day, take the patient to a clinic.
 - C If you see any of the danger signs of malaria, take the patient immediately to a clinic or hospital. Do not try to treat him or her at home.

These behaviors can be distilled down even further into a set of key behaviors.

Key Behaviors

Sleep EVERY night under a mosquito net that has been treated with an insecticide. Treat a fever promptly, in a clinic or at home, with the correct and complete 3-day dose of chloroquine.

While some malaria experts wished that more or different behaviors could be included, they seemed to agree that if the team were successful at encouraging the noted behaviors, it would produce a significant reduction in the incidence of malaria.

2.2.5 Create a set of “core” messages

There are two principle purposes served by creating a set of “core” messages for the EPIMI BCC strategy. One purpose is to distill, in simple, direct language, what it is that people need to do in order to achieve a health benefit. The second is to declare what the messages should be to

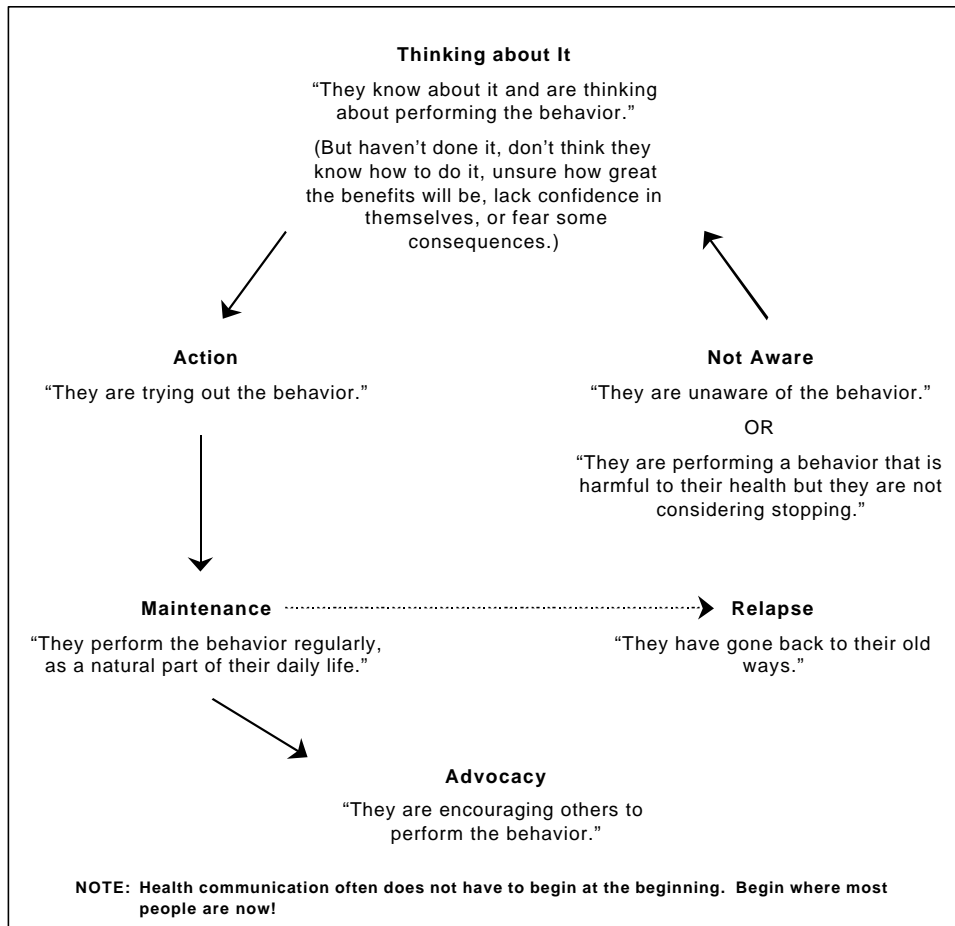
everyone in the project and to any and all partners in the malaria initiative. Message consistency is one of the most critical elements of a successful BCC strategy.

The core messages are expressed in terms of the key behaviors. The messages do not just inform or educate people. Rather, they encourage specific behaviors that will result in a reduction of illness and death from malaria.

2.2.6 Adopt a behavior change model

A model of the way behavioral change takes place is a useful device for BCC strategists. It

Figure 1
Stages of Behavior Change Model



Based on Prochaska and DiClemente's Stages of Change model (*Changing for Good*. NY: Morrow, 1994.)

reminds them to look where the target audience is along the steps to performing the desired behaviors as a routine part of their daily lives, and what kinds of messages the audience needs to move to the next step.

The Stages of Behavior Change model of Prochaska and DiClemente was applied to the design of the BCC strategy. Three aspects of this model are especially relevant. First, if people are already aware of a behavior, they are at least at the “Thinking about It” stage. Communicators need to provide information that moves people from “Thinking about It” to “Action,” rather than attempting to raise awareness even higher. Put another way, communication designed to raise awareness levels does little to get people to try out a behavior. Second, communication has to be sustained until the target population is at least at the “Maintenance” stage. This may take a long time and require constant communication that rewards behavior at the trial stage until that behavior becomes a natural part of daily life. Third, relapse is a very real possibility. The BCC strategy has to be designed to prevent relapse and, if it occurs, to be able to restore the desired behavior.

People can be at any stage of the behavior change process. Often, people are out ahead of the communicators, nurses, and doctors. It is most efficient to communicate with people where they are in the process of behavior change, and then move them along toward the final, “Advocacy,” stage.

2.2.7 Identify and use people’s motivations

Identifying other motivations has been one of the most novel ideas introduced into the communication strategy. So often better health practices are promoted solely for their direct health benefits. Yet doing so often obscures other powerful reasons for adopting a new behavior that may have relatively little to do with health.

Shortly after deployment of the initial communication strategy, a number of focus group discussions and in-depth interviews were conducted for three purposes: (1) to gauge the impact of the communication materials; (2) to determine whether any of the desired behaviors were being performed; and (3) to continue the

search for evidence of bednet user satisfaction or dissatisfaction (in cases where the respondent had already purchased a bednet) and what motivated people to purchase and use the nets. Among the findings of the discussions and interviews were the following:

- C Some men are keeping nets for themselves, rather sharing them with children under five and pregnant women in their households. (This was predicted by the formative research, which found that, in general, the target population believes that of all the members of a family, it is the male wage earner who should be protected against malaria, not children under five or pregnant women.)
- C Some people are keeping their nets stored until “mosquito season.” (However, malaria mosquitoes are present all the time; there are just more of them in the rainy months.)
- C Some parents voiced concern about the safety of the chemical used to treat the bednets. (The experts were consulted again, and the communicators were reassured that PowerChem is safe, even for babies that might suck or teethe on the net material.)
- C Satisfied net users talked about benefits they were already enjoying. Researchers heard comments such as the following:

“I sleep much better without those insects buzzing and biting me all night long!”

“The children sleep the whole night through, which means I don’t have to get up in the night to comfort them.”

“We have no more of those ‘creepy crawlly’ things in our bed.”

“You should see the dead mosquitoes and other bugs on the floor around the bed every morning. PowerNets work!”

“I shared our net with my pregnant wife. After all, ‘In a pregnant woman, there is a future.’” (a well-known, favorite expression)

“I have always been afraid of snakes dropping on me from the roof. With a PowerNet, now I sleep without a bit of worry.”

It is interesting to note that the benefits people were identifying were not the health benefits one would have expected. Yet, they appeared to be powerful motivating factors for the respondents. (These motivational factors and testimonials from satisfied users were incorporated into a new pamphlet titled “Let’s Come Together to Defeat Malaria,” a sample of which is included in Appendix C.) Monitoring of the communication strategy will continue to look for additional motivations. (In other health projects, the nonhealth benefits were as powerful as, and in some cases more powerful than, the health benefits in motivating people to adopt the desired behaviors.)

2.2.8 Choose and apply a proven communication methodology

EPIMI is using the five-step health communication methodology developed by the Communication for Child Survival (or HEALTHCOM) Project, sponsored by USAID (see Appendix B). This methodology was chosen because it has a proven track record of achieving sustained performance of positive, health-related behaviors in large populations. The methodology has the following characteristics:

- C **Audience-centered.** Communication strategy designers seek the reasons the target populations value the health interventions being promoted, rather than relying only on the reasons provided by health professionals.
- C **Research-based.** Qualitative and quantitative research is conducted to fully understand the context in which the health interventions will be introduced. This gives some assurance that the interventions will work in the local culture. Qualitative research is helpful in understanding the technical intervention from the point of view of the user.
- C **Sets process and outcome objectives for the communication strategy.** Objectives for the communication program, as well as for health status improvement are established early in the design process.
- C **Targeted.** Communication resources are carefully expended on just the people whose

behavior needs to be influenced. Often, secondary targets are chosen, such as community opinion leaders or mothers or mothers-in-law, when the primary target is community members or daughters or daughters-in-law.

- C **Uses multiple communication channels.** Experience has shown that a synergistic effect results when essentially the same message reaches the target audience through more than one channel of communication. The synergistic effect is lost, however, if the use of the multiple channels is not coordinated.
- C **Strives for message consistency.** The methodology strives for message consistency, recognizing that the target audiences would quickly detect conflicting advice and likely conclude that the communicators do not know what they are talking about. Maintaining message consistency is particularly critical in large projects such as the integrated malaria initiatives (IMIs), in which many partners are attempting to work together.
- C **Promotes very limited, specific health behaviors.** The methodology is explicit and precise and advocates demonstrating and describing the behaviors simply and accurately. If the opportunity arises, communicators encourage people to practice under supervision (for example, dipping bednets in PowerChem while a trainer observes).
- C **Builds monitoring mechanisms into communication strategies.** Monitoring is an integral step, as results of the communication efforts are fed back into the planning and design steps. Communicators are alerted early on when messages are not getting to the target audiences or when the desired behaviors are not occurring. With regular monitoring, the communication strategy improves its effectiveness over time and adapts to the audiences as they grow in knowledge and skills.
- C **Provides systematic and continuous communication programs.** Communication “energy” must be applied continuously because there are always new people assuming health-related behavioral responsibilities for themselves or others.

2.2.9 Encourage tighter

integration between EPIMI components

The saying that a chain is no stronger than its weakest link applies here. In this project and many others, there has been a slight tendency to regard health communications as an “add-on” activity, something that should be done, but not quite brought in as a full partner. In some situations, this treatment has been deserved, because IEC has educated but has failed to engender the adoption of the behaviors necessary to improve health status. The present communication strategy, however, with its messages focused on the critical prevention and treatment behaviors, and with its appeals to people to adopt these behaviors based on their own motivations, is likely to earn the status of full partner.

The links in the EPIMI chain include effective marketing (of PowerNets and PowerChem at prices people can afford), communications skills of the clinic staff and CHWs (trained to teach, counsel and encourage the key malaria-prevention and -treatment behaviors), reliable supplies of chloroquine and SP, a community partnership program that organizes NHCs and CHWs and builds relationships between the health-care facility and the community, and a behavior change communication program that effectively promotes the desired behaviors. If any of the links in the chain are not functioning optimally, the success of the EPIMI will suffer to some extent. If any of the links “breaks,” the EPIMI will fail.

On a more positive note, the opportunities for mutual reinforcement among the links and the people responsible for them abound. In this sense, the chain-link analogy is not adequate to describe the potential for synergy that exists in the project.

Fairly good integration already exists between some of the EPIMI components. For example, a strong relationship exists between the health-care worker training and the BCC program. There is a “natural” affinity here because the largest and most important component of the communication program is the veritable army of CHWs and clinic staff who encourage people to prevent and treat malaria and explain to them how to do so. Not incidentally, the heads of these two programs within the BASICS Project share an office.

Conversely, the weakest linkage between

EPIMI components has been and continues to be between the marketing effort by SFH in Lusaka and the other Lusaka-based components. SFH has tended to operate somewhat independently. This seems to be due partly to the fact that SFH is housed in separate offices from the others, partly because its activity is contracted separately from the rest of the project and does not fall directly under project management. As a result, the SFH marketing materials have been developed largely independently of the BCC staff of the BASICS Project in Lusaka or the EPIMI IEC specialist in Chipata. The potential exists, therefore, to lose the reinforcing or synergistic effect that would occur if the same message reached the target audience simultaneously from different sources. In addition, independent, uncoordinated creation of materials can lead to message inconsistency or even contradictory messages to the target audiences. It should be noted, however, that SFH and MOH have made great efforts to ensure consistency between types of nets and insecticides used in all of the IMI locations.

Finally, the reliable supply of chloroquine and SP has been and continues to be a problem of potentially frightening proportions. Various factors beyond the scope of this report contribute to the problem. Nonetheless, the BCC program plans to increase the demand for these anti-malarials. If the drugs are not available, the EPIMI and the other IMIs will fail, and the communication program and the communicators will suffer a substantial blow to their credibility. The problems inhibiting the supply of these drugs must be solved with great speed.

2.2.10 Monitoring and Evaluation Plan

In early November 1998, key players in the Zambia Malaria Control Programme drafted a monitoring and evaluation plan (see Appendix D). The plan specifies how frequently measurements should be taken and which organization has responsibility, the method of data collection and the source of the data, the performance targets that are to be met, and definitions for the performance indicators that will be used.

The plan covers the critical elements of malaria case management at the community and health-care facility levels, the use and retreatment of bednets (including the status of the revolving

fund and the subsidization rate), the prevention of malaria during pregnancy, and the impact of the malaria initiative on morbidity and mortality attributed to malaria. Included in the plan are indicators that will show the effectiveness of the BCC strategy.

Representatives of the Samfya Project contributed substantially to the design of the plan;

therefore, it is intended not just for the EPIMI but for the other IMIs as well. The plan anticipates a national malaria initiative and provides IMI management with information about the performance of all the EPIMI components. It measures ultimate as well as intermediate results.

The plan was adopted at the Inter-District Meeting in Chipata in November 1998.

3 BEHAVIOR CHANGE COMMUNICATION STRATEGY ELEMENTS

This chapter describes the elements of the EPIMI communication strategy, beginning with an initial phase of identifying key behaviors and developing core messages, based upon the anthropological, sociological, and epidemiological research. In the subsequent phase, communication materials were developed and distributed and then monitored for impact and response, including reactions from those who purchased bednets. In the final phase, two kinds of adjustments were made to the health BCC strategy. One kind was driven by the results from monitoring the effectiveness of the materials. The other was a shift in design as the health BCC strategy became more tightly focused on changing specific malaria prevention and treatment behaviors.

3.1 Key Behaviors and Core Messages

3.1.1 The “Key” Behaviors

Based on experience in Zambia and other countries, the formative research, and the advice of malaria experts, certain critical behaviors must be introduced or improved upon—and in all cases sustained—in order to achieve a noticeable reduction in the incidence of malaria. These “key” behaviors are listed below.

Family, clan, and individuals:

- C Regular use of insecticide-treated bednets by those most at risk: pregnant women and children under five;
 - C Retreatment of nets on the recommended schedule;
 - C Prompt, correct, and complete treatment of fevers with CQ;
 - C A visit to a health-care facility if the fever does not subside within 48 hours;
 - C Recognition of the danger signs of malaria and, if present, immediate delivery of the patient to a health-care facility;
 - C Ability to give an antimalarial correctly; and
- C Recognition of when a child should be taken back to the health-care facility (such as in the presence of danger signs, or a failure to improve).

Health-care facility workers:

Key behavior for health-care workers consists of correctly examining patients by asking them or their caretakers the following questions:

- C Has the patient had a fever in the past 24 hours?
- C Has the patient demonstrated any of the IMCI general danger signs (which include the danger signs for malaria)?

The worker should also

- C take the patient’s temperature,
- C prescribe an antimalarial if the patient is febrile,
- C instruct the caretaker about the correct and complete dosage of CQ,
- C counsel the caretaker to return if the fever does not subside within 48 hours, and
- C refer patients with severe febrile disease to a next-level health-care facility.

3.1.2 The “Core” Messages

The core messages encourage the key behaviors and stress action on the part of the message recipient. They are directed at individuals for individual action. They are not expressed in communication materials as they are shown here. Instead, what follows is the “bare bones” content that must be communicated. The “flesh” will be added by using creativity and imagination during the materials design process.

There are two “prongs” to the malaria initiative; therefore, the messages are grouped into the two intervention areas: prevention behaviors and treatment behaviors. Even if followed, the prevention behaviors will not give a person complete protection from malaria; there are just

too many ways and times when mosquitoes will find and bite people. Therefore, people must be able to treat malaria when it strikes.

The messages were chosen to encourage only those behaviors which are most efficacious and feasible for people to perform. Later on in the life of the initiative, additional behaviors can be encouraged. For now, these few behaviors—if practiced regularly—will reduce illness and death from malaria.

Some of the messages encourage brand new behaviors, such as sleeping under a bednet every night. Others advocate the more correct, complete, or timely performance of behaviors people already practice but in ways that diminish their effectiveness.

It is interesting to compare the “prime” messages developed in Samfya for LIMI with those developed for the EPIMI. It is clear both projects want people to use nets and seek proper treatment; however, it is important to harmonize the messages promoted by each of the IMIs so as not to create contradiction and confusion. EPIMI has given copies of its core messages to Samfya and TDRC/World Health Organization (WHO) health educators. One of the EPIMI IEC specialists is also working on the development of CIMI materials, so it is unlikely that message conflicts will develop.

The EPIMI, at this writing, does not have a copy of the messages being developed or used by TDRC/WHO. A copy has been requested.

It is important to reconcile any conflicts between the message packages of the three IMIs right away. As long as target audiences of the three projects are isolated from each other, as they are at the moment, any message conflicts will not be apparent to the public. With the introduction of “Health Beat” on national television, “Health Watch” on national radio, and “To Your Health” in the *Times of Zambia*, however, any inconsistencies will become obvious. If, once assured, message consistency is not maintained, the projects will begin unwittingly to undermine

each other. Now, then, is the time—through careful coordination—to eliminate any contradictions or confusion.

Thought is being given to broadcasting radio “spots” and programs nationally to support the expansion of the integrated malaria initiative throughout Zambia. Any conflicts in malaria control policy, in recommended behaviors promoted by the communication strategy, or in health-care services provided by government or the private sector must be resolved before the malaria control program is extended.

MALARIA PREVENTION

Here are the most effective things you can do to protect yourself and your family from malaria:

- C Buy a mosquito net.** For maximum protection, get it treated with an insecticide. If you can, buy enough mosquito nets for the whole family.
- C Sleep EVERY night under a mosquito net treated with an insecticide,** even if you don't see mosquitoes. If you have only one net for the family, children and pregnant women should sleep under it.
- C Keep your net treated with an insecticide.** When you buy your net, it will be treated. If you wash your net, re-treat it after every three washes. If you do not wash your net, get it re-treated every 12 months.

Note that for the Eastern Province, the core messages refer to “PowerNets” and “PowerChem,” the brand names for insecticide-treated bednets and the insecticide used on them, respectively.

MALARIA TREATMENT

Here is what you must do to treat a person with malaria effectively:

- C When you first see the signs of malaria, start treating the person PROMPTLY with chloroquine at a clinic or at home.**

Here are the signs of malaria:

- C Body hotness and feeling cold at the same time**
 - C Shivering and sweating**
 - C Headache, body pains, or pains in the joints**
 - C Nausea and vomiting**
 - C Loss of appetite**
 - C Diarrhea (sometimes)**
- C Give the CORRECT dose.** Look at a dosage chart and give the correct amount according to the age of the patient.
 - C Give the COMPLETE, THREE-DAY DOSE of chloroquine.** Even if the fever goes away and the patient feels better, continue to give the COMPLETE three-day dose.
 - C If the fever does not go away after the second day, take the patient to the clinic.** The patient may have a type of malaria that is resistant to chloroquine and will require treatment with another malaria drug, which is best given under the supervision of a nurse or doctor.
 - C If you see any of the DANGER signs of malaria, take the patient immediately to a clinic or hospital. Do not try to treat the patient at home.**

Here are the DANGER signs of malaria:

- C Fitting (convulsions)**
- C Unconsciousness**
- C Unable to take medicine by mouth**
- C Unable to eat or drink**

Here are some additional things you can do to make the patient more comfortable:

- C Give Panadol***
- C Sponge the patient with cool water to reduce body temperature**

* A commercial antipyretic

3.2 Development and Dissemination of Communication Materials

The initial IEC strategy for the EPIMI is found in Appendix B. (As a “work in progress,” certain sections of the strategy contain working notes or questions to be resolved, indicated in ALL CAPS.) This version, as it appeared in July 1998, was incomplete; it provided only the “core” messages

that were to be communicated to the target audiences. It also listed and briefly described a number of communication channels that would be most effective in the Eastern Province. Technical assistance for the communication program was brought in rather late in the life of the project and too close to the time of the launch to allow for full development. Nevertheless, by the time of the launch, in September 1998, the IEC specialists had developed, distributed, or carried out the following materials and activities:

1. 2,000 pamphlets about malaria in Nyanja (A4 paper, folded in thirds, printed both sides)
2. 2,000 pamphlets (same size as above) about bed nets and treatment, in Nyanja
3. 500 four-color posters showing a child being given CQ syrup, with the following messages:
 - C Seek early treatment from your nearest health post.
 - C Make sure the health-care worker explains how to give the medicine at home.
 - C Complete all medicines as explained by the worker, even if the child feels better.
 - C Return to the health post immediately if the condition worsens.
4. 500 four-color posters showing a mother and child sleeping under the net with the following messages:
 - C Use treated nets to protect your self and your family from malaria.
 - C [Note that] children under five and pregnant women especially need protection.
 - C When you are pregnant, obtain malaria-prevention tablets.
5. A color pamphlet from the Society for Family Health extolling the virtues of PowerNets, in Nyanja (A4, folded in half, printed on both sides)
6. Performance by a local drama troop depicting bednet purchase and use
7. A mobile video unit used to promote bednets (although the video was underexposed, which made it difficult for people to see it) and
8. A public address unit mounted atop one of the project vehicles, used for community education and rallying announcements.

In addition, Zambian national television produced an hour-long report on the launch of the EPIMI.

3.3 Initial Monitoring and Evaluation Results

The critical importance of tight integration of the EPIMI components—effective marketing of bednets; health-care workers trained to teach, counsel, and encourage people to adopt the key malaria-prevention and -treatment behaviors; reliable supplies of chloroquine and SP; a community partnership program that organizes

NHCs and CHWs and build relationships between the health-care facility and the community; and the behavioral change communication program—was stressed in Chapter 2. As the initial phase of the communication program was implemented, monitoring revealed a few specific areas where the integration between components was not optimal. Efforts were made to correct these problems.

3.3.1 The EPIMI launch

The EPIMI launch in September 1998 was perceived more as a “bednet launch” than a full initiative against malaria. There were several reasons for this.

- C It was critical to start bednet sales while people still had some cash left from the sale of their crops, even if the rest of the initiative was not ready. As it was, the launch missed the optimum time by about two months, i.e., when people had the most cash in hand.
- C IMCI and CHW training lagged quite far behind the availability of nets.
- C It was easier to promote a physical product such as a bednet, which was new and novel, than to publicize health-care facility services, which were only being improved upon.

In concept and in practice, it is important to have in place at the start both bednets and malaria treatment (with CQ). Either intervention by itself will make some improvement in health but will fail to make a difference that people will be able to notice and talk about, and that will be self-reinforcing. For that to occur, both interventions (prevention and treatment) need to be working side by side.

3.3.2 Training health-care workers to be communicators

Inquiries into the CHW and IMCI training for clinic staff confirm that these cadres are now being trained to give the same messages about malaria prevention and treatment that are appearing in the printed materials. The “Health Beat” television programs and “To Your Health” articles in the newspaper received guidance from the health communicators to assure message

consistency.

3.3.3 Confusion about PowerChem

In one village, some people thought the PowerChem tablet was the same as the insecticide tablet used to protect cotton crops. They had been warned that the cotton insecticide is very dangerous. Careful investigation revealed that this idea was held by only a very small group of people who were related to each other. They were assured that the two tablets are not the same, and that PowerChem was very safe, even for babies. The staff have not discovered any others who think PowerChem is the same as their cotton insecticide.

3.3.4 Conflicting CQ dosage charts

A systematic search for and examination of CQ dosage charts and tables in Zambia was made. Seven different versions were found. Small differences exist between several of them, none of which is likely to cause an under- or over-dose of CQ. However, two glaring problems were discovered. First, as noted in Chapter 2, the dosage chart contained in the CHW Handbook shows that everyone from age five to adulthood should get the adult dose. How this mistake could have happened is a mystery. The problem is being addressed by the proper training of CHWs, and corrections are being made to the text of the CHW Handbook and guide. The CHW counseling cards and teaching flip charts—the primary educational tools of the CHWs—already carry the correct dosage information.

Second, the CHW drug kits come with dosage information for CQ and other drugs that is inappropriate for this audience. The language is too technical, being more appropriate for medical doctors. Furthermore, the instruction sheets refer the reader to the national drug policy for CQ which is not included in the kits and which might not be easy to find. Absent a copy of the policy, the CHW is left with a very complicated scheme for determining the correct CQ dosage; it requires the use of a weighing scale and a calculator, and a knowledge of the base amounts of chloroquine phosphate in a CQ tablet. The drug kits are

donated from abroad and are shipped sealed, so that a dosage chart cannot be inserted at the warehouse where they are stored.

Two measures are needed to correct this second problem. One is that a dosage chart for syrup and tablets needs to be given to CHWs at the time they are given their drug kits. Additionally, a copy of the chart should be given to all CHWs who presently have drug kits. The complicated dosage instructions currently used should be removed from existing kits and replaced. Secondly, future orders of CHW drug kits should specify that the recommended Tropical Disease Research Centre (TDRC) CQ dosage charts be enclosed.

3.3.5 Chemoprophylaxis during pregnancy

Preventing malaria during pregnancy is a matter that requires urgent attention. Currently, Zambia's drug policy calls for chemoprophylaxis by means of two 250 milligram tablets of CQ per week throughout the pregnancy. However, this policy is usually not followed in health-care facilities, often because chloroquine is not available.

Some health-care professionals say that an intermittent treatment with SP during pregnancy is a more effective preventive measure. This amounts to a dose of SP during the first, second and third trimesters of the pregnancy, with the third dose taken at least one month before delivery is expected.

However, this intermittent treatment regime has not been approved in Zambia. As a result, health communicators have been advised to omit any messages pertaining to the prevention of malaria during pregnancy until the drug policy issue has been resolved. Nevertheless, in anticipation of the approval of intermittent treatment, the monitoring and evaluation plan includes the following two measures:

- C ability of adults to identify the two groups at greatest risk of severe illness and death from malaria; and
- C the correct prophylaxis with an antimalarial during pregnancy according to the national drug policy guidelines.

3.4 The Revised Behavioral

Change Communication Strategy

Based on the results from monitoring the communication materials disseminated during the initial phase of the strategy, as well as the findings from focus group discussions and in-depth interviews with bednet users, the communication strategy was revised and developed into a more sustainable health behavior change communication strategy.

Decisions about what materials to keep in production and what to discard were based on their effectiveness on the target audiences, as revealed by monitoring. The elements that remain include the health-care workers' face-to-face encouragement of the key behaviors using the teaching aids that had been developed for them; the drama troop performances which drew large audiences and were getting better at promoting the key prevention and treatment behaviors; the mobile public address and video units which were useful in promoting net sales and health-care facility services; and the bednet marketing activity of SFH, particularly as the sales agents got better at encouraging people to sleep under a bednet every night, and not simply to buy bednets. All of the communication channels became carriers of consistent prevention and treatment messages that promoted the key behaviors.

The four-color posters and the first two pamphlets listed above were not repeated, because analysis showed they had little or no positive impact.

In addition, two new communication materials were developed. One was a chloroquine dosage chart created specifically to reduce the dosage errors made by health-care workers, mothers, and other caretakers of children, and to encourage caretakers to give the required three-day course of treatment. The dosage charts are in three formats: one for every counseling and treatment room of every health-care facility, one for every CHW drug kit, and one to be given with every CQ prescription.

The second new communication material is a pamphlet designed to encourage the combined use of bednets and treatment with chloroquine. In part, the pamphlet was designed to correct the impression given in the early bednet launch that the battle against malaria is best fought with a bednet. The pamphlet uses two symbols of

traditional African warfare: the *assegai* (a stabbing spear) for chloroquine to kill the malaria germs in the body and the ox hide shield as protection against the stings of mosquitoes. The title of the pamphlet is "Let's Come Together to Defeat Malaria" (see Appendix C).

Below are the elements of what is now a more complete and consistent health behavior change communication strategy:

1. Face-to-face persuasion by CHWs, neighborhood health committee members, and health-care facility staff, including
 - C using counseling cards for one-on-one work,
 - C using flip charts for small group work,
 - C providing consistent messages that encourage the desired behaviors,
 - C conducting periodic job performance monitoring.
2. Expanded use of drama troops in all project communities, with greater attention paid to developing stronger story lines that naturally allow inclusion of information about malaria prevention and treatment.
3. The mobile video unit.
4. The mobile public address system.
5. Mutually supportive work with SFH, including
 - C maintaining closer coordination on the next steps,
 - C improving PowerChem package labels to include a stronger message that the product is safe, even for babies,
 - C encouraging bednet sales agents to tap into motivations besides those related closely to health.
6. Assisting "Health Beat" and "To Your Health" with program content about malaria.
7. The "Let's Come Together to Defeat Malaria" pamphlet in Nyanja and Tumbuka, in both a three-color version and one color (to limit cost).
8. A CQ dosage chart that uses symbols more than text (see Appendix C), in three formats:
 - C a wall chart for clinics
 - C a chart for CHW drug kits, and
 - C a chart to be given with every CQ prescription.
9. Development of the child-to-child program and curriculum for primary and secondary schools was deferred because of limited staff resources.

Finally, it has been suggested that the potential be explored for using traditional healers of various types as allies in proper treatment of malaria. The health communicators will be determining whether traditional healers can be added effectively to the army of CHWs and

health-care facility nurses who encourage adoption of the key malaria prevention and treatment behaviors.

Implementation of the revised communication strategy began in December 1998.

4 CRITICAL SUCCESS FACTORS

This chapter focuses on what are thought to have been and will be the critical success factors of the EPIMI's health behavior change communication strategy. Factors considered critical are those which the project must have or cannot do without. (Several other factors are important for the success of the EPIMI and the other malaria initiatives, but they are better described as future measures needed to ensure the initiatives' continued success; hence they are included instead in Chapter 6, "Potential Next Steps.")

4.1 Conduct Qualitative and Quantitative Research Early in the Life of the Initiative

- C Anthropological research conducted for the EPIMI provided critical information about the cultural context into which the health interventions are being introduced.
- C Economic research has examined the affordability of bednets and CQ.
- C Sociological research revealed what people already knew and were doing to protect themselves against malaria, as well as where knowledge and behavior were lacking or incorrect.
- C A trial sale of 80 bednets early in the life of the project, followed by a series of focus group discussions and in-depth interviews, provided very useful information about the target populations' problems, likes, and dislikes with the product. The discussions and interviews also revealed motivations for buying and using bednets.
- C Sociological research revealed critical information about health service delivery problems that, if left unaddressed, would have severely affected the EPIMI's ability to succeed.

4.2 Select the Most Efficacious Health-Care Interventions

- C Holding in-depth discussions with malaria epidemiologists and medical experts was necessary to understand thoroughly the potential effectiveness of each of the intervention options. These discussions also enabled project implementers to appreciate the benefits and liabilities of each option, and to understand exactly what it is that target populations will have to know and do in order to realize the health benefits of combating malaria.
- C Professional differences among malaria experts and donors about the choices available among health interventions were discussed and clarified in the context of the health BCC strategy.
- C Once differences were resolved, health interventions that would be most successful in the Zambian setting were selected.

4.3 Select the Critical Behaviors to Be Encouraged

- C Define, and limit to a few, the critical behaviors that people will be able to perform and that will result in a noticeable improvement in their health status with respect to malaria; and
- C Drop from health messages those behaviors that are only marginally effective or are simply infeasible.

4.4 Identify and Use the Motivations of the Target Populations

It is more effective to use people's own motivations for changing behavior than to use the arguments of others to try to persuade them to change. During the IMI, people may have reasons for wanting to adopt the recommended behaviors that are unrelated to health but powerful enough to convince them to practice the behaviors. Such

reasons should be exploited.

4.5 Utilize the Community Health-Care Workers, Neighborhood Health Committee Members, and Health Facility Nurses as the Principal Channels of Communication

- C Despite the allure of mass media, face-to-face communication is the most influential of all communication media, especially when the objective is behavioral change.
- C More than a hundred health workers have already been trained in Eastern Province to communicate the key behaviors to their patients and clients and to encourage the behaviors' adoption. Many more will be trained as the EPIMI spreads to more communities.
- C Thus far, monitoring of the health-care workers' performance after training indicates that the performance deficits previously observed have been reduced substantially.

4.6 Take a Systems Approach

- C Recognize that health communication is an integral component of the malaria initiative, not an "add-on" activity.
- C Work in close cooperation with the initiative's other components, recognizing that if any one of the components, including health communication, underperforms, the effectiveness of the IMI will be blunted.
- C Recognize the synergistic effect that results when essentially the same message of encouragement or information reaches the target audience from multiple sources

(including nurses, community health-care workers, bednet sales agents, and so on).

4.7 Adhere to the Principle of Message Consistency

- C **Search out and eliminate conflicting CQ dosage information.**
- C **Make sure health-care workers are equipped to convey the "core" messages and encourage the "key" behaviors through integrated management of childhood illness and CHW training programs.**
- C **Appeal to all the partners in the malaria initiative—including USAID, UNICEF, WHO, and TDRC, among others—to reconcile message inconsistencies and maintain a common approach.**

4.8 Adopt a Comprehensive Monitoring and Evaluation Plan

- C **Measure project outcomes (malaria morbidity and mortality) as well as the processes needed to achieve the outcomes.**
- C **Specify performance targets to be met.**
- C **Define indicators, including indicators for the BCC strategy.**
- C **Identify methods of data collection and sources of data.**
- C **Prescribe frequency of data collection.**
- C **Assign responsibilities for data collection and analysis.**
- C **Provide health behavior change communication staff as well as project management with early indications of success or failure.**

5 PROSPECTS FOR SUSTAINABILITY

In order to permanently reduce the incidence

of illness and death from malaria in Zambia,

the integrated malaria initiative—including the projects of the government and its partners—have to be supported long enough for all the components of the initiatives to become fully developed and operational. Furthermore, promotion of the critical behaviors has to be continued until the behaviors are regarded as naturally occurring and normative.

The most fundamental factor that will affect the prospects for sustaining the EPIMI, or any other malaria prevention and control initiative in Africa, is the actual effectiveness of the selected health interventions, namely, the use of insecticide-treated bednets and the treatment of malaria cases with chloroquine (CQ). If these two health interventions are demonstrably effective in reducing malaria for communities and individuals, the initiative will be sustainable. Conversely, if the interventions are not very effective, no amount of behavior change communication, community participation, social marketing of bednets, or training of health-care workers will make the initiative sustainable in the long run.

We are not only concerned with the *actual* effectiveness of the two health interventions, but with their *perceived* effectiveness as well. Actual effectiveness is the primary and more fundamental concern, and, indeed, the malaria experts have made their case persuasively that these interventions will work. The health communicators and social marketers, however, must in turn make the case to the target populations that these interventions will work for them. That is, people have to perceive them to be working. This is not “smoke and mirrors” advocacy to deceive people into believing something that is not true. Rather, it is a process of making sure that people recognize the successes of the interventions that are occurring around them. A critical part of this process is when and how any of the results of the monitoring and evaluation activities are communicated to community members. This aspect is discussed further in Section 5.6 below.

Implicit in identifying the effectiveness of the health interventions as the fundamental factors in the initiative’s sustainability is an assumption about human nature: In most instances, people are economically rational.

That is, in the long run, they do not engage in behaviors that fail to produce results that reward them in at least equal measure for their efforts.

To achieve health benefits from the initiative’s interventions, specific behaviors have to be practiced accurately and regularly, as noted in Chapter 3. Accordingly, all the activities supporting the initiative have been chosen and designed to encourage the adoption and sustained performance of these behaviors. Furthermore, mechanisms have been built into the initiative to test whether the project activities are being carried out and whether the specific behaviors are being performed.

A review of the key behaviors, values, and other elements that will make the initiative sustainable follows. All the elements, behaviors, and values described in Sections 5.1 through 5.6 have also been built into the EPIMI’s design and are being incorporated into the design of the Copperbelt Integrated Malaria Initiative (CIMI) as well. With some differences, the same elements are integral in the Luapula Integrated Malaria Project (LIMI).

5.1 Improving Health Status and Reducing the Incidence of Malaria

It is the carefully considered opinion of malaria and medical experts that the sets of malaria prevention and treatment behaviors promoted by the EPIMI, if practiced, will bring about noticeable reductions in malaria. Their opinion is based on controlled studies and field experience. For example, a recent, controlled study of the effectiveness of treated bednets in Tanzania showed a 30% reduction in the incidence of malaria among regular bednet users. The use of CQ for the treatment of malaria has been practiced for a long time and its effectiveness is well recognized. However, if resistance to CQ continues to grow in Zambia, then a change to SP as the first-line antimalarial drug will be necessary. SP’s effectiveness as an antimalarial is not in dispute.

It is the professional judgment of the

medical experts consulted that the sets of behaviors, if practiced, will reduce suffering from malaria enough to encourage people to continue to perform them. In other words, the assumption is that these behaviors will be sufficiently rewarding as to be self-sustaining, assuming no serious external pressures such as economic collapse, uprisings, serious political instability, and the like occur.

5.2 Motivating People to Practice Healthful Behaviors

Zambians recognize malaria as a serious illness. They know from personal experience that malaria takes lives, prevents people from contributing socially or economically to their families and communities, costs money and time to treat, and makes them feel awful. While some may tend to accept it as a part of life, probably no one would resist being free of this miserable disease. Here, then, is the basis for the motivation of communities and individuals to at least practice the recommended behaviors.

The EPIMI has also discovered motivational factors besides those directly related to improved health. Both kinds of motivational factors must be used to promote the critical behaviors.

Behavioral change communication must effectively extol the values offered by adoption and regular practice of the desired behaviors.

The values expressed must be those of the people. They must “resonate” with the cultural values of the community, the clan, the family, and the individual. The articulation of these values must come primarily through face-to-face contact between the public and community health workers and nurses, but it must also be reinforced by print and graphic materials and mass media.

5.3 Reducing Barriers to Practicing Healthful Behaviors

While it is important to promote the desired behaviors, it is equally important to reduce or eliminate barriers that stand in the way. Making the performance of these behaviors as

easy as possible and encouraging the behaviors is what the EPIMI is all about.

Any barriers to buying and using bednets must be kept as low as possible. Affordable prices, reliable supplies, ease of chemical treatment and retreatment, relative freedom from bureaucracy, and a helpful attitude by net sellers toward customers are some of the potential factors that could encourage and support bednet sales and use. Health communicators and bednet marketers must work together to identify and reduce any obstacles to buying and using bednets.

Any barriers to obtaining prompt, correct, and complete treatment of fevers with chloroquine (CQ) also must be kept as low as possible. If not monitored, hurdles could result from unreliable supplies of CQ and sulfadoxine/pyrimethamine (SP) in the public and private sectors, impatient and discourteous health workers, bureaucracy at health-care facilities, and ineffective counseling about correct and complete dosages along with misdiagnoses and improper referrals of complicated cases. Health communicators and health-care service providers (and their trainers and supervisors) must work together to identify and reduce any obstacles to obtaining prompt, correct, and complete CQ treatment.

5.4 Teaching Specific Steps of Correct Behaviors

The description of behaviors in this report has been fairly general. In the day-to-day work of teaching, demonstrating, and promoting the critical behaviors, the behavioral change communication activities (which include counseling from health-care workers) and social marketing must be very specific about what steps people should take in adopting the recommended behaviors. Health-care providers and marketers must provide clear, simple, explicit demonstrations of the correct behaviors. Communicators must give praise, even for approximate performances of the behaviors so that regularity is increased. They must encourage practice so that accuracy is improved, and they must explain why the proper performance of these behaviors is important *in terms that are relevant to the*

audience.

5.5 Understanding the Importance of Early Efforts

The greatest expenditure of effort by health communication and social marketing must come early in the life of the Zambian IMIs. Once there develops a reasonably large base of satisfied “users—a kind of critical mass—the process of adoption will tend to become self-actuating, the effect of community norms will assist in encouraging more adopters, and new habits will have been formed.

5.6 Using the Monitoring and Evaluation Plan

All the IMI project people must be ready and willing to use the results of the monitoring and evaluation plan to guide the IMIs and quickly correct or bolster components that are underperforming. The health behavior change communication methodology is designed to take the results of monitoring and feed them back into improving, redesigning, and fine-tuning the initiative’s motivational messages. Chapter 3 provided a number of examples of how the communication strategy was redesigned in response to the results of monitoring.

The monitoring and evaluation activities will provide a rich mix of quantitative and qualitative information that can also be analyzed with each community both to increase their understanding of the results of their efforts and, if necessary, to adjust their efforts. This type of community involvement and dialogue can, in itself, help reinforce effective behaviors as well as identify needed adjustments. Involving people at the community level in information-gathering and analysis not only influences behavior but promotes participation, in an increasingly informed way, in decisions that affect their lives.

As information continues to be

disseminated to communities over time, the success of interventions can be measured, and topics for investigation gradually broadened. By facilitating community access to appropriate measurement technology, local evaluation capabilities are built in reiterative cycles. In this way, monitoring and evaluation provides the basis for sustained, critical dialogue on issues that affect people’s daily lives.

5.7 Considering Other Factors

In addition to the aforementioned factors that have to do mainly with the sustainability of the malaria prevention and treatment behaviors, the following programmatic considerations will play an important role in the sustainability of the EPIMI and the other IMIs as projects:

- C The staying power of the Government of Zambia through its Ministry of Health, Central Board of Health, and its broadcasting services;
- C The willingness of donors and international agencies to provide sufficient technical assistance for capacity-building and material resources to support the revolving fund which is the mechanism for buying bednets and chemicals;
- C The extent to which the new USAID-funded Zambia Integrated Health Project prioritizes its resources to combat malaria, as has the Basic Support for Institutionalizing Child Survival (BASICS) Project;
- C The ability of nongovernmental organizations to continue their roles in supporting the national malaria initiative;
- C The ability of the National Malaria Control Programme to manage the initiatives, especially as Zambia moves toward a national malaria initiative; and
- C Economic conditions, such as the cost of bednets and chemicals and the value of the kwacha relative to other currencies.

6 POTENTIAL NEXT STEPS

As noted earlier in this report, an integrated malaria initiative (IMI) consists of several key components. An IMI can be likened to a complex organism made up of interdependent parts: The only way to keep the organism working is to take a “systems” approach to it and recognize that if any of the components is allowed to fail, the organism as a whole will falter and may even die. Following this analogy, attention needs to be given to all the IMI components to keep them operating optimally. At this point in Zambia, however, some of the components need more attention than others, as certain ones are developing and functioning rather nicely while others are not. The following sections detail which components are the most problematic and the recommended actions to address them.

6.1 Solve the Problems Inhibiting the Flow of CQ and SP

A multi-faceted set of problems surrounding the availability and the policies guiding administration of CQ and SP involves a variety of players, namely, the Government of Zambia, the Ministry of Health, the Central Board of Health, health-care professionals, international agencies, and several donor nations. These cooperating partners should work together to find a way to make chloroquine and sulfadoxine/pyrimethamine (SP) available to the Zambian people at all times and in sufficient quantity.

At least one effort is underway so far in this regard: the USAID-sponsored Rational Pharmaceutical Management (RPM) Project. The RPM Project is working to resolve availability and policy problems surrounding all drugs, including antimalarials. This effort should be continued—and strengthened, if necessary—to ensure an adequate and reliable flow of drugs.

The problems are not just with the supply of drugs, however. They also have to do with policy issues relating to the choice and administration of drugs. Zambian and international health-care professionals are engaged in a vigorous debate about the choice of first-line drug for malaria. Although there is a policy, the debate continues with such vigor that some may feel emboldened to follow their own course. From the admittedly narrow point of view of effective health behavior change communication, the consequence of departures from policy is to confuse and cloud the message that CQ should be administered promptly, correctly, and completely whenever a fever is present.

As mentioned earlier, an even more vigorous debate is being waged over the matter of chemoprophylaxis for pregnant women. While the debate and policy formulation continue, health communicators have been asked to withhold advocacy messages about chemoprophylaxis during pregnancy. In the meantime, pregnant women may not be well protected against malaria.

USAID, UNICEF, WHO, TDRC, and NMCP—the proponents of the IMIs—must encourage the parties to solve these problems surrounding the choice and supply of antimalarials.

The IMIs, through their communication activities, are stepping up demand for antimalarials. If the demand is not met, a public outcry will emerge and compromise the initiatives’ effectiveness.

6.2 Stronger Partnering between the IMIs

As stressed earlier in the report, maintaining message consistency is critical to the IMIs’ effectiveness. Progress has been made in this regard, but some inconsistencies and

unknowns remain. The time to correct these inconsistencies is now, before the IMIs become heavily invested in messages that might later have to be changed. "Later" will come as soon as the mass media are used extensively to promote proper treatment of malaria cases and the use of treated bednets. Furthermore, health communication costs will rise if behaviors that have been promoted have to be retracted. More serious will be what appears to the IMI audiences to be conflicting advice from one IMI to the target population of another, conveyed by the mass media.

The process of maintaining message consistency among and between the IMIs will be helped if the following steps are taken.

- C** Learn from UNICEF's experience in Samfya (LIMI). This is the longest-running bednet and malaria-treatment program in the country.
- C** Continue to bring Kitwe (CIMI) on board. The same health communicators who have been working on the EPIMI are also working on the Copperbelt Integrated Malaria Initiative in Kitwe. This work will continue under the Zambian Integrated Health Project (ZIHP).
- C** Coordinate the TDRC/WHO activities with those of the IMIs. These activities, to date, have been operating independently of EPIMI and LIMI. The first opportunity to find out what each of the projects is doing came at the Inter-District Meeting in Chipata in November 1998. At that point, EPIMI, LIMI, and CIMI materials were shared with TDRC/WHO. Copies of TDRC/WHO's materials, however, were unavailable. The potential for sharing design and production costs of communication materials and for mutual reinforcement of the core messages across project boundaries is great.
- C** Bring the IMIs under the control of one organization. On paper, that organization would appear to be the NMCP. However, the transition from TDRC to NMCP is still in process at this writing. Meanwhile, many eager and willing partners abound in the malaria initiatives, and in their understandable impatience to see and be able to show positive results, one of them

may charge off independently and thereby disrupt whatever harmony has been achieved between the IMIs.

In addition to the above recommendations, the following factors related to bednets should be noted in planning the next steps for the IMIs.

- C** The introduction of technical assistance from the Japanese International Cooperation Agency (JICA) promises great benefits for the IMIs. Fortunately, this infusion of new resources for the IMIs is not going to cause major changes in the design of the BCC or marketing strategies or materials. However, there will be some variations that will have to be accommodated. First, EPIMI and CIMI will use the "PowerNet" brand name. However, a net of different specifications that will be unbranded will be distributed by UNICEF in LIMI. (LIMI has never used the product names "PowerNet" and "PowerChem," and the implementers found these product names a little "glitzy" for their tastes.) Second, JICA will procure insecticide via a tender. It may be the AGRO deltamethrin, sold in Eastern Province and Kitwe as "PowerChem." However, it could be another manufacturer's brand, in which case the retreatment instructions may have to be revised slightly, depending upon the packaging of the company that wins the bid. While the formula of the insecticide may be different, the bidding specifications will require that the retreatment interval be the same. Finally, JICA will use the same specifications that SFH and BASICS used to procure "PowerNets," so the nets will all be the same size, shape, and color.
- C** The relationship between SFH and the new ZIHP project may require more effort to remain closely integrated. The administrative relationship appears to be more distant, and their new offices in Lusaka are farther apart. In particular, more effort needs to be made to bring SFH and the social marketing of bednets into the planning and operation of the behavior change communication strategy and other

components of the national malaria initiative. There is tremendous potential for synergy between marketing and behavioral change communication if they are fully integrated and mutually reinforcing.

6.3 Expand and Improve the Use of Communication Media and Overall Communication Efforts

The capacity to use mass media should be improved as the IMIs expand. USAID has started a mass media initiative that covers the six Zambian health-related “thrusts,” including malaria. As of late November 1998, this initiative included a three-minute “Health Beat” television program, broadcast midway through the national evening newscast on Tuesdays, with a repeat broadcast shown on Fridays. Plans call for the program to be adapted for radio; however, the broadcast schedule is unknown at this writing. Additionally, the weekly companion piece “To Your Health” appears in the *Times of Zambia*. All of these materials are in English only.

If what is described above constitutes the extent of the mass media effort on behalf of the IMIs, it will not significantly influence the behavior of the target populations. The largest benefit of the television and newspaper pieces will be to inform Zambia’s opinion leaders and policymakers about the malaria initiatives, which is useful. The impact on the target IMI audiences, however, will be very small because of language limitations, lack of access to television, and short and infrequent broadcast times.

If the IMIs want to reach their target populations and influence their behavior, radio would be the best medium to add to the BCC strategy because it bypasses the literacy barrier and reaches a large percentage of rural people. Additionally, radio costs less to use than TV or print, not only in absolute terms but in terms of the cost per thousand to reach the target audiences.

In the near term, only the malaria treatment, rather than both prevention and treatment, behaviors should be promoted via

mass media, as insecticide-treated bednets are not yet widely available. However, in the Copperbelt Province (Kitwe), both treatment and prevention behaviors could be promoted by radio, through independent FM stations whose coverage is limited to that area.

Specific recommendations about who needs what kind of radio production training and how radio could be utilized should be developed via a study of the situation that leads to a radio and mass media strategy recommendation. The development of a radio strategy could also be a regional effort involving at least the malaria initiative in southern Malawi.

Improved communication efforts should also entail continued training of community health-care workers, neighborhood health committee members, and health-care facility staff in the effective use of communication materials. Three things, in particular, need to be done. First, training should continue as the number of rural health centers and catchment areas expands. Second, some who received training early on, before the IMCI training incorporated the use of communication material, may need additional teaching. (Experience has shown that simply giving a CHW a teaching flip chart or a counseling card and expecting the individual to use it effectively is unrealistic.) Finally, monitoring health-care workers’ effectiveness in encouraging people to perform the desired behaviors must be continued. Workers should be taught to praise target populations for good performance and retrain the behaviors when necessary.

Communication efforts could also benefit from the development of large quantities of inexpensive health communication materials that people can keep in their homes. The subject matter of these materials should be developed in response to the particular information needs of the audiences they serve, keeping in mind that these audiences will grow and change over time. The highest-priority materials are the following:

- C CQ dosage charts printed on half-sheets of paper, to be given out with every CQ prescription whether originating from health-care facilities or pharmacies;

- C** The pamphlet “Let’s Come Together to Defeat Malaria,” that promotes both prevention and treatment behaviors using the cultural symbolism of the traditional shield and stabbing spear (this pamphlet can be used for net sales promotion, as well);
- C** Pieces that will be developed to promote particular behaviors that are only slowly being adopted (for example, to counter people’s tendency to use bednets only in the rainy season); and
- C** A bednet sales brochure to be developed and timed for June, July, and August 1999 when rural farm families have cash from the sale of their crops. The brochure should explain the various benefits of buying and regularly using bednets.

In addition to CHWs and others involved in the IMIs, District Health Management Teams (DHMTs) should be given a better understanding of the role of behavior change communication in their work. At the Inter-District Meeting in Chipata in November 1998, many DHMT members seemed unclear about some important aspects of effective health behavior change communication. For example, many tended to think of it as only “education of the public about their health.” They believed that if people only understood health issues, they would do what they are supposed to do. Most did not appear to understand that a communication strategy exists primarily to promote specific, desirable health-related behaviors. Additionally, some team members regarded communication as something they “ought” to have in their action plans and budgets, and many tended to treat it as an “add-on” activity, rather than an activity fully integrated with the rest of their plans. Finally, most tended to think of communication as the distribution of print materials; most did not recognize their trained CHWs and nurses as behavioral change agents who use the print materials as tools.

As a complement to modern health-care workers, USAID has suggested doing a study of traditional healers and their potential role in promoting proper treatment of malaria. Given the powerful and pivotal role of traditional medicine in community life, the potential of

adding traditional healers to the cadre of behavioral change agents should be explored.

The communication strategy is designed to deliver essentially the same core messages to the target audiences through several communication channels, a tactic that is known to produce a synergistic effect or impact on the audiences. Additionally, by utilizing several communication channels, the strategy can respect the individual communication needs of specific behaviors.

6.4 Improve the Bednet Sales Process and Promote the Regular Use and Retreatment of Nets

The cost of bednets to the consumer is the greatest barrier to the success of the IMIs. The rapid devaluation of the kwacha, if not compensated for by increased subsidization, will make the nets even more expensive. If prices cannot be lowered and/or the rate of subsidization increased, the projects’ revolving loan fund will shrink to nothing very quickly, making the projects technically bankrupt.

To date, SFH has been using only the potential health benefits of bednets to encourage people to buy them. Yet, it has already been discovered that people have other, non-health-related reasons for buying and using nets. These motives may be more powerful than the health-related reasons. To continue to limit the social marketing of bednets to health-related reasons is to blunt the marketing’s effectiveness.

Because of the sleeping arrangements that are culturally acceptable, households will have to have more than one bednet if the IMI target populations are to be protected. As explained in an earlier chapter, the first net a household buys will most likely go to the male income earner. A second net will have to be purchased for the most vulnerable members of the household, children under five and pregnant women. Encouraging households to buy more than one net is going to be a challenge, but it is challenge that must be met if the IMI goal of protecting children under five and pregnant women is going to be realized.

Because June through August 1999 offers

the next peak sales opportunity, bednet marketers should engage in intense marketing activity starting in April, making certain that the supply of nets anticipates demand.

Ordering and taking delivery of nets is a long process that has the potential for unanticipated delays. The peak sales period is short, and if nets are unavailable, people will spend their scarce cash resources on other badly needed items.

Nets must be retreated after the third wash or after one year, whichever comes first, to maintain maximum effectiveness. Retreatment constitutes a significant expense (K2,000) and is a process most net owners have observed but not practiced. The expense will loom large for people, particularly if it comes at a time when they are short on cash. The strongest motivators to encourage retreatment may be the ring of dead bugs bednet users say they see on the floor in the morning after using the nets, as well as the nets' ability to deter lice, bedbugs, and roaches in mattresses. Freedom from these insects may be the strongest motivation for retreatment.

At the risk of stating the obvious, it must

be the principal objective of the IMIs to encourage people to sleep under a treated bednet every night. *Bednet sales figures should not be a measure of the success of the IMIs.* Net sales are a necessary step in reducing the incidence of malaria, but if not used regularly, there will be little or no improvement in health status.

Indeed, convincing the target populations to sleep under the nets nightly may be nearly as difficult as convincing them to buy the nets. It is a new behavior, unlike taking CQ, and two specific problems have already been detected in association with using the nets: the misperception that malaria occurs only seasonally, and the discomfort the nets can cause on hot summer nights by trapping body heat and reducing air movement. The IMIs should use qualitative research techniques to explore these problems with target families and individuals, in order to design messages that will encourage correct behaviors. People have shown ingenuity in figuring out how to hang nets. It is likely that they will also find solutions to these two problems.

APPENDIX A: LIST OF CONTACTS

Attendees at a Planning Meeting held at EHP (June 4, 1998)

Dr. Carol Baume, Senior Research & Evaluation Officer, AED
Ms. Patricia Billig, Senior Technical Director, EHP
Dr. Dennis Carroll, Director AIMI, USAID/Global Bureau
Dr. Mary Ettling, Malaria Specialist, USAID/Africa Bureau
Mr. Michael Favin, The Manoff Group
Mr. Michael Gabra, Rational Pharmaceutical Management Project
Ms. Marcia Griffiths, The Manoff Group
Ms. Lisa Jamu, Product Manager, PSI
Dr. S. Patrick Kachur, MD, MPH, CDC
Dr. Michael McDonald, BASICS Project
Ms. Jill Rizika, Program Manager, PSI
Dr. Pandu Wijeyaratne, Program Director, Tropical Disease Prevention, EHP

In Lusaka

Ms. Gifty Ahadzie, DAPEG International
Dr. Wilfred S. Boayue, MD, WHO Representative to Zambia
Ms. Uttara Bharath, Program Assistant, JHU/PCS
Mr. Fred Boye-Okot, DAPEG International
Dr. Ellie Burleigh, Community Participation Advisor, ZCH/BASICS
Ms. Grace Chee, Consultant, Partnerships for Health Reform
Mrs. Peggy Chiboye, Senior Public Health Specialist, USAID
Mr. John Chimumbwa, Malaria Consultant to UNICEF
Mr. Robert Clay, HPN Director, USAID/Lusaka
Ms. Peggy Fulilwa, Manager, Service Support (Pharmaceuticals), Central Board of Health
Ms. Susan Gilbert, Consultant, National Health Reform Advocacy Campaign
Dr. Rodwell Kafula, Public Health Physician, BASICS Project
Ms. Mary Kaoma, Child Health Advisor, BASICS Project
Mr. W. Kapelwa, National Malaria Control and Research Centre
Mr. Alex Katambala, Johns Hopkins University Family Planning Project
Ms. Susan Leonard, U.S. Peace Corps Health Program Evaluator
Mr. Brad Lucas, Director, Society for Family Health
Dr. Onehese Mboyo, Head, Environmental Health Technologist Programme, Chainama College of Health Sciences
Dr. Mubiana Macwangi, Monitoring and Evaluation Specialist, BASICS Project
Mr. Michael McGunnigle, Administrative Officer, BASICS Project
Ms. Ann Matthews, Johns Hopkins University Family Planning Project
Mr. Crispin Melele, Head, IEC Programme, Central Board of Health
Mr. Zephania Mkumbwa, UNICEF
Mr. Chris Mukkuli, Marketing Manager, Society for Family Health
Mr. Rory Nefdt, Director, National Malaria Control Programme
Mrs. Josephine Nyambe, IEC Specialist, BASICS Project
Dr. Chilunga Puta, Deputy Director, TDR
Ms Chistine Rudert-Thorpe, Assistant Project Officer - Health, UNICEF
Dr. Trenton Ruebush, M.D., Chief, Malaria Epidemiology Section, CDC/Atlanta
Ms. Elizabeth Serlemitsos, Johns Hopkins University Family Planning Project

Mr. Lamba Simpito, Special Project Coordinator, JHU/PCS
Dr. Remi Sogunro, Physician/Chief of Party, BASICS Project
Dr. Donald M. Thea, M.D., ARCH Project Scientist, Harvard Institute for International Development
Dr. Paul Zeitz, Senior Policy Officer, USAID, and Technical Advisor, Central Board of Health

In Chipata

Ms. Malia Boggs, U.S. Peace Corps Volunteer, EPIMI
Mr. Chela, Assistant Secretary, Eastern Province
Ms. Paul Kalapwe, Illustrator
Mr. John Kambaila, Town Clerk, Chipata
Mr. Charles Kamuzimbe, Environmental Health Technologist, Jerusalem Health Clinic
Mr. Maguya, Chief of Ngoni people, Jerusalem area
Ms. Esther Mambwe, IEC Specialist, TDRC
Dr. Fred Masaninga, Entomologist and Project Coordinator
Mrs. Grace Miamba-Mwale, Office Manager
Mr. Derrick Mumba, ITN Product Specialist
Mr. Benson Musonda, Environmental Health Technologist, DHMT
Ms. Charity Nalwamba, Training Coordinator
Ms. Shannon Scribner, U. S. Peace Corps Volunteer, Mutubai
Mr. Nick Venter, Computer Graphics Designer

In Ndola

Dr. Thomas T. Y. Sukwa, Director, Tropical Diseases Research Centre

Appendix B: DRAFT TDRM Malaria Control Programme IEC Strategy for Chipata, Lundazi, and Chama Districts, Eastern Province, Republic of Zambia

The health communication strategy that is summarized on Tables 1 and 2 and described on the following pages was designed using a five-step process. This design process was developed and refined through the experiences and lessons learned in the Mass Media and Health Practices and the Communication for Child Survival (HEALTHCOM) projects. The U.S. Agency for International Development funded these projects over a period of 17 years.

The process includes the following five steps and helps one to plan and conduct a long-term communication program that encourages specific, sustained behavior change in large target populations:

- # Assess
- # Plan
- # Pretest
- # Deliver
- # Monitor

The five-step process has been used worldwide with great success. The process is not a linear one, but a cyclical one. The results of evaluation are fed back into subsequent iterations of the communication program, correcting any deficiencies and allowing the programme to grow as the target population gains in knowledge and skills.

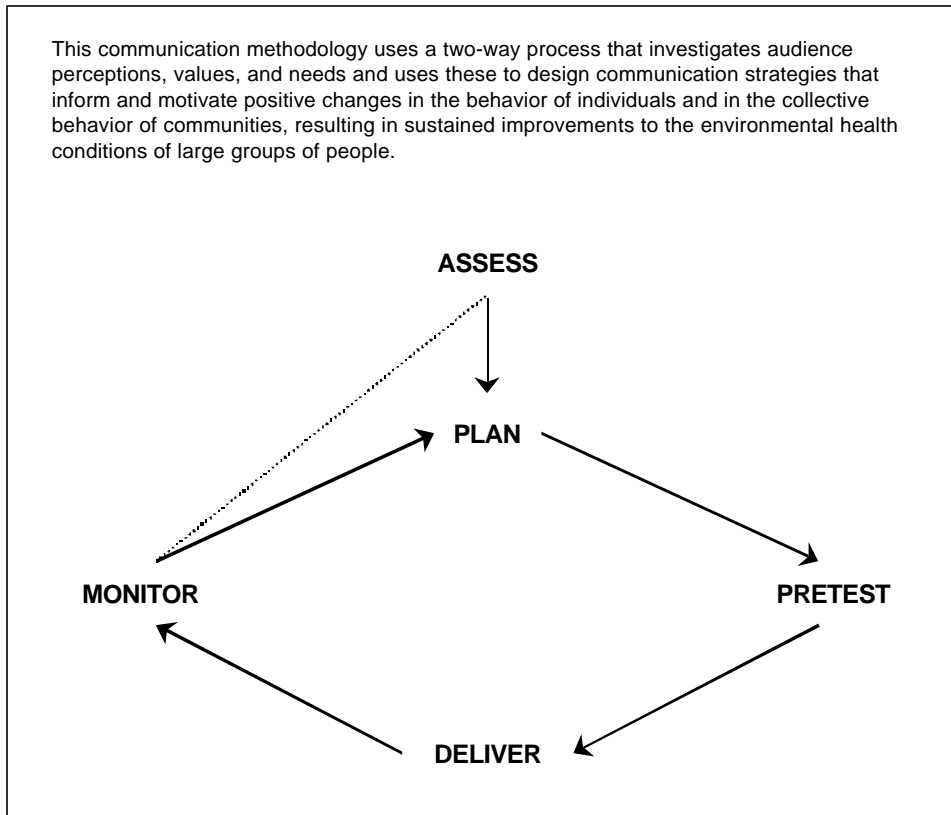
The process must be a collaborative, cooperative activity between a variety of partners, each of whom brings necessary expertise and capacities to the exercise. Medical doctors, malaria epidemiologists, trainers, social marketers, social science researchers, health workers, and health communicators team up to plan and implement a health communication strategy.

The ultimate objective of this five-step design process is a health communication strategy that results in a significant improvement in public health. Therefore, the five-step process is focused on encouraging specific, positive health behaviors, and just not on awareness and knowledge about malaria prevention and treatment. The communication strategy rewards people for maintaining positive health behaviors that are already being performed. The strategy promotes the adoption of new behaviors where needed, and encourages improvements in the accuracy and regularity of current health behaviors. Occasionally, a communication strategy may need to discourage behaviors that impact negatively on the health of people.

The five-step process must be institutionalized. USAID and the BASICS Project are committed to assisting the Tropical Diseases Research Centre of the Republic of Zambia to further the development of its National Malaria Control Programme. Other partners such as WHO and UNICEF are committed to the same end.

Finally, the public health communication strategy becomes a programme that must be continued into the indefinite future. The malaria mosquito is not going to be eradicated any time soon. The search for a vaccine is on going but a vaccine is not on the horizon. Zambians are being born who will need to learn effective malaria prevention and treatment techniques.

Figure 2
A Five-Step Communication Design and Implementation
Process to Encourage Healthful Behaviors



The Five Steps

1.0 Assess

The first step is to understand the malaria problem in the communities in which the work is to take place. It is extremely important to understand the malaria problem *as the people in the communities see the problem*. In order to achieve this understanding, formative research needs to be conducted in order to get to know the people: what do they presently know about how malaria affects their health and what do they currently do (or not do) which puts their health in jeopardy? Why do they behave as they do? (People almost always have good reasons for their behavior.) What interest do the people have to adopt the health behaviors related to malaria prevention and treatment that are recommended? What solutions to the malaria problem do the people themselves already have in mind? How can large numbers of people be encouraged to practice these behaviors correctly and regularly so that they get the full health benefit? What can be said or shown to them that would motivate them to “buy” and use these behaviors? How can it be detected early in the implementation process whether the health communication plan is succeeding and the behavior of people is changing in the desired ways?

Communication Strategy
TDRC/Eastern Province Malaria Control Programme

TABLE 1 - MALARIA PREVENTION			
Key Behaviours	Communication Activities	Training Activities	Logistical Requirements
1. Buy a mosquito net (Power Net) from your local sales agent	SFH promotion: face-to-face promotion by sales agents, SFH sales poster, SFH video; drama troop story line: "Buy a net or something else?" Child-to-Child Programme	Sales agents trained in sales, accounting, re-ordering methods	Sales agents must have nets available for sale
2. Get the net treated with Power Chem by sales agent	SFH promotion and sale includes first treatment; Child-to-Child Programme	Sales agents trained in treatment technique	Sales agents must have Power Chem on hand
3. Hang the net following suggested methods (or use ingenuity and common sense)	SFH promotion video to show hanging techniques for a variety of home structures	None required (early experience shows that people are quite capable of hanging a net properly)	Mobile video/audio unit operational
4. Give priority to C Children under five C Pregnant women	Teaching flip charts, counseling card used by CHWs; drama troop story lines about "Who gets the net?" and "Child is ill; father or child leaves the net?"; Child-to-Child Programme	CHWs trained to use teaching flip charts and counseling cards	Teaching flip charts and counseling cards in the hands of all CHWs and clinic staff
5. Sleep every night under the net	Teaching flip charts, counseling card used by CHWs	CHWs trained to use teaching flip charts and counseling cards	Counseling cards in the hands of all CHWs and clinic staff
6. Tuck the net under mattress or mat	Counseling card used by CHWs; teaching flip chart	Teaching/monitoring by sales agents	Teaching flip charts available; demonstration provided by CHWs or sales agents
7. Get the net re-treated by your sales agent C if not washed, re-treat every 6 months C if washed, re-treat after every two washes	Solicitation by sales agents; SFH video demonstrates; Counseling card used by CHWs; Child-to-Child Programme	Sales agents trained in re-treatment technique; sales agents trained to follow up with clients to encourage net re-treatment on time	Sales agents must have Power Chem on hand

TABLE 2 - MALARIA TREATMENT			
Key Behaviors	Communication Activities	Training Activities	Logistical Requirements

TABLE 2 - MALARIA TREATMENT

<p>1. Recognize the early signs of a malaria attack and seek/give prompt treatment</p> <p>2. Give/take the correct dose of Chloroquine</p> <p>3. Give/take complete three-day Chloroquine treatment</p> <p>4. Cool the patient's body with a sponge bath</p> <p>5. Take Panadol to reduce the pain of headache</p> <p>6. If the patient's temperature does not fall by the end of the second day, take the patient to a clinic.</p> <p>7. If the following DANGER SIGNS appear, take the patient to a clinic immediately. Do not try to treat them at home.</p> <ul style="list-style-type: none"> C Fitting (convulsions) C Unconscious C Unable to take medicine by mouth C Unable to eat or drink 	<p>Teaching flip charts (text and pictures) used by CHWs to educate and encourage groups of caretakers to give prompt, correct, and complete treatment with Chloroquine</p> <p>Counseling cards to be used by CHWs for individual instruction and encouragement of correct treatment behaviors</p> <p>Correct dosage information in health record booklets</p> <p>Correct and complete dosage information on charts on the wall of all clinic treatment rooms</p> <p>Prompt, correct and complete dosage information on SFH poster/calendars</p> <p>Full malaria treatment information contained in drama troop skits</p> <p>Full malaria treatment information in Child-to-Child Programme</p> <p>Malaria treatment information introduced into primary and secondary schools</p>	<p>IMCI and PHP training of all health clinic staff covering:</p> <ul style="list-style-type: none"> C more positive attitude toward patients C taking malaria histories without scolding, criticizing C better teaching technique C more efficient patient handling methods C encouraging correct malaria treatment behaviors C encouraging prompt treatment of malaria at home <p>Teachers, community volunteers trained in Child-to-Child technique</p> <p>Teachers trained on the use of these materials</p>	<p>IMCI and PHP training programmes offered to all clinic staff</p> <p>Adequate supplies of teaching flip charts, counseling cards, dosage charts, Chloroquine prescription instruction slips for clinics and CHWs</p> <p>Adequate and reliable supplies of Chloroquine at all health facilities and in the kits of all CHWs</p> <p>Resource materials on malaria treatment developed and supplied</p> <p>Educational resource materials on malaria treatment developed and supplied</p>
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1.1 Health Problem Analysis

Malaria is Zambia's leading health problem in all age groups. The disease leaves people feeling miserable, it causes them to lose days of work and school, and repeated attacks can eventually leave people unable to work. Malaria is responsible for most of the deaths at health centres and hospitals.

Field research in Eastern Province shows that most people are not taking any effective steps to prevent exposure to mosquito bites. Chemoprophylaxis is rare in this population.

Malaria is so common in Zambia that many people think that getting fever cannot be avoided. But this is not true. Malaria attacks can be reduced through preventive measures, and effective, low-cost treatment is available.

In Zambia at this time, the first-line drug of choice is Chloroquine. However, there is growing evidence of Chloroquine resistance. The second-line drug is Fansidar for the treatment of cases where a correct and complete dose of Chloroquine has failed to bring relief. A second round of Chloroquine given orally or intravenously is not appropriate if the first treatment dosage was correct and complete.

While anyone and everyone can get malaria, it is children under five years of age, pregnant women, and people with long-term diseases (such as tuberculosis or AIDS) that are at greatest risk to their health. As a result, it is these targets in the population that are the special focus of the National Malaria Control Programme.

1.1.1 Epidemiological analysis

Malaria is endemic in all regions of the country. The Eastern Province is of special concern because high levels of Chloroquine resistance have been detected. This is one of the reasons why the National Malaria Control Programme was sited in Chipata. In addition, the BASICS Project already had a Community Partnership Programme underway so there is an existing framework and set of agreements already in place. Six target communities were selected, two in Chipata District (Jerusalem and Mshawa), two in Lundazi District (Mwase-Lundazi and Kapichila), and two in Chama District (Kambombo and Chama *boma*).

The prevalence of malaria is higher in children under five years of age. While at birth an infant gains a measure of resistance to malaria from its mother, this resistance wears off quickly. The child can only gain its own resistance if it undergoes one or more bouts with the disease. This is very risky for the child. If the child survives, however, the child will develop some resistance. Therefore, children under five have been targeted for the National Malaria Control Programme.

Pregnant women are also an important target group in the population because of the deleterious effect malaria has on the course of the pregnancy and on the development of the foetus.

A third target group are those with a chronic illness that has deprived them of their health or damaged their immune systems.

Malaria has traditionally been regarded as a rural health problem. However, in recent years the urban and peri-urban populations have been experiencing a growing incidence of malaria. The urban population tends to be economically better off, on average, and usually enjoys easier access to medical facilities. Thus, it is the poorer rural population that lives far from health facilities that is most in need of malaria prevention and treatment strategies to protect their health.

1.1.2 Behavior analysis

To date the TDRC, with support from the BASICS Project, has undertaken a variety of formative research in the Eastern Province in order to more fully understand the knowledge people have about malaria, their attitudes towards it, and, most critically, their prevention and treatment behaviors. These research studies have yielded the following information (summarized here in highlight form).

1.1.2.1 Current knowledge and behaviors

- C High levels of awareness of malaria as a disease already exist.**
- C People ascribe a variety of causes, but in almost all instances, mosquitoes were correctly identified as either the sole cause or one cause among a few others (which are not correct, according to Western medicine).**
- C A high percentage of the population (about 80%) recognize the signs of malaria. A fever is the principle symptom.**
- C Mothers have been found to be able to detect the onset of the disease at a very early stage among their children through such signals as loss of appetite and drop in the level of play. These signals appear even before a fever develops.**
- C Most caretakers know that they should seek treatment for malaria from a health facility or from Community Health Workers. This latter source of treatment often is unproductive because the CHWs often do not have any Chloroquine.**
- C Some caretakers choose to treat malaria at home. They buy Chloroquine from small shops in their communities or from chemists (pharmacies).**
- C Many people know and can name the drug, Chloroquine. They understand it to be an effective treatment for malaria. Many will admit that traditional remedies are not nearly as effective. A portion of the population is aware of the development of resistance to Chloroquine. A smaller portion knows of Fansidar.**
- C In the target communities that have been studied, there is fairly widespread knowledge of the existence of mosquito nets and, to a lesser extent, some understanding of the protection that nets offer. However, very few of the household actually own a net at this time. The nets in use at this time are not insecticide-treated nets (except for the 80 nets provided through the Project in the Eastern Province and the approximately 7,000 ITNs sold by the Samfya Project) .**

NOTE: Some malaria epidemiologists and medical experts remark that there are many causes of fever, in addition to malaria. These people feel that little harm would be done if the caretaker waited a bit (for example, over night) before beginning Chloroquine treatment at home or taking a child to a clinic in the morning. If the fever goes away, Chloroquine treatment need not be started.

1.1.2.2 Barriers in the way of desired behaviors

The formative research reveals that there are a number of factors that discourage prompt treatment with Chloroquine. Among these are:

- C Long distances to the nearest health facility with the attendant high costs of time and transport. The catchment areas of clinics are large. Walking times can be as long as three hours, one way. Bus fare for such a trip might be as much as 5,000 Kwacha, one way.**
- C Fear of being scolded by health facility workers for failure to respond appropriately to the situation. A caretaker may not know what is appropriate or may not have been able to respond appropriately because of circumstances beyond their control.**
- C Expectation that the health facility may be out of Chloroquine with the conclusion that a trip there will be useless.**
- C Anticipation that they may be required to travel to the health facility three successive days in a row in order to receive their daily dose of Chloroquine.**

1.1.2.3 Performance deficit: Incorrect dose taken/given

There is also evidence that malaria sufferers are not receiving the correct dose for their body weight. According to the formative research, this occurs because

- C Health workers do not take the time to carefully explain the dose to caretakers**

- C** Nurses leave the job of instructing the caretaker to the person who dispenses Chloroquine who is often the least well-trained person in the health facility
- C** Caretakers cannot remember the correct dose once they reach home with the medication. It is important to recognize that the dosing instructions are complex, being different for Chloroquine in syrup and tablet form and different for seven age ranges between birth and 15 years of age and older. Mothers are not given the dosage in either text or symbolic form.
- C** Health workers, themselves, may not have the correct dosage for any given age range committed to memory and they do not have a dosage chart readily at hand.
- C** Chloroquine can be purchased in a pharmacy or in even the smallest village shops. However, the person selling Chloroquine does not know the correct dosage for each age range and has nothing to refer to.

1.1.3.4 Performance deficit: Incomplete dose

There is evidence that a complete course of Chloroquine treatment often is not taken. The caretaker observes that the patient gets better by the second day and stops treatment in order to save some of the Chloroquine for home treatment that is likely to be needed at a later date. This is a serious problem because the patient is likely to endure another attack in about two week's time. It is also serious because an incomplete treatment contributes to the more rapid development of Chloroquine-resistant malaria.

The specific behaviors that cause the malaria health problem are:

- C** Malaria mosquitoes have abundant places in the village environment. While some of the sites occur naturally, some are made or caused by human beings. It is important to understand that malaria mosquitoes do not breed in tin cans, discarded automobile tyres, plastic containers, rubbish, and the like. They are finicky about where they breed and always choose "natural" sites that have clean, still, or slowly flowing water. They do not breed in sewers or water-filled latrines. (Other biting insects and nuisance insects—including mosquitoes that cannot transmit malaria—may breed in such man-made sites, however.)
- C** A significantly large percentage of the human population is infectious with malaria, either because they do not get treatment, because they do not finish the full 3-day course with Chloroquine, or because they contract a Chloroquine-resistant strain of the malaria. It is therefore relatively likely that a mosquito can become a carrier of the disease by taking a blood meal from an infectious human and passing the disease on to other humans through their biting activity.
- C** Very few people presently take effective preventive steps to reduce the possibility of being bitten. Mosquito nets currently available from commercial sources are expensive (approximately K18, 000) in relation to the typical income of the rural population. They are also not very widely available and those that are available are not treated with insecticide. Window and door screening is prohibitively expensive, and in any case typical house construction techniques leave a gap between the top of walls and the roof structure. The government has largely stopped its mosquito spraying programme for economic reasons and household sprays available in the retail market are expensive and cannot begin to knock down the mosquito population to any important extent. Mosquito repellents are also expensive relative to the rural economy and are short-lived.

Profiles of Effective Malaria Prevention and Treatment Behaviors

Malaria and medical experts are providing clear and consistent advice to the malaria communication programme about treatment and prevention behaviors. The IEC specialists have assembled a list of potentially useful behaviors and, with the help of their colleagues, have prioritized from the most to the least efficacious. From these lists, two clusters of prevention and two clusters of treatment behaviors rise to the top. If widely practiced, the malaria and medical advisors predict that the number of episodes of malaria will be reduced substantially.

“Substantially” in this case means that the people themselves in the target communities will clearly notice a drop in the number malaria cases in their family and the community (without having to rely on abstract data from scientific surveys).

Primary Malaria Prevention Behaviors

- C Buy and sleep under a treated mosquito every night. Let children under five, pregnant women, and people with long-term illness use a mosquito net before anyone else.**
- C Treat the mosquito net with Power-Chem when you buy it. Re-treat the net with Power-Chem after you have washed it a second time. If you do not wash your net, re-treat it with Power-chem every six months.**

Secondary Prevention Behaviors

The following prevention behaviors will contribute to further reduction in the episodes of malaria, but they are much less effective than the two behavior clusters, above. They are listed in descending order of effectiveness. Because of their relative ineffectiveness compared to ITNs, these measures have been left off the draft malaria counseling card. The fourth measure would require such a large expenditure of time and energy that one has to wonders whether it would be worth the effort.

- C Cover yourself up in the evening with long sleeves, long skirts or pants, shoes and socks so mosquitoes cannot bite you.**
- C Rub on mosquito creams or oils to discourage mosquitoes from biting you. Note: one could not purchase any of these products in any of the village shops.**
- C Burn mosquito coils, mealie meal, or mango leaves in the evening so the smoke keeps mosquitoes away.**
- C Eliminate the places where mosquitoes breed around your house and in your community: fill or drain places with standing water.**

Primary Malaria Treatment Behaviors

- C Treat anyone who has a fever promptly with Chloroquine at home as soon as the fever appears, or take the person promptly to a health clinic for treatment.**
- C Keep a supply of Chloroquine tablets and syrup at home, ready to treat anyone who comes down with a fever.**
- C Give the correct amount of Chloroquine (see the Treatment Table).**
- C Always give the complete, three-day treatment so the malaria germs are killed in the body.**
- C If the fever continues beyond the second day, take the person to a health facility. The person may be having a more difficult kind of malaria that requires a different malaria drug. Remember to tell the clinic nurse (1) when the fever started, (2) when Chloroquine was given, and (3) how much was given.**

TABLE 3 - MALARIA PREVENTION AND TREATMENT

Malaria is so common in Zambia that many people think nothing can be done to prevent it or treat it effectively. This is not so. There are things you can do to reduce your chance of getting malaria. If you do get malaria, effective treatment is available locally. Malaria is a serious disease. It affects people of all ages, but is especially dangerous to children under five and to pregnant women. Malaria is passed from person to person by a certain kind of mosquito that usually bites late at night. If you avoid bites from mosquitoes that carry malaria, you can reduce your chance of getting this disease.

Here are the most effective things you can do to prevent malaria:

- C Buy a mosquito net and get it treated with Power-Chem. If you can, buy enough mosquito nets for the whole family.**
- C Sleep EVERY night under a mosquito net treated with Power-Chem, even if you don't see mosquitoes. If you have only one net, children and pregnant women should sleep under it.**
- C Get your net re-treated with Power-Chem. If you wash your net, re-treat with Power-Chem after every two washes. If you do not wash your net, get it re-treated with Power-Chem every six months.**

Here are the signs of malaria:

- C Body hotness and feeling cold at the same time**
- C Shivering and sweating**
- C Headache, body pains, or pains in the joints**
- C Nausea and vomiting**
- C Loss of appetite**
- C Diarrhoea, sometimes**

When you see the signs of malaria, treat the person quickly with Chloroquine at a clinic or at home. Give the correct dose and the complete three-day dose of Chloroquine. If the fever does not go away after the second day, take the patient to the clinic.

DANGER Signs of Malaria:

- C Fitting (Convulsions)**
- C Unconsciousness**
- C Unable to take medicine by mouth**
- C Unable to eat or drink**

If you see these DANGER signs, take the patient immediately to a clinic or hospital. Do not try to treat them at home.

Key Messages: Sleep EVERY night under a mosquito net that has been treated with Power-Chem. Treat a fever promptly, in a clinic or at home, with the correct and complete 3-day dose of Chloroquine.

TABLE 3 (CON'T) - THIS IS THE CORRECT AMOUNT OF CHLOROQUINE TO GIVE

For Chloroquine Tablets:

Age Group	Day 1	Day 2	Day 3
Less than 6 months	½ crushed tablet	½ crushed tablet	¼ crushed tablet
6 - 12 months	¾ crushed tablet	¾ crushed tablet	¼ crushed tablet
1 - 3 years	1 crushed tablet	1 crushed tablet	1 crushed tablet
4 - 5 years	1½ crushed tablets	1½ crushed tablets	¾ crushed tablet
5 - 9 years	2 tablets	2 tablets	1 tablet
10 - 15 years	3 tablets	3 tablets	1½ tablets
Older than 15 years	4 tablets	4 tablets	2 tablets

For Chloroquine syrup that is especially good for babies and young children:

Age Group	Day 1	Day 2	Day 3
Less than 6 months	1 teaspoon	1 teaspoon	½ teaspoon
6 - 12 months	1½ teaspoons	1½ teaspoons	½ teaspoon
1 - 3 years	2 teaspoons	2 teaspoons	1 teaspoon
4 - 5 years	3 teaspoons	3 teaspoons	1½ teaspoons

Note: If you have a measuring spoon, a teaspoon full is 5 ml.

Remember:

- C Start treating a person who has a fever with Chloroquine promptly.**
- C Always give the correct amount of Chloroquine**
- C Always give the complete three-day treatment with Chloroquine**

Developmental Research

A generous amount of qualitative and quantitative research has been done in advance of the design of this communication strategy for malaria prevention and control. This research has proved very useful in designing many of the components of this IEC strategy.

A list of the studies in chronological order can be found in Appendix A of this document (and Appendix L of the consultant's Trip Report).

Most of the studies have been qualitative in character, looking particularly for the knowledge, attitudes, practices and behaviors with respect to malaria of people in Chipata, Lundazi, and Chama Districts in the Eastern Province of Zambia.

Also included in the bibliography in Appendix A, are the 1998 Annual Plan, the Five-Year Plan, and the Drug Policy for Malaria Control of the TDRC.

These studies were not designed to look specifically for the motivation people might have to adopt the primary prevention and treatment behaviors. However, they reveal some insights into motivation. The experiences to date of the users of the 80 treated nets in Zanga Zanga and Kaulembe give important clues about how to appeal to the interests of other who are potential customers and users of treated nets. Among the findings is that:

- C Mosquito net users report that they sleep much better at night because they are not bothered by mosquitoes (or other biting insects)**
- C Children who sleep under a mosquito net sleep through the night. Without a net, they are likely to be awakened by biting mosquitoes and require their parents to get out of bed to care and comfort them.**
- C Net users report a very significant drop in the number of cockroaches, bed bugs, lice, and crickets in bed with them (due to the effect of the insecticide with which the nets are treated). They do not fear these insects; they just find them a nuisance.**
- C In the few instances where treated nets are in use, the families are happy to find dead mosquitoes on the floor around the bed in the morning.**
- C Net users and some potential users recognize that the treated net offers protection from mosquito bites and reduces the chance of getting malaria.**
- C Some net users state that the nets keep you warm**

Set Program Objectives - realistic and measurable (that is, quantifiable)

Process Objectives (SPECIFIC, QUANTITATIVE TARGETS MUST BE SET)

Illustrative examples:

- C Number of nets sold in the community (Count the number of nets before launch)**
- C Number of drama presentations about malaria prevention and treatment made. Count the people in the audience.**
- C Number of dosage charts observed in treatment rooms of health facilities**
- C Number of shops found with a supply of dosage charts**
- C Number of visits to communities by mobile video/audio unit (count the people in the audience)**

Outcome objectives (SPECIFIC, QUANTITATIVE TARGETS MUST BE SET)

Illustrative examples:

DO WE HAVE A BASELINE OF THE INCIDENCE OF MALARIA EPISODES IN THE SIX COMMUNITIES?

- C** Count the number of episodes at set points in time and compare to baseline
- C** Use traps to collect malaria mosquitoes. Establish a baseline and compare with subsequent counts OR count malaria mosquitoes collected in a (comparable) control village and in a project village. Compare mosquito counts.
- C** Study the susceptibility of malaria mosquitoes to Power-Chem using the bioassay method. Note: the insecticide chosen by the project is lambdacyhalothrin (ICON). Also, are there any health risks from exposure to Power-Chem?
- C** Self-reporting of (regular) use of nets
- C** Incidents of on-time re-treatment of nets
- C** Assess the percentage of correct doses of Chloroquine given
- C** Assess the percentage of complete (3-day) treatment
- C** Look at clinic records for
 - C** Change in the number of (suspected) malaria cases presenting over time
 - C** Number of complicated malaria cases presenting
 - C** After correct dosage
 - C** Promptness (history)
 - C** Get a baseline figure from previous studies
- C** Community-based health information system - look at their new system.

2.0 Plan

The plan for any health communication strategy is based on the findings of the preceding step, Assessment. The plan contains those activities that will lead to the adoption of new and better health behaviors by the target audience(s). The plan can be made up of the following components.

2.1 Who do you need to communicate with to achieve your objectives?

This question must be answered in light of the three strategic thrusts of the Malaria Control Programme in Zambia. They are:

- 1. To improve the case management of malaria patients at health facilities**
- 2. To improve the detection of symptoms of malaria by caretakers, to improve the case management of malaria at home, and to respond appropriately in the event a fever persists**
- 3. To promote the purchase and use of insecticide-treated mosquito nets and the insecticide kits needed to re-treat the nets**

From these three strategic thrusts, it is clear that the communication strategy must reach and influence the behaviors of two primary audiences:

- 1. Adults in a household who make decisions about the care of family members with signs of malaria, especially children under five years of age.**
 - C** In most households, it is the mother who takes this responsibility for their children. Mothers, then, are a primary audience for the communication strategy.

- C In all but female-headed households, it is the husband who would play the dominant (but not sole) role in the decision to buy a treated bed net and to pay for its re-treatment with insecticide. Male heads of households are a secondary audience for the communication strategy.
- 2 Health workers of two cadres:
 - C Health workers who practice in health facilities (clinics)
 - C Community Health Workers and members of Neighborhood Health Committees members who select them and have a role to play in directing their activities. CHWs constitute a primary audience while NHCs are a secondary audience.

2.2 What is the “product” you want the audience to “buy?”

The “product” can be a commodity, but it can also be an idea, or a health practice.

Products

- C Mosquito net treated with Power-Chem (product name: Power-Net)
- C Power-Chem (ICON insecticide) for treating and re-treating nets

Ideas

- C Malaria is caused by the bites of certain kinds of mosquitoes

Practices (Behaviors)

- C Purchase mosquito nets
- C Have the net treated with insecticide (Power-Chem)
- C Sleep under an insecticide-treated net every night
 - C Properly hung
 - C Tucked under a mat or mattress
- C Re-treat the net with Power-Chem
 - C After every second washing, or
 - C Every six months
- C Respond to the signs of (uncomplicated) malaria by beginning treatment with Chloroquine promptly (THE WORD PROMPTLY NEEDS TO BE DEFINED)
 - C Buy and keep Chloroquine at home
 - C Take patient to a Community Health Worker (assumes he/she has Chloroquine)
 - C Take patient to a clinic for treatment
- C Respond to the danger signs of malaria (fitting, coma, and inability to eat or drink or to take medicine by mouth) by taking the patient to a clinic as soon as possible
 - C Give the correct dose of Chloroquine
 - C Give the complete, three-day treatment
 - C Take the patient (back) to the clinic if the fever does not drop within 24 hours

WILL CHWs HAVE CHLOROQUINE AT TIME THIS COMMUNICATION TAKES PLACE?

2.3 What behaviors do you need to promote?

See the behaviors in 2.2, above.

2.4 What health education materials and commodities have to be distributed?

How many? Where? By when? Who has to be trained? By when? Trained to do what?

2.4.1 Health education materials

For CHWs and health workers in clinics

- C Counseling cards
- C Teaching flip chart (2 pages on malaria)
- C Treatment (dosage) charts for tablets and syrup

For caretakers

- C Treatment (dosage) charts for tablets and syrup on slips of paper given with every Chloroquine prescription

For retail Chloroquine sellers

- C Treatment (dosage) sheets to be given out with tablets or syrup

2.4.2 Distribution

- C In all treatment rooms of clinics
- C In all CHW kits
- C At all retail drug outlets
- C In all Child Health Record booklets

2.4.3 Timing

- C To lead the launch of bed net sales by one month
- C To maintain supplies for CHWs and drug retailers

2.4.4 Training

- C Fifty-five (55) CHWs to be trained as health educators, motivators, drug suppliers, and as case followers
- C Twenty-five (25) clinic staff to be trained in malaria case management. Emphasis should be on attitude toward patients, efficient patient handling techniques, taking malaria histories, teaching caretakers about correct and complete treatment and early recognition of the malaria danger signs, about seeking further help if fever persists beyond the second day after treatment begins. These components are in the IMCI and PHP curricula.

2.5 What will be the messages and how will they be expressed?

2.5.1 Choice of languages

- C In Tumbuka and simple English in Chama and Lundazi Districts
- C In Nyanja and simple English in Chipata District

2.5.2 Key *Prevention* Behavior Messages

- C Buy an insecticide treated mosquito net.
 - C If you can, buy enough mosquito nets for the whole family.
- C Get your mosquito net treated with Power-Chem.
- C Sleep every night under the insecticide treated mosquito net.
 - C If you have only one net, let children and pregnant women sleep under it.
- C Get your net re-treated with Power-Chem

- C** If you wash your net, get your net re-treated with Power-Chem after every two washes.
- C** If you do not wash your net, get it re-treated with Power-Chem every six months.

2.5.3 Key Treatment Behavior Messages

- C** Treat any fever promptly in a clinic or at home with Chloroquine.
- C** Give the patient the correct dose of Chloroquine for three days.
- C** If the fever is still high on the second day of Chloroquine treatment, take the patient to the clinic right away.

2.5.4 Educational messages (that help people understand why the recommended behaviors make good sense for them)

What causes malaria?

Malaria is a disease transmitted only by certain kinds of mosquitoes. There are many kinds of mosquitoes, but only a few specific kinds can cause malaria. The malaria mosquito is active between sunset and dawn. They are most active between 2200 and 0400, the time when you are usually sleeping. If you reduce the chance for mosquitoes to bite you by sleeping under a mosquito net treated with Power-Chem, you can reduce your chance of getting malaria.

When a mosquito bites a healthy person, it leaves some germs in the blood of that person. These germs grow in the blood and cause the malaria attacks.

How does a mosquito get malaria?

A mosquito is not born with malaria. A mosquito gets the malaria germs by biting a human being infected with malaria. Then the mosquito gives malaria to every person it bites. If very few human beings are infected with malaria, it is less likely that mosquitoes will become infected and spread the disease. This is why taking the full three-day treatment with Chloroquine is so very important. Chloroquine kills the malaria infection in the body. Sleeping under a Power-Net is also very important because the net protects you from mosquitoes that carry malaria.

Who can suffer from malaria?

Anyone and everyone can get sick with malaria from mosquito bites. Some people are likely to suffer more from malaria: children under five years of age, pregnant women, and people who are sick for a long time and have grown weak. It is especially important that mosquito nets treated with Power-Chem are used by these vulnerable groups of people.

How can I know if it is malaria?

The signs of uncomplicated malaria are fever, chills (shivering), sweating, headache, pain in the joints, nausea, vomiting, and sometimes diarrhoea. Twitching of the body, fitting (convulsions), unconsciousness, inability to take medicine by mouth, and inability to eat or drink are all DANGER signs that the person must be taken to a health facility right away. One of the earliest signs of malaria is fever. If Chloroquine treatment is started at home or at a health facility at the first sign of fever, you can stop an attack before it becomes very serious.

How much Chloroquine should I give?

Give the correct amount of Chloroquine. The amount depends on the age of the person. See the treatment table for the correct amount of syrup (easier to give to infants and babies) or tablets. Look at the instructions for giving Chloroquine to be sure you are giving the correct amount.

Should I stop giving Chloroquine if the person seems to be getting better?

Definitely not! Give the correct amount for all three days. This kills the malaria germs in the body. The malaria will not come back (unless the person is bitten again). If there are no malaria germs in the body, a mosquito cannot carry malaria from the person to other family members and friends. So, the full treatment is important for the individual, the family, and the community.

Does Chloroquine always work?

No. Sometimes Chloroquine does not work completely. If the fever and other signs of malaria continue, the person may be having a more dangerous kind of malaria. The person urgently needs a different malaria drug (Fansidar) which must be given at a health facility. Remember to tell the health facility nurse (1) when the fever started, (2) when Chloroquine was given, and (3) how much was given.

Is every mosquito a malaria mosquito?

No. You get malaria from only one or two kinds of mosquitoes. Malaria mosquitoes are most active during the night. That is why sleeping under a Power Net at night protects you from mosquito bites.

How and where do malaria mosquitoes breed?

Adult female mosquitoes lay their eggs in clean, still, or slowly moving water. These have to be natural places like puddles, pools of water, and ponds (*dambos*). Once laid, the eggs grow into very small worms (which you can see twitching as they swim in the water). Soon the worms will grow into mosquitoes, which will fly up in search of some blood (their food).

Malaria mosquitoes do not breed in the water in old tin cans, tyres, plastic containers, or other rubbish. The malaria mosquito also does not breed in dirty water like you find in a sewer or pit latrine. Other insects will breed there, but not malaria mosquitoes.

If we clear away all standing water around our homes and communities, we take away the places for mosquitoes to breed.

2.5.4.1 Choice of Appeals (Choose from emotional, rational, educational, motivational, hard sell, soft sell, scientific, traditional)

- C EMOTIONAL**
- C SOME EDUCATION**
- C A LITTLE SCIENCE**

2.5.4.2 Choice of Images (Choose from rural, urban, modern, traditional, sophisticated, folksy)

- C RURAL, PRIDE OF OWNERSHIP**
- C THOSE WHO DO NOT HAVE NETS FEEL ENVIOUS**
- C HIGH DESIRE TO HAVE A NET**
- C WILLING TO WORK FOR THE MONEY IF NOT TOO HIGH**

2.5.4.3 Choice of Tones. (Humorous, serious, family-oriented, scientific, etc.)

- C APPEAL TO SENSE OF FAMILY PROTECTION**
- C USE HUMOR**
- C NO SCARE TACTICS**

2.5.4.4 Apparent Sources of Information (i.e., credible sponsor)

- C CHW FOR INFORMATION (ONLY)**
- C CHIEF**
- C CHURCH LEADERS**
- C TESTIMONY FROM SATISFIED MOSQUITO NET USERS**

2.6 Message integration

2.6.1 Importance of message consistency

It is well established through evaluations of health communication programmes that if a target audience receives *essentially* the same messages about health behaviors from multiple sources, the impact on behavior change is far greater than the simple sum of the message. This is usually referred to as the “synergistic effect” that results from well-coordinated communication plan that uses multiple channels, provides repetition of the messages, and maintains message consistency.

Many willing hands have been extended in Zambia to help with the severe threat to public health that malaria represents. There can be legitimate differences of professional opinion as to the best choices of prevention and treatment actions. Discussion of professional ideas should be encouraged but differences should be resolved so that policy and behaviour recommendations to the public are clear. Confusing the public with apparently contradictory advice will set the cause of malaria prevention and control back and erode the reputations of policy makers, health practitioners and communicators in the eyes of the general public.

2.6.2 Mechanisms for maintaining message consistency

The following steps are being taken to maintain consistency and congruency between the messages emanating from the partner organization.

TDRC National Malarial Control Programme office in Chipata. The professional staff of four consists of an entomologist with special knowledge about mosquitoes (on secondment from TDRC), a social marketing specialist, an IEC specialist, and health worker trainer. The Chipata staff intends to take a team approach to their work. They plan to have regular staff meetings, to hold debriefings whenever one of them returns from the field, and to work together on the development of their action plan. As a result of their team approach, it is likely that the content of training courses for Community Health Workers and health facility workers, the messages contained in marketing and promotional materials, and the content of health education materials will be consistent.

A script is being developed (see section 2.5, above) that contains educational and action messages for malaria prevention and control. This script reflects current malaria prevention and control policy. It reflects the best advice of malaria epidemiologists and medical doctors and nurses about the most effective malaria prevention and treatment behaviors. This script will be distributed to every person and partner organization with the stated objective of maintaining message consistency regarding the behaviors people should adopt and continue to perform. This script can be reviewed by the TDRC/Chipata team and revised in consultation with the National Coordinating committee in light of field experience and/or new scientific knowledge. The partners in Zambia’s malaria control effort

should not feel free to depart from this script—and especially not to put out contradictory messages. The people of Zambia are intelligent and will quickly detect contradictory advice about prevention and treatment behaviors.

At the policy level, there is the National Malaria Control Programme Coordinating Committee.

Finally, it recommended that the Chipata team establish a coordinating body in Chipata for the Eastern Province. The membership should be made up of representatives from organizations such as the following, provided they have active programmes of malaria prevention and treatment.

- C CBoH
- C DHMT
- C PS OFFICE
- C DISTRICT COUNCIL
- C NGOs
- C DONORS
- C RELIGIOUS ORGANIZATIONS
- C TRADITIONAL LEADERS
- C PROVINCIAL EDUCATION OFFICER
- C AGRICULTURAL OFFICER

It will be very helpful to the success of the NMCP/Eastern Province that the group above develop a sense of ownership of the Programme and see it as their own, and not an activity of the TDRC national organization or the BASICS Project.

2.7 Which channels of communication will be used?

2.7.1 Face-to-Face Communication

By Community Health Workers, including TBAs, CBDs

- C Education and behavior encouragement
- C Counseling
- C Teach prevention and treatment skills
 - C Hanging and tucking nets
 - C Chloroquine treatment of infants and children
- C Follow-up on cases

By health facility staff

- C Education
- C Encourage effective prevention and treatment behaviors
- C Give treatment
- C Dispense Chloroquine
- C Deal with Chloroquine-resistant cases

2.7.2 Print Materials

1. Text to be placed on the back of the malaria prevention and treatment pages of the flip charts to be as teaching aids by Community Health Workers
2. Text to be placed on malaria counseling cards to be used by Community Health Workers
3. Two posters that show primarily in symbolic form the correct dose of Chloroquine. One poster to show correct dose for syrup and one poster for tablets.
4. Two pages be utilized in the Child Health Record booklet to display key malaria prevention and treatment messages, including the Chloroquine dosage information. The CBoH is currently developing the booklet. One page will contain messages for the primary prevention and primary

treatment behaviors. The second page will contain (in primarily symbolic form) the dosage information for syrup and tablets.

5. Small leaflets which show the correct and complete Chloroquine dose instructions; to be given with Chloroquine by health facility staff, CHWs, pharmacists, and shop keepers who dispense or sell the drug. Additional idea: sponsorship by Chloroquine manufacturer or distributor of an attractive calendar which shows the dosage chart.
6. Poster/calendars, being developed by SFH. Assure message consistency with other materials. Consider sponsorship by Chloroquine drug manufacturer or wholesaler of some or all of the costs.

2.7.3 Mobile Video Unit (content to be developed jointly with SFH)

- C Promotional material**
- C Price information**
- C Treating/re-treating instructions (technique, re-treatment schedule)**
- C Hanging instructions**
- C Repairing instructions**
- C Testimony from satisfied users**

2.7.4 Mobile public address system (same content as Video Unit)

2.7.5 Drama Troop performances

- C Coordinated by Peace Corps Volunteer Shannon Scribner**
- C Dramas to articulate prevention and treatment messages (above)**
 - C With good consequences for characters if practiced**
 - C With bad consequences for characters if not practiced**
- C Story lines:**
 - C Family has only one net. Who gets to sleep under it?**
 - C Family faces choice of buying a net or something else. What do they buy?**
 - C Child is ill and father tells mother to leave his bed and net and sleep the rest of the night unprotected. Consequences?**
 - C Once fully developed and refined, the dramas could be recorded on videotape for exhibition to more audiences at a lower cost than moving the drama group around the Province.**

2.7.6 Child-to-Child Programme

The Programme is coordinated by the Ministry of Education

- C Dr. Joyce Cook of ADRA at Mwami Hospital in Chipata, runs a Child-to-Child Programme**
- C Shannon Scribner (and possibly other Peace Corps Volunteers) has expressed interest in helping the project develop malaria materials for the C2C Programme.**

The development of educational and activity materials for C2C should be started after the bed net launch and distribution are well underway.

2.7.7 Informal Introduction of Malaria Education Materials into the Primary and Secondary Schools in the Province

- C Contact Provincial and District Education Officers to explain the Programme's intentions and to ask for permission to proceed**
- C Contact primary and secondary school teachers to find those interested in informally teaching about malaria prevention and control in their classes**

- C Sponsor a workshop that has three objectives**
 - C To provide a thorough briefing on malaria control**
 - C To provide an opportunity share teaching materials that have already been developed by teachers in Eastern Province**
 - C To provide the opportunity for teachers to develop their own instructional materials on malaria prevention and control**
- C Explore with U.S. Peace Corps to see if there is a qualified/interested volunteer to help organize the workshop.**

DECISIONS NEED TO BE MADE ABOUT

- C Which channels for which messages**
- C Role of each medium**
- C Intensity with which each channel will be use**
- C Integration of multiple communication channels**

2.8 Plan for effectively utilizing partners

- C SFH will utilize an artist/illustrator to develop picture material, but this person will develop illustrations under direction from SFH. SFH art work must be coordinated/shared with IEC art work. Materials should be pretested in Eastern Province, particularly because they will have been created in Lusaka.**
- C PVOs and NGOs which are participating will be represented by their membership on coordinating committees.**
- C Ministry of Health clinics in the Province will be represented through DHMT participation on the coordinating committee.**

3.0 Pretest

Before beginning a large-scale effort at a health communications program, *test* each of the elements of the program to be sure they will work with the target audience(s) the way you expect them to. Do NOT waste time and energy testing health education materials on anyone except the target audience! (Sorry, but superiors, colleagues, doctors, nurses and friends are not typical of the target audience) The following things should be pretested:

- C The “product”**
- C The recommended behaviors**
- C The health education materials**

In spite of careful planning, it is possible that elements of the communication plan are not working satisfactorily. Re-plan them and pretest again. Go all the way back to Assess step and use one of the qualitative methods and let the target audience help you understand why an element of the communications plan is not working as expected.

When you have satisfied yourself that all the elements of your communications plan will have the desired effect you can finalize your Communications Plan.

4.0 Deliver

In simplest terms, the Deliver Step is the implementation of your communications plan. It is largely a job of managing the elements of the plan, making sure that activities are carried out as intended and completed on time. You will need to manage the following things:

- C Production of health education materials and commodities needed for the health intervention**
- C Distribution**
- C Media activities**
- C Delivery of messages**
 - C To target audience(s)**
 - C With planned repetition**
 - C With planned, coordinated use of the various media**
- C Using face-to-face and print communication materials**
- C Products and services (nets, Power-Chem, Chloroquine, quality health service)**
- C Interpersonal support**
- C Training of community volunteers, new staff, partners**

5.0 Monitor

Monitoring is the process of quickly and simply testing whether the results you intended to achieve are happening. If you set measurable objectives at the end of the Assess step, you will know where you are succeeding and where not.

Monitor the process objectives. Did the activities you planned take place on time and in the correct places? For example: Volunteers trained? Health education talks given? Teaching aids designed and printed? Distributed, to the right places? Power Nets sold?

Dr. Mubiana Macwanga has agreed to work with Josephine Nyambe and Esther Mambwe to operationalize the indicators of success and suggest evaluation methods. BASICS has already developed excellent monitoring and evaluation techniques.

Monitor the outcome objectives. Did the desired results follow from the activities as you planned? Examples: Number of people presenting with malaria going down, Power Nets being retreated, Correct and complete Chloroquine treatments given/taken

Finally, the results of the Monitor step *must be fed back into the Plan step so that your communications plan is improved and made more effective.* If process or outcome objectives were not met, figure out why. You may need to go back to the Assess step in order to re-plan.

APPENDIX C: SAMPLE MATERIALS

Scanned, ready to import once text is finalized

**APPENDIX D: MONITORING AND EVALUATION
OF ACCELERATED INTEGRATED
MALARIA CONTROL ACTIVITIES**

**INSECTICIDE TREATED NETS
KEY INDICATORS**

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD/APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION	
				SCHEDULE/FREQUENCY	RESPONSIBLE PERSON(S) AND TEAM
Proportion of children under 5 who report having slept under an ITN the previous night	$\frac{\text{No. of children under 5 who slept under an ITN previous night}}{\text{No. of Children under 5}} \times 100$	HH survey	HH Survey	Minimum 12 months after full implementation begins	DHMT/HC/Community
Proportion of pregnant women who report having slept under an ITN the previous	$\frac{\text{No. who slept under an ITN the previous night}}{\text{No. of pregnant Women}} \times 100$	HH Survey	HH Survey	Minimum 12 months after full implementation begins	DHMT/HC/Community
Proportion of households with 1,2 or 3 or more ITN's hanging and in good condition	$\frac{\text{No. of HH with 1,2,3 or more ITN's in good condition}}{\text{No. of HH with 1,2,3 or more ITN's}} \times 100$	HH Survey	HH Survey and observation	Minimum 12 months after full implementation begins	DHMT/HC/Community
Proportion of households which purchased any subsidized ITN in the past 12 months which still have those net(s)	$\frac{\text{No. of HH with ITN's}}{\text{No. of HH that purchased any ITN's in the past 12 months}} \times 100$	HH Survey	HH Survey and observation	Minimum 12 months after full implementation begins	DHMT/HC/Community
Proportion of households with ITN's who report having re-treated all ITN's according to treatment guidelines within the last 12months	$\frac{\text{No. of HH reporting correct re-treatment of ITN's}}{\text{No. of HH with ITNs}} \times 100$	HH Survey	HH Survey and observation	Minimum 12 months after full implementation begins	DHMT/HC/Community
ITN Subsidization Rate	$\frac{\text{Sales price (Kwacha)}}{\text{ITN Procurement Cost (Kwacha equivalent at current exchange rate)}}$	Prog. records	Analysis of records	Minimum 12 months after full implementation begins	IMI
Proportion of ITN revenue which is deposited in a bank account, by point of distribution	$\frac{\text{Total revenue deposited in a bank account}}{\text{Nets sold x price per net}}$	Prog. records	Analysis of records	Minimum 12 months after full implementation begins	IMI
Rate of net replacement	$\frac{(\text{Aggregate value of funds in bank accts from ITN sales (US\$)}) \div \text{Current cost of each ITN (US\$)}}{\text{Total nets sold since last procurement}}$	Prog. Records	Analysis of records	Each time nets are purchased	IMI

**CASE MANAGEMENT
KEY INDICATORS**

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD/APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION	
				SCHEDULE/FREQUENCY	RESPONSIBLE PERSON(S) AND TEAM
Community Level					
Proportion of children under 5 with fever in the past 2 weeks who received an antimalarial within 48 hours of onset of fever	$\frac{\text{No. who received an antimalarial within 48 hours of fever}}{\text{No. of children under 5 with fever in the past 2 weeks}} \times 100$	HH Survey	HH Survey	Annual	DHMT/HC/Community
Proportion of children under 5 with fever in the past 2 weeks who received an antimalarial and took a) the correct dose for age and b) the full course	$\frac{\text{No. who received an antimalarial and a) took the correct dosage \& b) took the full course}}{\text{No. of children under 5 with fever in the past 2 weeks}} \times 100$	HH Survey	HH Survey	Annual	DHMT/HC/Community
Proportion of caretaker of children under 5 who know to take the child to the health facility if the child does not improve within 48 hours	$\frac{\text{No. who know to take their child to the health facility if the child does not improve in 48 hours}}{\text{No. of caretakers of children under 5}} \times 100$	HH Survey	HH Survey	Annual	DHMT/HC/Community
Proportion of caretakers of children under 5 who can describe 2 or more of the 4 danger signs for severe illness (or malaria)	$\frac{\text{No. who can describe 2 or more of the 4 danger signs for severe illness}}{\text{No. of caretakers of children under 5}} \times 100$	HH Survey	HH Survey	Annual	DHMT/HC/Community
Facility Level					
Proportion of children under 5 attending a health facility outpatient clinic for whom the health worker a) asks the caretaker if the child has had a fever in the past 24 hours and b) takes the temperature or touches the child	$\frac{\text{No. for whom the health worker a) asks if the child had a fever in the past 24 hours and b) takes the temperature or touches the child}}{\text{No. of children under 5 attending a health facility outpatient clinic}} \times 100$	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC
Proportion of children under 5 with fever seen in a health facility outpatient department who were prescribed an antimalarial	$\frac{\text{No. who were prescribed an antimalarial}}{\text{No. of children under 5 with fever seen in a health facility out-patient clinic}} \times 100$	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC
Proportion of children under 5 attending a health facility outpatient clinic for whom the health care worker asks if the child has had any of the 4 IMCI general danger signs	$\frac{\text{No. for whom the health worker asks if the child has had any of the 4 IMCI general danger signs}}{\text{No. of children under 5 with fever seen in a health facility out-patient clinic}} \times 100$	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC
Proportion of children under 5 with fever in the past 24 hours attending a health facility outpatient clinic for whom the health care worker instructs the caretaker in the correct and complete dosage of the antimalarial.	$\frac{\text{No. for whom the health worker instructs the caretaker in the correct and complete dosage of the antimalarial}}{\text{No. of children under 5 with fever seen in a health facility out-patient clinic}} \times 100$	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC

Proportion of children under 5 with fever in the past 24 hours attending a health facility outpatient clinic for whom the health care worker counsels the caretaker to return if there is no improvement within 48 hours	No. for whom the health worker counsels the caretaker to return if there is no improvement within 48 hours X 100 No. of children under 5 with fever seen in a health facility out-patient clinic	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC
Proportion of caretakers whose child under 5 was prescribed an antimalarial who can explain how to give the antimalarial correctly.	No. of caretakers who can explain how to give the antimalarial correctly X 100 No. of caretakers of children under 5 attending a health facility outpatient clinic whose child was prescribed an antimalarial	Facility Survey	Facility Survey (exit interview)	Quarterly	DHMT/HC
Proportion of children under 5 with severe febrile disease who were referred to the next level by the health worker	No. who were referred to the next level by the health worker x 100 No. of children under 5 with severe febrile disease attending a health facility outpatient clinic	Facility Survey	Facility Survey (Observation)	Quarterly	DHMT/HC
Proportion of caretakers whose child under 5 was prescribed an antimalarial who can explain when the child needs to come back (danger signs, failure to improve)	No. whose caretaker can explain when the child needs to come back (danger signs, failure to improve) X 100 No. of children under 5 attending a health facility outpatient clinic who were prescribed an antimalarial	Facility Survey	Facility Survey (exit interview)	Quarterly	DHMT/HC

**PREVENTION OF MALARIA IN PREGNANCY
KEY INDICATORS**

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD/APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION	
				SCHEDULE/FREQUENCY	RESPONSIBLE PERSON(S) AND TEAM
Proportion of adult community members who know that the 2 groups at greatest risk of severe illness and death from malaria are pregnant women and children under five	$\frac{\text{No. who recognize pregnant women + children < 5 as at greatest risk}}{\text{No. of respondents}} \times 100$	Household Survey	HH Survey	Annually	DMT/HC/Community
<i>Pending revision of national drug policy:</i> Proportion of pregnant women in their 3 rd trimester who report having taken intermittent treatment with an antimalarial according to national policy	$\frac{\text{No. who received intermittent malaria treatment during pregnancy}}{\text{No. of pregnant women in their 3rd trimester attending antenatal clinic}} \times 100$	Antenatal Survey	Antenatal Records	Annual	DHMT/HC

**IMPACT ATTRIBUTED TO MALARIA
KEY INDICATORS**

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD/APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION	
				SCHEDULE/FREQUENCY	RESPONSIBLE PERSON(S) AND TEAM
Morbidity Attributed to Malaria					
No. of cases of uncomplicated malaria (probable/confirmed) among children under 5 per unit population (1,000)	a) <u>No. of cases of probable malaria in <5s</u> x 1,000 No. of children under 5	HMIS	District Reports	Quarterly	DHMT
	b) <u>No. of cases of confirmed malaria in <5s</u> x 1,000 No. of children under 5				
No. of cases severe malaria among under 5's per unit population (1,000)	<u>No. of cases of severe malaria in <5s</u> x 1,000 No. of children under 5	MF4A	District Reports	Quarterly	DHMT
Proportion of total probable malaria cases in children under 5 who attended a health facility who slept under a mosquito net	<u>No. <5 who sleep under a mosquito net</u> x 100 Total No. of probable malaria cases in children under 5 attended in a health facility	HC Records	HC records	Quarterly	HC
Mortality Attributed to Malaria					
No. of Malaria deaths (Prob/Confirmed) among under 5's per unit population (1,000)	a) <u>No. of deaths from probable malaria</u> x 1,000 No. of children under 5	HMIS	District Reports	Quarterly	DHMT
	b) <u>No. of deaths from confirmed malaria</u> x 1,000 No. of children under 5				
Case fatality rate in under 5's	<u>No. of deaths from malaria in children under 5</u> X 100 No. of hospital admissions for malaria in children under 5	HMIS	District Reports	Quarterly	DHMT