

 **BASICS II**

**Comparing Care-seeking  
for Childhood Malaria**  
Lessons from Zambia and Kenya



*Author*

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# Comparing Care-seeking for Childhood Malaria

## Lessons from Zambia and Kenya

*Carol Baume, Ph.D.*

## Abstract

This document presents two studies on care-seeking for childhood malaria to demonstrate how care-seeking patterns for the same illness differ in the same region of the world, and how interventions to improve illness management must also differ. The studies, conducted in Zambia and Kenya, used the same set of methodologies, the core of which is a semi-structured illness narrative.

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## Credit

Cover photo: WHO/TDR/S.Lindsay Caption: A doctor measures the spleen size of a child. An enlarged spleen is an indication of malaria infection.

## BASICS II

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# Acronyms

AED	Academy for Educational Development
AMREF	African Medical and Research Foundation
BASICS	Basic Support for Institutionalizing Child Survival
BDI	Bungoma District Initiative
CHW	community health worker
CO	clinical officer
CQ	chloroquine
DHMT	district health management team
GOK	Government of Kenya
HC	health center
HF	health facility
IEC	information-education-communication
IMCI	Integrated Management of Childhood Illness
NGO	non-governmental organization
NHC	Neighborhood Health Committee
ORS	oral rehydration solution
SP	sulphadoxine-pyrimethamine (trade name Fansidar™)
TDRC	Tropical Disease Research Center (Ndola, Zambia)
TH	traditional healer
USAID	United States Agency for International Development



# Comparing Care-seeking: Lessons from Zambia and Kenya

## Why Do Research on Care-seeking?

**T**he international health community has increasingly recognized the importance of care-seeking—the actions a family takes in response to an episode of childhood illness—in determining child health status and survival.

For malaria in particular, severe illness and death may be averted in most cases if families recognize symptoms and provide appropriate treatment as soon as possible. Malaria in very young children can become severe or fatal in as little as 2 days. Simple and effective treatments for malaria exist, yet malaria is a leading killer of children under 5 years in many developing countries, especially those in sub-Saharan Africa. Thus, early diagnosis and prompt treatment is a key strategy for malaria control. But this strategy requires an understanding of community care-seeking practices: how caregivers recognize and respond to childhood malaria symptoms, what factors shape their care-seeking behavior, and how they choose among health providers and treatment options. Only when it is understood what is working well in the care-seeking process and what is not, can interventions be designed to reduce barriers to optimal care. Sound behavioral research on management of malaria in the community can provide this information.

Findings across countries differ in the extent to which caregivers recognize symptoms, how quickly they respond, what kinds of home actions they take, the types and amounts of medications they give, the types of providers they consult, and in what order. Such patterns reflect both the health care context (e.g., the type and quality of facilities and health providers and ease of access to them) and individual or family factors (e.g., recognition of illness signs and knowledge of dosage schedules).

Two studies have been combined in this document to demonstrate how care-seeking patterns for the same illness differ in the same region of the world, and how interventions to improve illness management must also differ. The studies, one from Zambia and one from Kenya, were conducted using the same set of methodologies, the core of which is a semi-structured illness narrative.

These studies were originally published as:  
Baume, C. 1998. *Care-seeking for Fever in Kenya: Implications for Malaria Programs*. Washington, D.C.: USAID/BASICS Project.  
Baume, C., and M. Macwan'gi. 1998. *Care-seeking for Illnesses with Fever or Convulsions in Zambia*. Washington, D.C.: USAID/BASICS Project.

## How Do Care-seeking Patterns Differ?

In Zambia, almost all formal health care is provided by a system of government clinics, and there is little care or medication available from the private sector. Most families in the Zambia study areas had only one clinic and sometimes only one trained medical provider accessible to them. The typical pattern was for caregivers to recognize symptoms promptly and take the child to the clinic to obtain medicine, even for seemingly simple cases of febrile illness. The key problem was underdosing—not giving the full 3-day course of chloroquine (the first-line drug at the time of the

study)—either because the full course was not available, or because the child appeared to recover before the full course had been given and the caregiver believed that no more medication was needed.

In Kenya, by contrast, a wide range of drugs was available from a variety of outlets, and there were a variety of health practitioners as well, both public and private. A smaller proportion of children with febrile illness in Kenya than in Zambia was taken to a formal provider. A typical pattern in Kenya was for the caregiver to purchase various drugs to give to the child at home, and to wait a longer time before consulting a provider. Pharmacies played a much greater role in Kenya than in Zambia; caregivers generally purchased several drugs, either selecting drugs themselves or relying on the advice of the store employee, who was seldom a pharmacist. Caregivers usually turned to formal providers only after home treatment failed, and they tended to go from one provider to another. In Kenya, underdosing was as critical a problem as in Zambia, but for different reasons. Caregivers expected quick results, and because so many drugs and providers were available, the sick child rarely received a coherent course of therapy. In neither country was there much understanding of or communication about the importance of completing the full course of multidose antimalarials even when the child appeared to have recovered before the medication was finished.

## **What are the Implications of Different Care-seeking Patterns for Interventions?**

Because the care-seeking patterns in Zambia and Kenya differ, the interventions required to improve care-seeking behaviors also differ. Both must concentrate on greater communication with caregivers about how to give the correct medications, what effects to expect, and how to recognize signs of treatment failure. In Zambia, mothers recognize symptoms, treat quickly, and give the correct medication—if the drugs are available. Under those conditions, a major focus would be on getting drugs closer to families by building on nascent or existing community health networks that could handle cases of simple malaria and refer where necessary. In Kenya, some work needs to be done on recognition of malaria, but most efforts need to be directed toward encouraging prompt treatment with the correct drugs, and only those drugs. Interventions can and must work with a wider range of providers and drug sellers such as pharmacists. Implications of research findings for communication and program design are included in each of the studies.

It is hoped that the juxtaposition of these two studies will illustrate the importance of care-seeking research in identifying the specific improvements in caregiver actions necessary for specific settings to reduce the terrible toll that malaria and other illnesses take on young lives in Africa.

## **How Were These Studies Carried Out?**

The complete research protocol on which these studies were based is published in *A Guide to Research on Care-seeking for Childhood Malaria* (Arlington, Va.: BASICS II, for USAID, 2002) and is available on the Web at [www.basics.org](http://www.basics.org).

# Zambia Study on Care-seeking for Fever and Convulsions

## Summary of Major Findings and Implications for Programs

The following is a summary of findings from formative research undertaken to provide detailed understanding of care-seeking for children under 5 years who have fever and/or convulsions, two key symptoms of malaria. Implications for information-education-communication (IEC), Integrated Management of Childhood Illness (IMCI) health worker training, malaria interventions, drug policy, and community partnerships are delineated.

The research used qualitative methods, but key variables were quantified. One of the main methods used was illness narratives—interviews with 154 caregivers (almost all mothers) who gave chronological descriptions of the actions taken and decisions made in treating a child under 5 years that had suffered fever and/or convulsions within the 3 weeks prior to the interview. Another 89 caregivers with children under 5 years presenting with fever were interviewed and observed in 9 health centers. The research took place in three districts in Zambia: Chipata (Eastern Province), Kitwe (Copperbelt), and Lufwanyama (Copperbelt). Within each district, three health centers and two villages/communities within the catchment area of each were selected as research sites.

The overall recommendation emanating from the study is that care for uncomplicated malaria be located within the community, to provide prompt access to appropriate medication and monitoring of dosages. The following are the main findings and their implications.

### **Mothers recognize the signs of febrile illness.**

In spite of the many demands on their time and attention, mothers are very attuned to the condition of their children. Almost all reported noticing changes in a child even before illness manifested itself, citing crying or irritability, diminished activity, and decreased appetite as early warning signs. Thus, their “intuitions” are peaked, possibly leading them to early recognition of a worsening condition.

Fever is a defining indicator of illness. Mothers appear to be keenly aware of when fever starts and can describe its course—when it worsened or abated over a period of time—in detail.

The term for fever in all local languages is “body hotness.” Although there are a number of perceived causes of fever, malaria is the predominant one. When asked what childhood illnesses can cause fever, all groups mentioned the English term “malaria” as well as local terms that correspond to a large degree with malaria. Malaria is recognized as a distinct illness, but just as often, being sick is thought of in terms of signs/symptoms rather than an illness. For example, in answer to the question, “What illness did your child have?” a mother might say, “Hot body and vomiting.”

Mothers have good general knowledge of the signs of malaria, associating it with high or intermittent fever, vomiting “yellow stuff,” chills, and sweating. Many also know that anemia can result from frequent or prolonged attacks. Almost all know that convulsions can result from high fever and that they are dangerous. Twitching is recognized as a precursor to convulsing, and it is therefore considered a danger sign in itself.

#### Implications

- The IMCI orientation around danger signs is well suited to local concepts of illness.
- IEC does not have to emphasize teaching caregivers to recognize fever or febrile convulsions; mothers already know these illness signs and are keenly aware of when they appear.

#### **Fever is promptly attended to; both traditional and modern treatments are given, but uncomplicated malaria most often is thought of as an illness suited to modern pharmaceuticals.**

Fever is considered something that warrants attention; no case of fever encountered was left unattended. At the same time, fever is extremely common and is not immediately considered serious. The initial response typically is to treat it at home, often with a mix of traditional and modern remedies, and to monitor the child’s condition. Common home responses are:

- Sponging with tepid to cold water to lower the fever
- Herbal remedies, which are either ingested, inhaled in steam, or rubbed on the body
- Commercial medications, usually antipyretics (e.g., example, Panadol, Cafenol, or aspirin) and/or CQ that is usually left over from a prior illness

It is also extremely common to take the child to the health center for fever, whether the episode is perceived as serious or not. About two-thirds of cases detailed in the illness narratives were taken to the health center, the majority of them 1 or 2 days after the onset of fever. Key factors related to whether a child was taken to the health center were:

- Whether the child’s condition was worsening
- Whether there were drugs in the home or otherwise readily available
- Perceived quality of care at the health center, including availability of drugs
- Distance from the health center

This combination of factors meant that a different proportion of febrile children was taken to a health center for treatment in each district studied: 80% in Kitwe, 70% in Chipata, and 58% in Lufwanyama. Kitwe is more urbanized than the other sites, and its health centers are more accessible and more likely to have drugs.

The vast majority of children brought to the health center with fever symptoms were given chloroquine (CQ) and Panadol/aspirin. Many children who were not taken to the health center received equivalent treatment. Mothers know that CQ is the remedy that they will be given at the health center, so if CQ is available in the home or at a nearby shop, they often administer it themselves. Thus, in the vast majority of cases, whether treated at home or at the health center, CQ is given for fever.

Both traditional and modern treatments are considered appropriate for fever. They often are given concurrently. Generally, giving herbal treatments does not seem to interfere with or delay giving modern medications.

Community health workers (CHWs) and traditional healers play a relatively minor role in treating fever cases in children. CHWs were not consulted if community members knew they were out of drugs. When the CHWs have drugs, they are visited. It appears that traditional healers are not commonly consulted for cases of uncomplicated malaria, although they are if convulsions develop. Drug vendors are not seen as sources of advice, but only as a source of drugs. They provide a convenient source of antipyretics, which are used as a first response to fever, but are less often a source of antimalarials, since drugs are free for children under 5 years (under-fives) in most health centers.

#### Implications

- Since mothers already know that CQ is the treatment for suspected malaria, and will obtain it from the most convenient location, CQ should be more accessible in the community, especially in communities located far from the health center.
- CHWs need to have a consistent drug supply.
- Health providers should emphasize that sponging/bathing should be done with tepid, not cold, water.

#### **The central problem is improper dosage.**

Although CQ is the usual treatment for fever, the proper full course of the drug is seldom administered by caregivers. Although partial doses usually are given, overdoses are not uncommon.

Both caregivers who had sought assistance at a health center and those who treated at home were administering incorrect doses. *There is little emphasis on this vital element of treatment at the health center or elsewhere.* It is not clear that health providers themselves understand how important it is. In any event, there is little communication with caregivers about the proper dosage.

There are many reasons why children are not receiving proper doses:

*Many health centers prescribe or dispense partial doses.* Many mothers ended up taking home a partial dose for a number of reasons: provider error in the amount prescribed; shortage of drugs; health center policy of monitoring doses by asking mothers to return each day (most mothers did not return since they had to walk for several hours to reach the health center); and mistakes made because the person dispensing did not have technical training to read prescriptions accurately. Also, some caregivers said that their children often vomit the medication, but they were reluctant to return to the health center for replacement doses for fear of being scolded by staff.

*Patient-provider communication is very poor.* Perhaps the greatest problem is communication of dosages to caregivers. Even when doses were accurately prescribed, dosage instructions were usually hurried, inaudible, and unclear. Sometimes two, three, or four different medications were handed to the mother with very rapid instructions on each. The name or purpose of the drug was rarely stated. When written instructions were given, labels and written instructions were confusing, especially those written on bottles containing liquid medications. The people dispensing the drugs did not check that the caregiver understood the dosage, and some seemed annoyed if caregivers asked questions. Exit interviews conducted minutes after caregivers were handed medication found that about 40% had not understood how the medications were to be given to the child.

*Home administration of medication often is incomplete.* Once at home, caregivers sometimes stop giving the medication because the child repeatedly vomits it. More often, caregivers give only as much as is needed to see signs of improvement in the child, thinking that no more is needed. Another treatment pattern is particularly worrisome, both for the health of the child and for the development of drug-resistant strains of disease: giving small amounts of drugs for low-grade fever that persists over a period of weeks or months. In these situations the fever is attended to, symptomatically relieved by Panadol and kept in check by periodic inputs of CQ, but the illness is never cured.

### Implications

- Health provider IMCI training on proper dosage is very important, since some providers are prescribing incorrect doses.
- One of the most critical messages is the importance of giving the full course of medication. This needs to be emphasized to health providers as well as mothers.
- Caregivers need to take the full course home with them and not be asked to return for daily doses. Accommodation should be made for children who are vomiting. Either more than the exact dose should be given, with a clear explanation to the caregiver that the extra should be given *only* if the child vomits, or caregivers should be asked to return for replacement doses and be praised for doing so. There needs to be better follow-up case management for cases where the child vomits repeatedly.
- The dosage chart should be copied and posted in screening and treatment rooms as a reference for health providers. A large, bold message reminding them to tell caregivers to give the full dose should accompany the chart. Caregivers who can read can also benefit from this message.
- All people dispensing drugs need to have adequate training so that they can interpret prescriptions correctly.
- Very basic communication skills and attitude changes on the part of the dispensing staff are likely to improve caregivers' understanding of dosage greatly. If the staff looked at the caregiver when speaking, pointed to the written instructions as they spoke, and allowed questions to be asked, it is likely that many more mothers would know how to administer the drugs correctly.
- An IEC specialist should develop a simple and clear dosage card for illiterate caregivers. The reference card needs to indicate the dose as well as the importance of completing it.
- The importance of completing the dose can be explained in under-five clinic talks. Caregivers seem to accept information given in under-five clinics.

### **Modern treatment for convulsions needs to be more prompt.**

Most caregivers link twitching/convulsions with malaria, but caregivers (especially older ones) often suspect witchcraft as a cause. Therefore, traditional treatments are more likely to be sought if these signs appear. Herbal remedies are considered especially appropriate. In four of the ten cases that had reached the convulsion stage, a traditional healer was consulted. However, in eight of these cases the child was also seen at a health center. In none of the cases was a child seen only by a traditional healer. Unlike treatment for uncomplicated malaria, there appears to be some

reservation about modern treatments for convulsions. A number of the focus groups expressed the idea that a child with convulsions could die if it got an injection.

Giving traditional treatments appears to cause only a short delay in seeking modern treatment for convulsions, but since a child's condition is very serious at this point, any delay should be discouraged.

#### Implications

- One IEC message should be that febrile convulsions should be treated immediately at a health center.
- Consideration should be given to training traditional healers to make an immediate referral to a health center in the case of fever-related convulsions.

#### **The official policy of giving Fansidar™ in cases of CQ failure is not being implemented.**

In spite of official policy, Fansidar™ is not being given in cases of CQ failure. Among the 21 children brought back to the clinic because malaria-like symptoms persisted despite treatment with CQ, *none* was given Fansidar™.

Eleven caregivers clearly had given a full dose of CQ and the child had not responded; the rest were probable cases of CQ failure but some of the details, such as whether a replacement dose was given if the child vomited, were not clear. Among the 154 illness narrative interviews, only 2 children had been given Fansidar™. Two of the health centers did not have the drug in stock; in the others, CQ was prescribed even though Fansidar™ was available.

#### Implications

- All health centers must have Fansidar™ available.
- The criteria for and importance of administering Fansidar™ needs to be communicated to health providers.
- A small qualitative study could be conducted of providers' perception of Fansidar™ to help understand their reluctance to use it.

#### **IMCI is critically needed and is working.**

Dramatic differences were noted in health providers who had been trained in IMCI and those who had not. In most health centers with no IMCI training, providers did not ask much about the characteristics of the illness or what prior treatments had been given; they hardly touched or looked at the child; they communicated little or nothing about the child's condition or about recommended treatment to the caregiver; and they often did not show empathy for the patients. IMCI appears to have remedied these shortcomings, and the trained providers

#### Implications

- Extend IMCI training to as many health workers as possible.
- Develop effective follow-up supervision at the district level to reinforce new knowledge and skills.
- During IMCI training in Zambia, share some of the results from this study to give health providers an understanding for how poor reception at the health center discourages good care-seeking.

observed were clearly of a higher caliber in terms of skills, attitude, and communication with caregivers. The increased time spent with patients slowed patient throughput, but some of the providers were newly trained and had not yet become efficient at the procedures.

**People want information, and there are good opportunities for providing it.**

Even though the purpose of focus group discussions was not to teach, people enjoyed the sessions and wanted further discussion and visits. They were quite willing to spend 1½ hours in discussion and were even reluctant to have the group disperse.

Mothers are open to new treatment behaviors. The vast majority reported learning from the under-five clinics the treatment of tepid sponging/bathing to reduce fever, and this is now one of the first things they do to treat fever. In the few health centers where correct and complete dose messages were communicated, mothers accepted the instructions and complied. They also have adopted other new health practices taught by the health center, such as using oral rehydration solution (ORS) for diarrhea and boiling avocado leaves to make a drink for anemic children.

Implications

- An IEC strategy needs to be developed that is based on interpersonal communication, but also draws on other channels as appropriate.
- The potential of existing structures such as under-five clinics, neighborhood health committees (NHCs), and community health workers (CHWs) should be tapped. These groups should receive integrated technical information and be assisted in developing their educative role.
- The results of this study could be disseminated and discussed in communities, especially those that participated in the study.

There are many means of communicating with caregivers: via under-five clinics, CHWs, neighborhood health committees (NHCs), the radio, women’s groups, church groups, and posters. Most caregivers prefer communication in person so that they can ask questions. Most mothers obtain health information from under-five clinics, which many attend fairly regularly, especially in urban areas. When presentations at these clinics are interesting and questions are welcomed, mothers like to attend. The other communication channels are underused.

Malaria information should focus on (1) the amount of medication to give, (2) the importance of completing the course of medication, (3) looking for signs of failure to respond, and (4) seeking immediate treatment at the health center if a child begins to twitch or convulse.

**Community partnerships and community-based care should be strengthened. Serious consideration should be given to using community health workers for education and front-line treatment for uncomplicated malaria.**

Current policies in Zambia call for presumptive treatment of high fever as malaria and for CQ to be used as the first-line drug. Children seen at health centers for uncomplicated malaria are not necessarily getting better treatment than children treated at home. Treatment is already taking place in the community, and there are a number of positive elements in place that are required for adequate home care. Mothers know the signs of malaria, and they quickly respond by giving antipyretics and CQ.

The basic elements lacking from the treatment picture are ready access to a complete dose and actual administration of the complete dose. These elements could be provided in the community if the potential of community providers and networks (CHWs, NHC members, traditional healers, and drug vendors) was exploited. Simple training would emphasize the correct dose, the importance of giving the complete dose, the recognition of when the illness does not respond, and the need to refer to the health center immediately if that happens.

Moving basic care to community providers has a number of advantages. It would allow more timely treatment by eliminating travel time to and waiting time at the health center. It would also eliminate the discomfort and possible aggravation of illness a sick child must endure on the trip to a health center. Higher rates of compliance might be achieved because community providers have more time to explain dosages to caregivers and may be able to monitor dosages. Congestion at health centers would be relieved, and staff would be free to attend to other illnesses that cannot be treated in the home.



## Introduction

### Purpose

**T**his is a report of formative research undertaken in Zambia to provide a detailed understanding of care-seeking for children under 5 years who have fever and/or convulsions, two key symptoms of malaria. In Zambia, malaria is one of the most significant contributors to the burden of disease among children under 5 years. Although a simple and inexpensive treatment for malaria exists, the 1996 *Zambia Demographic and Health Survey* found that “malaria is the major cause of hospital admissions and the number one killer among all age groups in Zambia.”<sup>1</sup>

Through the Integrated Management of Childhood Illness (IMCI) approach being taught to health providers, case management of febrile illness, including malaria, is expected to improve in health centers. Yet much treatment takes place at home, and little is known about care-seeking patterns and what prompts caregivers to select various treatment and provider options. Research questions for this study focus on the kinds of treatment given, why particular treatments are selected over others, and what factors obstruct as well as facilitate optimal treatment for febrile illness. The research was designed to be practical and with direct relevance to those involved in programming, policy, and strategies for information-education-communication (IEC), IMCI, malaria interventions, drug policy, and community partnerships.

The research was carried out by the BASICS Project with funding from the United States Agency for International Development (USAID). BASICS/Washington provided a consultant who worked with a research team composed of staff from BASICS/Lusaka, the Tropical Disease Research Center (TDRC) in Ndola, and a local NGO, the Participatory Assessment Group. The data were collected during September and October 1997. A preliminary summary report was written by the team in November 1997. The present report is the final, expanded version that incorporates comments from reviewers.

## Design and Methodology

### Sites

The research took place in three districts: Chipata (Eastern Province), Lufwanyama (Copperbelt Province), and Kitwe (Copperbelt Province).

Nine health centers were studied, three in each district. One health center in each district was in the main town. In the catchment area of each health center, two communities were sampled—one

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1. Ministry of Health Central Statistical Office and Macro International Inc. 1997. *Demographic and Health Survey, 1996*. Lusaka, Zambia and Calverton, Md.

near the health center and one farther away. A total of 18 communities were included in the study. Descriptions of the districts, health centers, and communities in the sample are found in Table 1.

### Approach

The research protocol takes a symptom-based rather than illness-based approach, concentrating on the treatment of fever and convulsions rather than on malaria. There are two reasons for this. First, the results are meant to inform Zambia’s new health worker training based on IMCI. IMCI is structured around danger signs, and high fever and convulsions are among them. Second, when an illness term such as “malaria” is used even in translation, one cannot be sure that all parties understand it to mean the same thing. Ethnographic studies from various parts of the world show that local people may use the term to cover a wider range of illnesses than clinical malaria (thereby calling something malaria when it is not), or interpret some signs of malaria, especially convulsions, as something else (thereby *not* calling something malaria when it is). By talking about symptoms, it is more likely that both researchers and respondents are talking about the same phenomenon.

Table 1. Description of Study Sites

Chipata District		
Health Center	Community (distance from health center)	Community Description
Kapata (urban)	Kapata (in urban area)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed, mostly Ngoni, Chewa, Nsenga/Nyanja</li> <li>■ <b>Characteristics:</b> High density squatter compound</li> <li>■ <b>Livelihood:</b> Low-income category civil servants</li> </ul>
	Navutika Village (8 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed, mostly Ngoni, Chewa, Nsenga/Nyanja</li> <li>■ <b>Characteristics:</b> High density squatter compound</li> <li>■ <b>Livelihood:</b> Most mothers not formally employed but some are marketeers; husbands employed in low-income jobs such as servants and watchmen</li> </ul>
Rukuzye (rural)	Chanje Village (1 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Chewa/Chichewa</li> <li>■ <b>Characteristics:</b> Plateau</li> <li>■ <b>Livelihood:</b> Agriculture—main crops are maize, cotton, groundnuts, tobacco; also beer brewing</li> </ul>
	Padambo Village (4 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Chewa/Chichewa</li> <li>■ <b>Characteristics:</b> Plateau. Village is near a dam.</li> <li>■ <b>Livelihood:</b> Agriculture—main crops are maize, cotton, groundnuts. Small-scale fishing, beer brewing, carpentry, and mat-making</li> </ul>
Kakumbi (rural)	Kanyanta Village (nearby)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Kunda/Chikunda</li> <li>■ <b>Characteristics:</b> Valley</li> <li>■ <b>Livelihood:</b> Agriculture—cotton, maize, rice, cassava, sorghum, and groundnuts. Fishing and illicit beer brewing</li> </ul>
	Kapanzi Village (14 km from HC)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Kunda/Chikunda</li> <li>■ <b>Characteristics:</b> Valley</li> <li>■ <b>Livelihood:</b> Agriculture—main crops are rice, sorghum, maize, and sweet potatoes</li> </ul>

Table 1. Description of Study Sites (cont'd)

<i>Kitwe District</i>		
Health Center	Community (distance from health center)	Community Description
Ipusukilo (urban)	Ipusukilo Compound (nearby)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed ethnic groups/Bemba</li> <li>■ <b>Characteristics:</b> High density squatter compound</li> <li>■ <b>Livelihood:</b> Charcoal burning, marketeering, illicit beer brewing, very low-income employment such as security guards and house servants</li> </ul>
	Chipata Compound (5.5 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed ethnic groups/Bemba</li> <li>■ <b>Characteristics:</b> High density squatter compound, near Kafue River</li> <li>■ <b>Livelihood:</b> Marketeering, very low-income employment like security guards and house servants; a few have small farming plots on the outskirts of compound, across the river</li> </ul>
Ndeke (urban)	Ndeke Township (nearby)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed ethnic groups/Bemba</li> <li>■ <b>Characteristics:</b> Medium density</li> <li>■ <b>Livelihood:</b> Low- to medium-income employees; marketeering; a few engage in very small-scale farming on the outskirts of the compound</li> </ul>
	Mulenga Compound (3 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed ethnic groups/Bemba</li> <li>■ <b>Characteristics:</b> High density squatter community, located near Kafue River</li> <li>■ <b>Livelihood:</b> Small-scale trading activities and marketeering; low-income jobs like security guards, house servants; a few rely on small farming plots on the outskirts of the compound</li> </ul>
Twibukishe (semi-urban)	Twibukishe (several communities in the township area within 3 km of HC) Narratives only	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed ethnic groups/Bemba</li> <li>■ <b>Characteristics:</b> mining township</li> <li>■ <b>Livelihood:</b> Mining</li> </ul>
<i>Lufwanyama District</i>		
St. Joseph Mission (urban)	Kashimoto Village (13 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Predominantly Lamba, some Chokwe/Chilamba, Chichokwe</li> <li>■ <b>Characteristics:</b> Plateau</li> <li>■ <b>Livelihood:</b> Subsistence farming (maize and sweet potatoes), beer brewing; fishing on a small scale from streams</li> </ul>
	Chibangu Village (2 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Predominantly Lamba, some Chokwe/Chilamba, Chichokwe</li> <li>■ <b>Characteristics:</b> Plateau</li> <li>■ <b>Livelihood:</b> Farming, marketeering, beer brewing, and charcoal burning</li> </ul>
Shimukunami (rural)	Katembula (nearby)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Predominantly Lamba, some Kaonde/Chilamba, Kikaonde</li> <li>■ <b>Characteristics:</b> Plateau</li> <li>■ <b>Livelihood:</b> Subsistence farming, marketeering, beer brewing, and honey collecting</li> </ul>
	Mpopo (12 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Predominantly Lamba, some Kaonde/Chilamba, Kikaonde</li> <li>■ <b>Characteristics:</b> Plateau with several dambos</li> <li>■ <b>Livelihood:</b> Subsistence farming (sweet potatoes, maize, cassava, sorghum); fish trading and beer brewing</li> </ul>
Mukumbo (rural)	Mukumbo (nearby)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Lamba, Lima/Chilamba, Chilima</li> <li>■ <b>Characteristics:</b> Valley, near Kafue River</li> <li>■ <b>Livelihood:</b> Subsistence farming (maize, sorghum, sweet potatoes); fishing, mainly for consumption</li> </ul>
	Chifumpa (22 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Lamba/Chilamba</li> <li>■ <b>Characteristics:</b> Valley, near Kafue River</li> <li>■ <b>Livelihood:</b> Subsistence farming (maize, sorghum, and sweet potatoes); fishing mainly for consumption; women engage in beer brewing</li> </ul>

## Methodology

The study was principally qualitative in nature, although key standard information was quantified.<sup>2</sup> The research was organized into modules, described below.

### ■ Illness narratives

Illness narratives are open interviews that elicit detailed chronological descriptions of illness episodes and their treatment. The researcher can probe to gain an understanding of why particular treatments were chosen and of the perceived efficacy of those treatments. All children under 5 years who had had fever and/or convulsions in the previous 3 weeks were identified in initial village discussions; researchers then interviewed as many of the caregivers of these children as could be located. This community-based sample avoids the bias of samples drawn from health centers in estimating frequency of types of treatment, and permits the examination of treatment patterns for febrile illnesses with a range of accompanying symptoms and a range of severity. A total of 154 illness narratives were conducted. The demographic characteristics are presented in Table 2.

### ■ Health center interviews and observations

The research included a health center module to understand the caregiver's experience in the health center and how it bears upon the overall care that a child receives. It should be emphasized that the primary purpose was *not* to assess the quality of health services or the capability of health providers, but rather to understand the health center experience from the caregiver's perspective and to identify those factors that encourage or discourage the caregiver to proceed with optimal treatment.

Eighty-nine caregivers who had brought in a child under 5 years because of fever and/or convulsions were followed through the course of the visit.

The components of the health center module are as follows:

*Preconsultation interview with caregiver* to find out a brief history of the illness, treatments already tried, and/or providers consulted

*Observation of the caregiver's consultation with the provider* to note the provider's questions about the history of the illness and treatment, and how well the provider communicates with the caregiver about the diagnosis

*Observation of the treatment room* to note medication regimes prescribed, whether medication is identified to the caregiver, and the quality of communication about how to administer medications

Table 2. Characteristics of Narratives Sample ( $n=154$ )

Mother is caregiver (interviewee)	92%
Caregiver's median age	27 years
Child's median age	1 year 8 months
Gender of child	
Female	58%
Male	42%

2. Although basic treatment information from the narratives as well as from the clinic module was quantified, we include only a limited amount of quantitative data in this report. As with most qualitative studies where the primary aim is to gather in-depth information on a topic, the samples are rather small: 154 illness narratives and 89 clinic cases. Some basic frequencies are presented within the text, primarily to indicate orders of magnitude and support assertions about care-seeking patterns.

*Exit interview with the caregiver* to assess the caregiver's ability to understand and recall the recommendations, the caregiver's confidence in diagnosis and treatment advice, and her satisfaction with the visit

*Follow-up home interviews* to see how well the caregivers are complying with the recommended treatment after 2 or 3 days

*Interview with the provider* to obtain provider's perspective on caregivers' treatment practices

Table 3 gives basic demographic characteristics of the health center sample.

**Table 3. Characteristics of Health Center Sample (n=89)**

Mother is caregiver (interviewee)	94%
Child's median age	1 year 2 months
Gender of child	
Female	52%
Male	48%

■ **Focus groups with caregivers to elicit terminology and construct illness taxonomies**

In each of the 18 communities, focus groups were conducted to determine the terminology for and concepts of fever, convulsions, and malaria. Questions on recognition of and treatment for anemia were also asked.

■ **Interviews with health providers not based at health centers**

Community providers who were not based in a health center but had a role in the treatment of children with fever and/or convulsions were interviewed: CHWs, traditional healers, drug vendors, and pharmacists.

Table 4 indicates the number of modules and respondents by district.

**Table 4. Methods and Sample Size**

<i>Method</i>	<i>Chipata District</i>	<i>Kitwe District</i>	<i>Lufwanyama District</i>	<i>TOTAL</i>
Terminology and taxonomy focus groups	6*	6*	6*	<b>18</b>
Illness narrative interviews	44	55	55	<b>154</b>
Health center interviews and observations	29	30	30	<b>89</b>
Community health worker interviews (CHWs not found in all sites)	2	0	4	<b>6</b>
Drug vendor interviews	8	11	8	<b>27</b>
Traditional healer interviews	5	3	3	<b>11</b>

\* number of participants in each group ranged from 10 to 20

## A Model of Malaria Treatment

Current policy in Zambia calls for all fever cases to be treated presumptively for malaria and for CQ to be used as the first-line antimalarial drug. Fansidar™ (a trade name for sulphadoxine-pyrimethamine, or SP) is to be used in cases of CQ treatment failure or of a resumption of symptoms due to an infection with a malaria parasite that is resistant to CQ.<sup>3</sup>

The team developed a model that defined the steps necessary for the proper treatment of febrile illness within this policy context. The model was used as a framework to ensure all important topics were covered by the research. It was also used in the analysis phase as a diagnostic tool to indicate which steps in the treatment of childhood malaria in the community were weak and therefore should be targeted by the intervention. The major steps in the model were:

- Recognition of illness signs
- Appropriate home care and monitoring for up to 36 hours after onset of fever
- Treatment at health center (if drugs not available at home or CQ not effective)
- Compliance with health center recommendations and monitoring for CQ treatment failure
- Return to health center for in case of CQ treatment failure

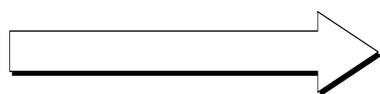
Figure 1 depicts the model of optimal care-seeking treatment where CQ is the first-line drug for febrile illness.

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3. CQ efficacy studies were recently carried out in Zambia by the National Malaria Control Centre and Ministry of Health personnel, along with the U.S. Centers for Disease Control and Prevention. The studies were conducted in six geographically representative sites and found levels of parasitological resistance to CQ ranging from 30% to 70%. See Barat, L. et al., "A Systematic Approach to the Development of a Rational Malaria Treatment Policy in Zambia," *Tropical Medicine and International Health* 3 (7) (July 1998).

**Figure 1. Steps to Successful Treatment of Malaria  
(Model of ideal treatment in Zambia where CQ is the first-line drug)**

<b>Step 1 Recognition of Symptoms</b>		<b>Step 2 Appropriate Home Care and Monitoring</b>	<b>Step 3 Treatment at Health Facility (HF) [Quality of Care]</b>			
<b>Caregiver recognizes early signs</b>	<b>Caregiver recognizes illness symptoms</b>	<b>Caregiver gives appropriate home care and decides to go to the health facility when symptoms warrant</b>	<b>[Health Facility is accessible]</b>	<b>Staff takes adequate history; gives adequate exam and correct diagnosis</b>	<b>Staff prescribes correct treatment</b>	<b>Staff dispenses and explains correct treatment and follow-up; refers when necessary</b>
Crying/irritability	Fever	Do tepid sponging	Health Facility open	Ask history of fever	Correct antimalarial prescribed (CQ or Fansidar™)	Correct drug given
Appetite loss	Chills/sweating	Give antipyretic (e.g., Panadol, aspirin)	Distance not excessive	Ask prior treatments, esp. CQ	Correct dose prescribed	Full, correct dose given
Less active	Vomiting	Give correct dose of CQ	Permission not needed	Take temperature	Feeding advice given	Correct regime clearly communicated
	Symptoms perceived as abnormal	Watch for signals to go to HF immediately: – fever persists after CQ – stupor/lethargy – twitching/convulsions	Affordable cost	Lab work, if available	Return visit explained: in 3 days for review, or immediately if no improvement	Correct regime understood by mother
				Diagnose malaria		
				Communicate diagnosis		



<b>Step 4 Compliance and Monitoring for CQ Failure</b>		<b>Step 5 Return Visit to Health Center</b>	
<b>Caregiver gives correct treatment, and/or goes to referral, or both</b>	<b>Caregiver recognizes treatment failure and decides to go to health facility</b>	<b>[Health Facility is accessible]</b>	<b>Staff takes history, examines and diagnoses; prescribes, dispenses, explains correct treatment; refers when necessary</b>
Gives correct dose	Watch for signals to return immediately to health facility: – fever persists – stupor/lethargy – twitching/convulsions	Health Facility open	SQ given (or quinine if necessary)
Follows feeding recommendations		Distance not excessive	
		Permission not needed	
		Affordable cost	



## Terminology and Illness Concepts

The team conducted one focus group in each of the 18 communities to learn the local terminology for fever and for febrile illnesses and to create taxonomies of those illnesses. The three districts included in the study encompassed eight languages: Nyanja, Chichewa, Chikunda, Bemba, Chilamba, Chichokwe, Kikaonde, and Chilima.<sup>4</sup>

It proved difficult to construct clear taxonomies differentiating illness, symptoms, cause, and treatment. The number of languages made extensive taxonomic analysis unfeasible within the time constraints of the study. But there were other reasons for the difficulty, because of local concepts of illness, symptoms, and cause. For one, symptoms and illnesses are not always separable. Some symptoms, like fever or cough, are also illnesses. For another, it appears that many mothers more often think in terms of a child having several individual symptoms, rather than an illness that has several symptoms associated with it. Further, some symptoms are perceived as causing other symptoms:

**Q: What do you think might have been the cause of the illness?**

A: *The diarrhea was due to weaning . . . As for fever, it was due to diarrhea.* [Lufwanyama/St. Joseph]

**Q: On that first day, what did you think the child suffered from?**

A: *I thought that he suffered from chest infection and fever.*

**Q: What do you think caused the illness in your child?**

A: *I think the cough was due to dust and fever was due to sneezing.* [Chipata/Kakumbi]

**Q: What caused all this?**

A: *Diarrhea, I think it's the water which we drink because we don't boil it. Coughing, it's from dust. Maybe it's the coughing and diarrhea that caused body hotness.* [Lufwanyama/St. Joseph]

**Q: What do you think then brought about the fever?**

A: *I thought it was the cough itself.* [Chipata/Kakumbi]

**Q: What sort of illnesses do you suspect if a child has fever?**

A: *Headaches and diarrhea, and even malaria. Coughing also brings fever.* [Kitwe/Ipusukilo]

Sometimes concepts of cause and effect, and prevention and treatment, are melded or even reversed.

**Q: How do you prevent malaria?**

A: *You take the child to the health center for chloroquine.* [Lufwanyama/Mukumbo]

**Q: What caused the body hotness?**

A: *We thought it was because of crying a lot, as she had cried a lot.* [Kitwe/Ndeke]

**Q: What causes malaria?**

A: *When the child is crying, she could have malaria.* [Lufwanyama/Mukumbo]

4. The language associated with each village is indicated in Table 1. Description of Study Sites.

There did emerge from the focus groups, however, some clear commonalities regarding the terminology and perceptions of malaria. The term for fever in all local languages is a literal translation of “body hotness.” When asked what childhood illnesses can cause fever, all groups mentioned the English term “malaria” as well as local terms that correspond to some degree with malaria. Use of the English word “malaria” is apparently becoming more common. One older woman in a focus group in Chipata/Kakumbi gave a local term for a type of fever with malaria-like symptoms, but then commented that this was “the term we have been using as old people but now you young ones say *malaria*.” Although there are many perceived causes of fever, malaria is the predominant one.

Mothers have good general knowledge of the signs of malaria, associating it with high or intermittent fever, vomiting “yellow stuff,” chills and sweating, and diarrhea. Many also know that anemia can result from frequent or prolonged attacks.

Regarding causes of malaria, however, respondents have some medically inaccurate ideas. Malaria was associated in all focus groups with mosquitoes, but also with cold or changing weather, dirty water, and cold food. Some respondents who blamed mosquitoes also said they were puzzled that malaria now comes in the dry season when there are few mosquitoes. For example, in answer to the question “What causes malaria?” the following comments are typical:

*If it is during the rainy season, we say it is malaria because of mosquitoes. But in the absence of rain we are confused about the possible causes. [Chipata/Rukuzye/Chanje village]*

*We are told that it is uzuzu (mosquitoes), but what surprises us is that even in times when there is no uzuzu people still suffer from these illnesses especially malaria . . . Another surprising thing is that during the rainy season when there are a lot of uzuzu, fewer children and adults suffer from malaria, as compared to when we have few mosquitoes in the cold and dry season. [Chipata/Rukuzye/Padambo village]*

Almost all said that convulsions can result from high fever and that they are dangerous. Twitching is recognized as a precursor to convulsing and it is therefore considered a danger sign in itself. Participants in all 18 terminology focus groups distinguished between “big convulsions” and “small convulsions.” The former appear to be epileptic convulsions (described as an inborn condition that comes on without fever and causes the child to urinate) and the latter non-epileptic, febrile convulsions (described as coming as the result of fever or malaria and of responding to antimalarials). Although convulsions are associated with fever and malaria, they are also associated with witchcraft, leading to different care-seeking patterns for uncomplicated malaria and for severe malaria with convulsions. The patterns for uncomplicated malaria and for febrile illness with convulsions are both described in this report.

## Treatment of Febrile Illness

### Recognition of Illness Symptoms

**T**o treat an illness in a proper and timely manner, a caregiver must recognize when a child becomes ill. In the illness narratives and health center interviews, researchers investigated what symptoms are considered to define the start of illness by asking caregivers when the child became ill and how they knew the child was ill. Further, to determine whether caregivers are sensitive to preliminary signs that a child is getting ill, they were asked what the child was like the day before the child became ill. Thus, the initial sequence of questioning was:

- *When did the child become ill?* (Ascertains day caregiver defined the child as ill)
- *How did you know the child was ill?* (Ascertains symptoms that define “ill”)
- *What was the child like the day before she/he became ill?* (Determines recognition of early signs)

In spite of the many demands on their time and attention, caregivers appear to be very attuned to the condition of their children. When asked what the child was like the day before becoming ill, over 80% of caregivers reported noticing crying or irritability, diminished activity, and/or decreased appetite. Increased thirst was also mentioned, but by a much smaller proportion of caregivers. Noticing these pre-illness signs is a positive finding, as it suggests that caregivers are alerted that something might be amiss, probably leading them to early recognition of a worsening condition. Figure 2 shows typical responses about how the child was the day before becoming ill.

Fever is a defining indicator of illness. Mothers appear to be well aware of when fever starts and its course—when it worsens or abates—over a given period of time. Many narratives included descriptions of the level of fever at various points throughout a day.

*I know he has malaria because his fevers only get worse at night.* [Kitwe/lpusukilo]

*The body hotness improved, but diarrhea continued . . . During the night the body became very hot again.* [Lufwanyama/Shimukunami]

*In the morning he was no longer looking tired and the body temperature had subsided. He appeared bright in the eyes. But again towards evening, the body temperature shot up again.* [Lufwanyama/Shimukunami]

Fever is considered serious when it is high, persistent, or accompanied by other illness signs such as diarrhea, vomiting, or cough. Fast breathing, grunting, extreme weakness, lethargy, and twitching and convulsions are also considered danger signs. (Twitching and convulsions will be discussed separately in a later section.) Figure 3 gives typical examples of how mothers define “serious.”

## Figure 2. Recognition of Early Signs of Illness

Asked how the child was the day before becoming ill, over 80% of respondents gave answers such as the following; the rest said the child seemed okay the day before.

*On Sunday the child was quiet, not happy, not playing. I knew my child was going to be sick.* [Chipata/Kapata]

*She refused to eat breakfast, she became less playful and became continuously thirsty.* [Chipata/Kakumbi]

*The child was playing but he did not eat enough of the rice I boiled for him. At 12 hours he did not even eat at all the nshima I cooked for him but he was still playing.* [Chipata/Kakumbi]

*The child was fine and was eating in the morning and was playing as usual. But in the evening I noticed the baby was crying and less active.* [Lufwanyama/St. Joseph]

*. . . around 16:00 hrs the child stopped playing. Then I noticed something quite unusual: a short while later, around 17:00 hours, he went to sleep. I have never known him to sleep that early. . .* [Lufwanyama/St. Joseph]

*The child was playing but irritable and crying frequently. You give him this and he throws it away and says, "I want something else." You give him that and he throws it away again and says, "I don't want this," and cries.* [Lufwanyama/St. Joseph]

*He was crying a lot. If I put him on back, he wanted to be in front. He was quite irritable. If I left him alone, he would cry. He only wanted to be with me. He was less active, I would say. I was observing him and I just kept him on my back.* [Lufwanyama/St. Joseph]

*But she was not playing as much as she usually does. When I asked her why, she said she was tired. She did not eat as she usually does. So when she fell sick the following day, I knew that was the reason she did not look cheerful the previous day.* [Lufwanyama/Shimukunami]

*Last week Monday the child looked unwell—crying and looking unhappy. I did nothing at home and we just observed him.* [Kitwe/lpusukilo]

*During the day and the afternoon she was feeling well and playing about, but she changed in the evening. Supper was prepared but she did not eat. Her body was weak.* [Lufwanyama/Mukumbo]

*The baby was fine in the morning. However she started behaving strangely in the afternoon—crying and then she stopped breast feeding.* [Lufwanyama/Mukumbo]

*The child was fine the whole morning and afternoon but changed in the evening when she started crying, drinking a lot of water, and then she went to bed very early.* [Lufwanyama/Mukumbo]

Caregivers are also aware of signs of anemia, described in all focus groups as weakness accompanied by the body, palms, and eyes looking pale. Several groups also mentioned swollen body or limbs as a sign. Anemia is thought to be lack of blood and is correctly associated with not eating well and malaria. Some also associate it with diarrhea. All groups said that anemia is treated by eating certain foods (beans, eggs, fruits, or vegetables were most often mentioned) and by taking pills from the health center. Almost all mentioned giving the child a drink from boiled avocado leaves, a remedy promoted in the health centers. A few mentioned that the child gets a blood transfusion. Typical responses to questions asked in focus groups about anemia are found in Figure 4.

Figure 3. How Mothers Define “Serious”

. . . When I lifted her I found that she had purged in her clothes. She was very weak she could not even sit and her body was hot. I asked the older children what had happened but they said they just noticed that their young sister was not well suddenly. They also said she had been vomiting yellow stuff. I was scared because this was a very serious condition. [Chipata/Kakumbi]

**Q: At the time you took the child to the clinic, how did you consider the condition of the child—very serious, a bit serious, or not serious at all?**

A: He was quite sick but I can't say he was serious. (Child had had high temperature and cough)

**Q: What symptoms would you have seen if you were to have considered your child as serious?**

A: Very fast breathing, very weak, and moving the neck backwards. [Kitwe/Ipusukilo]

**Q: How serious was your child's condition? (Mother had noticed fever and given leftover CQ and Panadol, and the fever had subsided.)**

A: I did not think it was very serious. That is why I decided to give him medication at home. (She lives about 150 meters from the health center.)

**Q: What would you call a serious condition?**

A: When the body gets very hot and the child starts breathing fast. I would have taken him to the health center if he had become worse. [Lufwanyama/Mukumbo]

**Q: At the time you took the child to the health center, how would you describe the condition of the child—not serious, somewhat serious, or very serious?**

A: Not serious.

**Q: What condition would you have seen if you were to describe your child to be very serious?**

A: The child would be extremely weak and fail even to talk. The eyes would be rolling upwards. [Lufwanyama/St. Joseph]

**Q: How was the child's condition?**

A: My child's condition was not serious, since he was eating and was not very weak.

**Q: How does a child who is serious become?**

A: It stops eating, does not talk, and is very weak. [Lufwanyama/Shimukunami]

**Q: What do you consider serious?**

A: When the child is not talking and has extreme body weakness and is also grunting. [Lufwanyama/Shimukunami]

**Q: At the time you took the child to the clinic, how was its condition?**

A: I wouldn't say the child was very serious because amid spells of the illness he could still play once in a while.

**Q: What symptoms would you have needed to see to describe the child as serious?**

A: Well, a serious child will be known from the way it breathes and grunts and has severe weakness, like the child I found at the clinic.

**Q: What then made you decide to take the child to the clinic on that day?**

A: Because there was not any improvement in the child's body temperature. [Kitwe/Ndeke]

## Treatment for Fever

Fever is something that warrants attention; no case of fever recounted in the narratives was left unattended. At the same time, fever is extremely common and is not immediately considered serious.

Figure 4. Perceptions of Anemia

**Q: How do you know when a child has anemia?**

A: *The child looks pale. The eyes, palms and soles of the feet look white and the child looks very weak. (All agree).*

**Q: How does a child get anemia?**

Woman 1: *If the body gets hot often, it causes the loss of blood.*

Woman 2: *If the child suffers from severe malaria he develops anemia.*

Woman 3: *When a child does not get proper or enough food.*

Woman 4: *If a child gets sick with measles and does not eat proper food. (All agree).*

**Q: Is there any way to prevent a child from getting anemia?**

Woman 1: *By feeding children well—give them proper and enough food.*

Woman 2: *By keeping them warm so they won't suffer from malaria.*

Woman 3: *By having clean home surroundings to avoid getting malaria which causes anemia.*

**Q: How do you treat a child with anemia?**

Woman 1: *We boil avocado leaves and give them the liquid.*

Woman 2: *We give them the red drink so that they replace the lost blood.*

Woman 3: *We give them nicely cooked tomatoes and vegetable soup.*

Woman 4: *We also give proper food like a lot of vegetables with groundnuts. And we make sure we give them enough food.*

Man: *They also take the children to the clinic.*

Woman 5: *Oh yes, we are given some tablets for anemia when we go to the clinic.*

[Lufwanyama/Mukumbo]

Typically the initial response to fever is to treat at home and monitor the child's condition. Over three-quarters of the 154 caregivers giving illness narratives reported some form of home treatment as their first response to febrile illness. Home treatments include both traditional and modern remedies:

- To lower a child's fever, sponging or bathing with tepid to cold water and uncovering the child have been encouraged in the health centers and widely adopted by mothers. Over one-third of caregivers reported sponging or bathing as one initial response to their child's last fever.
- Commercial antipyretics, such as Panadol, Cafenol, or aspirin, are given at home in about one-third of cases as initial treatment, and given at some point in the treatment process in about 90% of cases.
- CQ, usually left over from a prior illness, was given at home as a first response in about 13% of cases and given at some point in the treatment process in over 66% of cases.
- Herbal drinks or mixtures for rubbing on the body are given as the initial treatment in about 15% of cases.

The most common response to fever is to take the child to the health center, reported in 70% of cases. Generally it appears that treatment at home does not replace or unduly delay going to the health center. Most caregivers who took the child to the health center did so less than 48 hours after fever was noticed, indicating fairly prompt treatment by a formal provider. However, when home treatments abate symptoms, caregivers may delay going to the health center.

**Q: *What then did you do (Sunday, after noticing symptoms)?***

A: *I gave him nothing except a Cafenol that I bought from a ntemba (makeshift stall) . . . On Monday, I took him to the clinic because the temperature was not coming down. [Kitwe/lpusukilo]*

**Q: *When did your child fall sick?***

A: *Last week on Monday.*

**Q: *How did you know your child was sick?***

A: *She went back to sleep just after waking up in the morning. I went and touched her and found that her body was hot. She also started having diarrhea. I thought she had malaria and I took her to the health center at around 11:00 hrs. [Lufwanyama/Shimukunami]*

*Monday afternoon, my child refused to eat and then got body hotness. In the night the body was very hot and started twitching. I bathed the child in cold water in the early hours of Tuesday. On Tuesday morning I tried to feed the child porridge, but she vomited yellow stuff. I took my child to the clinic . . . [Kitwe/Ndeke]*

Children are taken to the health worker whether the episode is perceived as serious or not, especially when the health center is fairly close. Among caregivers interviewed at health centers, about 10% thought the child was in serious condition, while the rest were about equally divided between assessing the child's illness as somewhat serious or not serious.

Key factors in whether a child will be taken to the health center are:

- *Whether the child's condition is continuing or worsening.* If a child does not respond to initial treatment or develops additional or more serious symptoms, he or she is likely to be taken to the health center. Because the narratives sample included all febrile illness cases in a given community, it included mild episodes that appeared to self-resolve after a day or two. *If an illness comes and goes, it means it is not serious so you just treat at home [Kitwe/Ndeke].*
- *Whether there are drugs in the home or otherwise readily available.* If pharmaceuticals such as Panadol, aspirin, or CQ can be given at home and the child responds, the caregiver generally does *not* seek treatment at the health center.
- *Availability of drugs at the health center.* A major reason caregivers go to the health center is to obtain drugs. If a caregiver knows that the center is out of drugs, she will probably decide *not* to go. From a focus group in Chipata/Kakumbi, which had the lowest proportion of children taken to the center for care: . . . *when we reach there we are always told that there are no medicines so we just stay at home and wait for fate.*
- *Perceived quality of care at the health center.* Level of confidence in the clinician also affects the decision. In a health center where the clinician gently examined the child, respectfully asked questions of the mother, and gave feedback on the condition of the child, mothers waited until they knew that clinician was on duty to seek care. In a health center where a doctor as opposed to a clinical officer (CO) was available, *all* mothers interviewed in that catchment area reported taking the child to the health center for the recent febrile episode. Conversely, in another where the attending clinician had a drinking problem, mothers hesitated to use his services.

Poor staff attitudes can discourage a caregiver from going to a health center. Especially in focus groups, mothers mentioned that they feared being scolded for treatments they had given the child before coming to the center, or for losing their under-five card (their record of prior visits and treatments).

- *Distance from the health center.* The closer children live to the center, the more likely they are to be taken there. The illness narratives indicate that 79% of cases living within one hour’s traveling time were taken, compared with 58% of cases that lived farther away. Distance is also a factor when caregivers consider taking the child for a second visit to the health center for the same illness: about 16% of those who lived near and 3% of those who live farther away took the child for a follow-up visit when symptoms continued. Most travel by foot and occasionally by bicycle.
- *Cost.* Only one health center in the sample charged fees, so no firm conclusion can be reached, but it appears that fees can discourage caregivers from seeking treatment at a facility. Only 45 to 50% of cases in its catchment area were taken to the health center that charged fees—the lowest percentage in this study, and equal with the health center that had no drugs. Caregivers in the catchment area of the fee-charging center most frequently cited lack of money as a reason for not taking the child there.

Because of these factors, the percentage of cases taken to a health center varied widely by district: 80% in Kitwe, 70% in Chipata, and 58% in Lufwanyama. Kitwe is more urbanized than the other sites, and health centers there are more accessible and more likely to have drugs.

Travel time and cost were the principal external constraints mentioned. Lack of childcare for other children left at home was rarely mentioned. Need for permission to go to the health center (from husbands, mothers-in-law, or others) is not an obstacle; mothers in the narratives said they made their own decisions about treatment.

In a few cases, mothers did not seek help at the health center because they believed the febrile illness to be unsuited to modern care. A few waited to see if a rash would come out, indicating measles, which some believe should not be treated at the health center. In some of the cases when convulsions developed, witchcraft was suspected and modern care was not sought. (Treatment patterns for convulsions are discussed later under the heading *Treatment for Convulsions*.)

Figure 5 contains direct quotes of caregivers’ reasons for *not* attending the health center.

### ***Caregivers’ Experience at the Health Center***

Researchers visited the health center to learn what caregivers’ experience there is like and how it might influence their care-seeking. Caregivers who brought a child presenting with fever were interviewed before and after their consultation with the provider. They were also observed during the consultation and in the treatment room where medications are dispensed and injections given.

Most health centers are crowded, so waiting times are usually an hour and can be much longer. Most centers have no triage system for urgent cases to receive rapid care. Mothers report that staff leave at lunch and turn away even urgent cases at the end of the day.

In some health centers there is no separate room for consultations—the crowded waiting room is also the consulting room. In most health centers, there was only one health provider on duty. Usually the provider was a clinical officer with a basic 3-year medical training. In some health centers there was also a nurse, and there was a doctor in one private facility. In three of the health centers, the provider had undergone IMCI training.

## Figure 5. Barriers to Going to the Health Center

*I heard from someone who had gone to the health center that there were no medicines so I decided not to go there and decided to give her the Cafenol at home. [Chipata/Kakumbi]*

*I didn't go to the clinic because most of the time they say they have no drugs. When they have, they usually only give half a tablet and you just take it at the clinic. They never give you something to carry home. So they don't give enough. And those people at the clinic never really examine our children. They just write what we tell them. If you ask questions, they would just shout at you that "There is nothing that you can tell us. This is not your relative's clinic." [Chipata/Rukuzye]*

*I hate standing on long queues for hours. You arrive as soon as they open the clinic, but you can still be there even after lunch. I thought of trying treatments at home since I had an idea what was wrong with her. [Kitwe/Ndeke]*

*I have got no money. They charge K200 for a card (registration) and K300 for medicine. All together I will have to pay K500. I don't really like going to the clinic because the nurses there always scold us over very little things. They do not attend to our children when we don't have money and they send us away. [Lufwanyama/St. Joseph]*

**Q: (Mother has said she purchases medicine instead of getting it at the clinic) Isn't it like just going to the clinic? Why don't you use the money you buy the drugs with to pay for the clinic visit?**

**A:** *Because 2 tablets of Panadol or Cafenol are only K100 to buy medicine. The clinic costs K300. Most of the women here can afford K100 to buy medicine but not K300 for the clinic. [Lufwanyama/St. Joseph]*

*Since I am pregnant, I could not manage carrying him because St. Joseph Mission is very far from here. [Lufwanyama/St. Joseph]*

*During the time the child was sick, I was also sick. The other thing is that it is very far to the health center. Unless I had a bicycle, I could not have taken her there. [Lufwanyama/Mukumbo]*

**Q: Why did you decide not to go to the clinic?**

**A:** *Nothing in particular. I saw that he had recovered so I didn't go. Besides I had drugs which I had kept so there was no need to go to clinic.*

**Q: Do you find any problems going to the clinic?**

**A:** *It is far. That is why sometimes we feel lazy. We take about 2 hours on foot. [Lufwanyama/Shimukunami]*

**Woman 1:** *We get discouraged from taking our children to the clinic because they tell us there is not enough or no medicine most of the time.*

**Woman 2:** *After travelling for so long to the clinic, it is very discouraging when they tell you there is no medicine.*

**Man:** *The nearest clinic is about 1½ hours walk from here. Some mothers feel lazy to walk that far, especially when the condition of the child is not that serious. When they get there, the queues are very long. They have to wait for a very long time. This just discourages them so much. (All agree.) [From Kitwe/Ipusukilo focus group]*

*History-taking.* During consultations, researchers noted what questions the providers asked the caregiver about the child's illness, how they examined the child, and whether they told the caregiver their diagnosis. Most providers ask little or nothing about the illness history of the child. They tend to ask, "What's wrong?" and get answers such as, "Fever and cough." Some providers actively discourage mothers from communicating with them.

**Q: What did you think the illness was?**

A: *They didn't tell me at the clinic but I thought it was malaria because she was vomiting yellow stuff. You can't tell them what you think the illness is at the clinic because they'll shout at you saying "How do you know?" So you just tell them the signs you've seen. [Lufwanyama/St. Joseph]*

**Q: Did you tell the clinician that the treatment was not having any effect?**

A: *No. I would have been scolded: "You can't tell the clinic what you think. The clinic is not yours." Most of the clinic staff are not sympathetic enough, especially when one asks for drugs. [Chipata/Rukuzye]*

Providers rarely ask caregivers what treatments they have already tried and say the caregivers do not tell them. (Our interviewers got this information from caregivers without difficulty.) Because Zambian policy is to give Fansidar™ in cases of CQ treatment failure, it is especially important for providers to know whether CQ has already been given, yet few ask about it and mothers generally only give information if asked.

*Examination.* The average examination session lasted 6 minutes. Providers tend to examine children superficially. Some do not touch and hardly look at the child. In one-third of cases, they did not take the child's temperature, even though fever was the main presenting symptom. Typically they gave the caregiver little feedback on the child's condition, the diagnosis, or the recommended treatment. They usually wrote their treatment recommendation in the child's record and passed it to the staff in the treatment room. Some showed little empathy and concern, and some scolded caregivers. *"Sometimes nurses shout at us because we do not look after our children properly."* One provider was drunk on all 3 days that the team visited the area.

There are exceptions, mostly providers who had been trained in IMCI. Their history-taking and physical exam procedures were far more complete, and most gave feeding recommendations and asked for follow-up ("review") visits. They communicated with caregivers more and in a more positive matter. Another exception was the private facility that serves mine workers in Kitwe, where generally superior care was provided.

*Treatment.* Medications and injections are administered by a separate health provider in the treatment room. Virtually every child is given or prescribed drugs, often two to four at a time. CQ, Panadol, and Septrin (an antibiotic) were the typical drugs prescribed. The names of the medications are seldom communicated to the caregiver. Instructions on administration are usually given rapidly, sometimes in noisy conditions, and the caregiver is rarely asked if she understands the dosage. These conditions discourage the caregiver from asking questions. Instructions are not always written, and when they are, they are often unclear. Many caregivers leave the health center confused about how medications are to be given.

*Referrals.* Of the 89 cases observed at a health center, 9 were referred to a higher-level facility for care. Caregivers say they would find it difficult to act on referrals because of distance and the transportation cost. It was not possible to follow up and find out how many of the nine referrals were complied with.

*Caregivers' perceptions of the health center.* Most caregivers have confidence in the formal health system for treating febrile illness. They believe that providers have medical expertise and know

appropriate treatments for their children. The fact that providers have undergone training and can dispense drugs appears to be the primary basis for this confidence.

However, the level of satisfaction with the health center varies, depending on:

- *Whether drugs are prescribed and available.* This is one of the most frequently mentioned elements of satisfaction. Many caregivers see the health center as a source of drugs, and are not happy if they are given a prescription for which they must pay.
- *Perception of competence of the provider.* Caregivers form opinions about the competence of the provider based on how carefully the provider examines the child and what treatment he or she recommends. These opinions influence caregivers' willingness to seek care at the health center. Where perception of the provider was positive and overall quality of care was high, use of the health center for febrile illness was also high.
- *Staff attitudes toward and treatment of caregivers.* Caregivers are more willing to use health services when staff show interest and empathy, and less willing when staff scold and intimidate them.
- *Recovery of the child.* Caregivers also make judgments based on whether their child recovers. The declining effectiveness of CQ, as strains resistant to it spread, is beginning to erode caregivers' confidence in the providers.

Some examples of comments on satisfaction with the health center:

**Q: *Were you happy with the treatment at the clinic?***

A: *Yes, because the medicines I was given helped in curing my child and I was told to go back after two days if child does not improve. We go to clinic so that we can be given medicines.* [Lufwanyama/Shimukunami]

(Mother had indicated she was satisfied and was asked why.) *My child was examined. The doctor looked at the eyes and ears and felt the chest and body.* [Chipata/Kapata]

**Q: *Are you happy with the way the clinic operates?***

A: *Well, if it is a nice person who attends to you, if you go back because the child's condition is not improving, she will change the medication or let you see the doctor. Whereas others will shout at you that you are not giving the child the medicine properly and give you the same medicine again. The other thing is that they do not examine the child, they just take what you say and give medication.* [Lufwanyama/St. Joseph]

*They don't examine child and don't give enough medicine.* [Chipata/Rukuzye]

*Sometimes your child is ill and you go to the clinic. But then . . . you find that the child is getting worse. When you go back, they send you back and they just tell you to complete the course.* [Lufwanyama/Shimukunami]

(From Kakumbi health center exit interviews) Caregiver complained that her child had not recovered from a malaria attack despite several visits to the health center and continued CQ prescription. She felt that CQ was wrong medication for her child, as the child was not responding to its continued application. In a few exit interviews, mothers said they could not be confident in the diagnosis and treatment advice unless the treatment cured their children.

Figure 6 summarizes the factors that encourage caregivers to take their children to the health center and those that discourage them from doing so.

Figure 6. Factors that Facilitate or Impede Seeking Care at a Health Center

<i>Facilitating Factors</i>	<i>Impeding Factors</i>
Recognition of a severe or worsening condition	Child's symptoms are abating
Proximity to health center	Treatment available at home (e.g., drugs left over from previous health center visits or bought)
Free service and medication	Staff untrained or perceived as poorly trained
High perception of competence of health provider	Health center lacks drugs, or will only prescribe partial doses
Provider thoroughly examines child	Drugs perceived as ineffective—when child did not respond to CQ and caregiver knows child will be given CQ again: <i>"It is the same CQ that they will give me"</i>
Attitude of staff is friendly and empathetic	Distance from health center
Confidence that the illness is treatable by modern medicine	Cost—user fees for children who are under 5 years (St. Joseph's). Some caregivers said they do not go because they cannot afford the fees, although the health center staff said they do treat on credit.
Health center has drugs	Long waits—congestion causing waiting time of more than one hour
Convenient hours (one health center was open 24 hours)	Fear of being scolded—for such things as trying other treatments or losing the under-five clinic card
Lack of external constraints such as need for transport, childcare for other children, permission from someone else	Perceived cause of illness is not biomedical—where witchcraft is suspected, caregivers tend to seek services of a traditional healer rather than a health center
Health center cured previous illness	Measles—waiting to see if fever is due to measles (i.e., if rash comes out), which many believe should not be treated in the health center

### ***Incorrect Dosage of Chloroquine: A Key Problem***

Although CQ is the accepted treatment for fever, caregivers seldom administer the full 3-day course. Partial doses are usually given, although overdoses are not uncommon. A striking example: A mother said the nurse recommended giving 1½ teaspoons of CQ every 6 hours for a week—to a 6-month-old infant.

Caregivers who had sought assistance at a health center as well as those who treated at home were administering incorrect doses. Those who had received CQ at the health center were more likely to give the full dose, principally because most them had the full dose at hand, whereas those at home tended to treat with leftover, partial doses. But the problem of incorrect doses is still serious among those who had sought help at the health center. Caregivers get very little information on the importance of giving the full dose, at the health center or elsewhere. It is not clear that health providers themselves understand how important it is. In any event, very few tell caregivers anything about it.

There are many reasons why caregivers give children the wrong doses, including problems with the health center prescribing or dispensing partial doses, poor patient-provider communication, and incorrect home administration.

*Problems with the health center prescribing or dispensing partial doses.* Most providers knew the correct dosages, but some did not. One private facility still recommends the old 4-day regime for CQ. In one health center, the dispensing provider knew the correct dose but it was unofficial policy to give medication for only one day at a time, so that the health center could monitor daily doses. Caregivers who had to walk for several hours to reach the health center tended not to return for the next day's dose, especially if symptoms subsided.

Sometimes unqualified people such as classified daily employees (non-medical staff) or CHWs were dispensing medication and made mistakes interpreting the provider's instructions about the dose. In one case, the person dispensing medications made her own decisions about proper dosage, disregarding the recommendations of the provider who did the consultation.

Caregivers must provide their own bottles for liquid medications, and those without are told to find their own and come back. Some had dirty bottles or ones that had held Vaseline or strong chemicals such as hair relaxers.

Some caregivers said that their children often vomit the medication, so that part of the dose is lost. In most cases, no provision is made for replacement doses, and caregivers said they were reluctant to return to the health center for replacement doses for fear of being scolded by staff.

*Patient-provider communication.* Perhaps the greatest problem is that the doses are not explained clearly to caregivers. Even when doses were accurately prescribed, the caregiver was usually given rapid, inaudible, unclear instructions. Sometimes two, three, and four different medications were handed to the caregiver with very rapid instructions on each. The name or purpose of the drug was rarely stated.

Even when written instructions were given, labels and written instructions were confusing, especially those written on bottles containing liquid medications. Strokes (slashes) are used to separate the doses to be given each day, but caregivers tend to think the amounts are for morning, noon, and night, rather than first day, second day, and third day. Where daily dose instructions are written in milliliters (for example, "7.5 ml/7.5 ml/2.5 ml"), caregivers cannot convert the milliliter amounts to teaspoons.

At health centers that dispensed drugs packaged with "sun" symbols to indicate the time of day a dose is to be given, almost one-quarter of mothers did not understand the symbols. They thought a round sun, intended to mean that a dose was to be given in the morning, meant "give a whole tablet," and a symbol showing the lower half of the sun, intended to mean that a dose was to be given in the afternoon, meant "give half a tablet." Caregivers understood immediately when researchers explained the symbols to them, but no provider had ever explained.

The staff who were dispensing drugs rarely checked to see whether the caregiver understood the dosage, and some seemed annoyed if asked a question. Exit interviews minutes after caregivers received medication found that about one-third had not understood how it was to be given.

Even when providers explain the *daily* dose clearly, they seldom tell caregivers the importance of *completing the full course* of CQ. Of 72 caregivers observed receiving instructions on how to give CQ, only 3 were told the importance of giving the full 3-day course of medication. But there is evidence from three centers that there is at least occasional communication of this message. Caregivers attending the private facility that serves miners' families may have been told during earlier visits, possibly by a different health provider than the one observed during this research, because follow-up interviews after they visited the facility found that they did give the full course of CQ (although the facility prescribes and mothers give the outdated 4-day regime). One said in her illness narrative, "*They tell us if you finish a course and the child does not improve, you should go back to be referred to the doctor.*" The narratives from two other health center catchment areas also showed that staff had at some point given this instruction to mothers, and, importantly, mothers had responded.

*I continued to give drugs even when he looked well. We are told by health center staff that it's important to complete treatment course to avoid re-occurrence of illness. [Chipata/Kakumbi]*

*They said if child does not improve, come back, but if child improves, continue with medication and make sure that the child gets the medicine on time and finishes all of it. [Chipata/Kakumbi]*

*. . . we are told to complete the dosage course for all medication and I do that. So I am never left with any medication at home. Besides, the health center is very near. [Lufwanyama/Shimukunami]*

Unfortunately, these examples are far too uncommon; not one other caregiver mentioned being told to give a complete dose.

*Home administration.* Once at home, caregivers sometimes stop giving the medication because the child repeatedly vomits it. Sometimes the child resists because the medication is bitter.

*Sometimes the children refuse to take CQ. It is bitter and they vomit and it is also often itchy. But many of us force them. [Chipata/Rukuzye]*

More often, caregivers give the drug only until there are signs of improvement in the child, thinking that no more is needed. Since CQ relieves symptoms quickly, it is not uncommon to find mothers stopping the medication after one day. Sometimes mothers want to have some medicine left over to use in a future illness.

*. . . sometimes just after administering two times you find the child recovers, starts playing. So you stop and keep the medicine, in case the child falls ill again. [Chipata/Rukuzye]*

**Q: Did you give the child all the medication?**

**A:** *No. She was recovering so there was no point in giving the rest. [Chipata/Rukuzye]*

One treatment pattern is particularly worrisome, both for the health of the child and for the development of drug resistance: that of giving small amounts of drugs several times for low-grade fever that persists over a period of weeks or months. In these situations the symptoms are relieved by Panadol and kept in check by periodic inputs of CQ, but the illness is never cured.

Figure 7 summarizes the factors that increase or decrease the child's chance of receiving a correct dose of CQ.

Figure 7. Factors that Facilitate or Impede Correct CQ Dosage

<i>Facilitating Factors</i>	<i>Impeding Factors</i>
<p>Health center has full course of drugs and gives them to caregiver to take home</p> <p>Provider gives clear spoken and written instructions on how to administer the drugs</p> <p>Caregiver understands symbols on packet</p> <p>Caregiver can read written instructions</p> <p>Provider breaks tablets into halves and quarters to facilitate administration of correct dosage at home</p> <p>Provider tells caregiver the importance of giving the complete course</p>	<p>Provider prescribes incorrect dose or regime</p> <p>Staff are untrained or give incorrect dose to caregiver</p> <p>Caregiver is given partial doses to take home and must return each day for subsequent doses</p> <p>Caregiver cannot afford prescribed drugs</p> <p>Provider gives unclear instructions</p> <p>Caregiver cannot understand symbols on package</p> <p>Staff are hurried or have poor attitudes; staff discourage questions from caregivers</p> <p>Provider fails to emphasize to caregiver the importance of giving the full course</p> <p>Caregiver recalls instructions poorly</p> <p>Caregiver stops administering drug once child shows recovery signs</p> <p>Caregiver wants to save medication for future illness</p> <p>Child vomits the medication and caregiver does not have replacement dose</p>

**Use of Fansidar™**

Current policy in Zambia calls for Fansidar™ as the drug of second resort to be given if CQ has fails to cure the episode. Caregivers in the sample at health centers confirm that virtually all children presenting with fever at a health center are given CQ; Fansidar™ is rarely dispensed. One-quarter of caregivers observed at health centers said they were on repeat visits. Some said it was their third or fourth visit for malaria-like symptoms that had not responded to CQ; yet none was observed to receive Fansidar™.

Providers asked some caregivers how they administered CQ and then told the caregivers to go home and try again. Although a significant minority of illness narratives strongly suggested CQ failure, only 2 caregivers out of 154 in the community-based narratives sample reported that their children had been given Fansidar™. It is quite possible that more children did receive Fansidar™ but that the caregiver did not know what drug was being given. However, the fact that Fansidar™ was not given in any of the 89 health center cases observed by researchers indicates very low level of usage of this drug.

**Q: How is your child now?**

A: *She has been okay until the day before yesterday when the body got hot again. She told me she a headache and stomachache. She had also lost appetite again. I decided to take her back to the HC. I was given Panadol and chloroquine to be administered as before. [Chipata/Kakumbi]*

*At times, a child is ill and they give you Panadol or CQ. Then child does not respond to the drugs and you go back they still give you the same. [Lufwanyama/Shimukunami]*

*I have given the CQ twice now but there has not been any improvement in the condition of the child. I have decided that I will go back to the Health Center if the fever persists or keeps rising. I will go at 14:00 hours to complain about the medication they have given her. I feel that the CQ is not working for her and that I should be given some other medicine. I am wondering whether it is malaria or if she has or something else. [Kitwe/Ipusukilo]*

Mother complained of no improvement in child's condition despite taking CQ syrup course two times in three weeks. The CO examined the child then asked mother how she has been administering CQ. The mother said that she had been giving according to clinic instruction: 10 ml first dose, 5 ml after 6 hours, 5 ml next day (day 2) and 5 ml the last day (day 3). The CO was satisfied with the answer given and told the mother that he was going to give the child another CQ course after which if there was no recovery he would then recommend change of drug to either Fansidar™ or quinine. [Notes from observation of a caregiver's consultation with a provider in Ndeke]

Fansidar™ was available in most health centers, so supply did not appear to be the primary obstacle to use. Apparently it is not yet customary to treat with this medication and for unknown reasons providers are reluctant to use it.

## Treatment for Convulsions

The treatment patterns described thus far are principally applicable to uncomplicated malaria. If the child develops convulsions, the patterns of treatment change. This study had three sources of information on perceptions of and treatment of convulsions: the illness narratives, interviews at health centers, and the focus group discussions on illness terminology and taxonomy.

Researchers encountered only 12 cases of malaria-related convulsions in the narratives, as the study was not conducted during the peak malaria season. A number of other cases were found in the health centers. In terminology/taxonomy focus groups, the causes of and treatment for convulsions were discussed.

In the terminology focus groups, all 18 communities described two types of convulsions: “big convulsions” and “small convulsions.” Big convulsions are said to come on suddenly without any body hotness and cause the person to foam at the mouth and urinate at the end of the seizure (these symptoms are characteristic of epileptic convulsions). “Small convulsions” are said to come when the fever gets very high, and many of the groups associated them with malaria.

Convulsions are almost always considered very serious and needing immediate attention. Caregivers are also aware that twitching is a precursor of convulsions, so that twitching itself is considered a danger sign and prompts treatment.

*. . . In the evening the fever was high again. I gave Panadol but it did not help and the temperature was still high. (The next day) the fever was high and the child started twitching and the body looked pale. I then rushed the child to the health center. [Lufwanyama/St. Joseph]*

*At first it was not serious but when she began twitching and became weak I knew it was serious. [Kitwe/Ipusukilo]*

*I think it was serious because she looked very weak and she was even twitching and the body continued to be very hot. [Kitwe/Twibukishe]*

Most caregivers link twitching and convulsions with malaria, but (especially among older caregivers) witchcraft is often suspected as a cause and traditional treatments are more likely to be sought. In five of the twelve cases involving convulsions, herbal remedies were used. In three cases, a traditional healer was consulted. However, in eight of the twelve cases, the child was seen at a health center. No child who had convulsed was seen solely by a traditional healer. The most common pattern is for both traditional and modern remedies to be given, either consecutively or concurrently.

**Q: *What do you do when a child starts to convulse?***

A: *Woman 1: We go to the clinic.* (Disagreement from the group)

*Man: No, we go to the traditional healers first. They give our children herbal medicines to stop the convulsions. If this fails, if the traditional healer fails to heal our children, we go to the clinic.* (General agreement)

*Woman 2: Yes, if the African doctor fails we go to the clinic, if the clinic fails we go to the African doctor.* [Lufwanyama/Mukumbo focus group]

In the narratives there were various examples of trying one option and then the other. On a few occasions when herbs were given first, they delayed or replaced treatment at a health center. Usually the delay was not long, but even short delays in such circumstances can have serious consequences. One mother first tried herbal medicines and rushed the child to the health center just hours later when it was clear the treatment was not working. Unfortunately, she arrived as the staff was closing for lunch, and the child had to wait another 2 hours before being given CQ. When this mother was asked the cause of the convulsions, she said she was not sure if it was malaria or witchcraft.

Sometimes the traditional and modern care are given concurrently. A 3-year-old child who was brought to the health center convulsing had fresh herbal mixtures on his head and body. CQ and diazepam injections were given immediately and the child was admitted. During a follow-up home interview, the parents said they had continued giving herbal medicines during the child's admission, but kept this treatment as discreet as possible to avoid being scolded by health center staff. The parents said they did not know whether the convulsions were caused by malaria or by witchcraft. The interviewers later saw the parents taking the child to the traditional healer.

In a nearly identical case, the grandmother first administered herbal drinks when the convulsions started and then continued to administer them in the hospital. The mother indicated that hospital staff told her that malaria causes convulsions and that mosquitoes cause malaria, but she did not think that was correct because it was the cold season and she did not see mosquitoes around.

In a very similar case where a grandmother had administered tattoos (superficial cuts in the skin into which herbal preparations are rubbed) to treat a convulsing child who was later admitted to the hospital, parents continued consulting the traditional healer afterwards, still convinced that witchcraft was involved. The father said, *"Had it not been for the tattoos, the child would not have come out of semi-consciousness at the clinic."*

In another case, a child started twitching one evening and was taken to the health center the next day. At the health center, the child was given half a tablet of CQ. No other medications were given to the mother to continue treatment at home, and no instructions were given to return. The mother thought (correctly) that this was inadequate treatment, and she administered *kankalamba* (herbal

treatment) at home. The child did not improve and the next day she returned to the health center where she was scolded for giving herbal medicines, and the child was given an injection. The father decided that the herbal treatment should be discontinued to give the injection a chance to work.

In a case where traditional medicine was not given, the mother immediately took the child to a nearby mobile clinic, even though the grandmother advised seeking help from a traditional healer.

In a few cases, the convulsing child was given only herbal medicine. *I only use herbal medicine for convulsions. When the child is twitching, herbal medicines work better.*

Unlike treatment for uncomplicated malaria, there appears to be some reservation about modern treatments for convulsions; in a number of the focus groups, the idea was expressed that a child with convulsions could die if it got an injection. Indeed, a child given an injection for convulsions may very well die—not because of the injection but because the condition is already serious. This association probably makes some caregivers avoid seeking care for convulsions in the formal health system.

## Role of Community and Other Providers

At present, community providers who are not based in a health center—community health workers, traditional healers, drug vendors, and pharmacists—play a minor role in the treatment of fever or suspected malaria. Pharmacists and drug vendors are a source of drugs, but are not consulted on the type of drugs to buy or how to administer them.

### **Community Health Workers (CHWs)**

CHWs are meant to provide basic health services to rural populations residing far from health centers. They undergo 6 weeks of training that covers a broad range of topics such as diarrhea, eye infections, cough, and malaria.

Of the 18 communities in the sample, 6 had a CHW in the vicinity. Most CHWs who were interviewed appeared to have basic knowledge of treatment for fevers, convulsions, and anemia. They diagnose malaria on the basis of symptoms, the key one being fever. For suspected malaria, they are instructed to give CQ and Panadol or aspirin. Four of the six knew that the dose depended on the age of the child and could cite the correct dosages. However their drug supply is inconsistent. Most say they go many months without drugs, and all four CHWs in Lufwanyama, interviewed individually, said they had not received drug supplies since about a year ago.

People in the community seek CHW services for febrile illness when drugs are available. Caregivers know that CQ and an antipyretic should be given for spiking fever, and CHWs can represent a convenient and free source of those drugs (a small fee for drugs is planned). CHWs who had drug supplies said that they treat an average of 10 people per day, mostly children. The community knows when the CHW has drugs.

From the narratives:

**Q: Did you seek medical aid from anywhere?**

A: No. I would have taken him [child] to the CHW but I understand the CHW has no drugs.

**Q: What drugs do you think the CHW would have given your child?**

A: Panadol, aspirin, and CQ. [Lufwanyama/St. Joseph]

**Q: Did you try to give medical attention using tablets?**

A: No. I had no money for medical fees and the CHW has no drugs. [Lufwanyama/St. Joseph]

We have two CHWs but right now they are irrelevant because they don't have any drugs. [Focus group in Lufwanyama/Shimukunami]

CHWs refer patients to the health center when they have no drugs, or when they have given drugs but fever persists or convulsions start.

### **Traditional Sources of Care**

*Use of Traditional Remedies.* Herbs are sometimes used as treatments for fever, convulsions, and anemia. The herbs are usually prepared by the mother or grandmother at home and are administered as a drink (water that has been boiled with herbs); via “steaming,” the inhaling of steam from water that has been boiled with herbs; or by “tattooing,” the incising of superficial cuts in the skin in which a herbal mixture is rubbed. Some focus groups and illness narratives mentioned “African quinine,” a root that is said to have quinine-like properties and that is boiled or soaked in water that the patient drinks. A herbal preparation of boiled avocado leaves is recommended for anemia by health centers and is apparently widely accepted by the local population—it was mentioned in most of the focus groups when asked how anemia is treated. Caregivers frequently report that herbal remedies cured illnesses.

*Use of Traditional Healers.* In the focus groups, people said that traditional healers are sometimes consulted when children get ill, but in the illness narratives, in which caregivers report what they actually did during a recent case of fever, very few said they had consulted a healer. This may be partly because they do not like to admit that they consulted a healer, but also may be due to the nature of the sample, which included many mild and quickly resolved febrile episodes and fewer serious ones. (The study was conducted during the dry season.) Some people say that they go to a traditional healer if the health center fails; others say they go to the health center if the traditional healer does not cure the child. Worried caregivers try multiple treatments and consult multiple providers when symptoms persist. Traditional healers are more likely to be consulted if twitching or convulsions develop, as these symptoms are seen to have supernatural causes.

**Q: Where do you go first?**

A: Most of us go to the clinic first. We know that when you go to the clinic recovery may be quick. If clinic fails, you go to traditional healers. [Chipata/Rukuzye]

**Q: What sort of health facilities do you have as a community?**

A: We have Shimukunami Health Centre, which is 12 kilometers away.

**Q: What proportion of the community goes there?**

A: Many go there. Mostly we try the clinic. If clinic fails that's when we try traditional healers. [Lufwanyama/Shimukunami]

**Q: What did you do in the morning?**

A: I consulted the traditional healer for herbs because he had convulsions in the early hours of the morning.

**Q: Why did you decide to consult the traditional healer instead of going to the health center?**

A: I thought that was the right thing to do, because he was given herbs for sprinkling and bathing.

**Q: How was the child after you used the herbs?**

A: The herbs did not work. The body temperature was still high. So then I took him to the health center. [Lufwanyama/Mukumbo narrative]

## Overall Care-seeking Patterns

The research provided the typical sequence of care-seeking in the study areas. Each illness narrative presents a chronological account of where care was sought for a case of fever occurring in the 3 weeks prior to the interview. Sources of care were categorized as follows:

- **Gave home treatment.** This category includes any treatment given at home, whether traditional or modern. Here the locus of decision making is with the caregiver, sometimes in consultation with another family member. If, for example, the caregiver decided to buy CQ or an antipyretic and give it at home, this was included in the home treatment category. Also included in this category are traditional treatments, such as herbal remedies, and new learned behaviors, such as tepid sponging.
- **Consulted health center.**
- **Consulted community health worker.**
- **Consulted traditional healer.**

Table 5 shows the number and percentage of cases involving, at any point in the illness, a particular resort to care. These percentages add up to more than 100 because cases often involve care from multiple sources.

Another analysis looked at the *sequence* in which treatment was sought from each of these sources. Each narrative was characterized by a particular sequence. The most common sequences of care-seeking are listed in Table 6.

**Table 5. Resorts to Care  
Number and percentage of cases  
involving a given resort to care (n=154)**

Resort	n	%
Gave home treatment	124	80%
Consulted health facility at least once	109	71%
Consulted health facility twice or more	16	10%
Consulted CHW	2	1%
Consulted traditional healer	5	2%

**Table 6. Sequence of Care-seeking  
Number and percentage of cases following  
a given sequence of care-seeking**

Sequence	n	%
Home → Health center	60	39%
Home {end}	41	27%
Health center {end}	25	16%
Home → Health center → Health center*	14	9%
Other sequences	14	9%
<b>Total</b>	<b>154</b>	<b>100%</b>

\* This sequence includes those who visited the health center two or more times for the same illness.

In interpreting these data, one should bear in mind the nature of the sample: children under 5 years who had had fever in the 3 weeks prior to the interview. Many were mild cases that appeared to be resolved fairly readily, and many of these cases were undoubtedly not malaria. Few cases—only 12 (8%)—involved convulsions. The data would be quite different if the sample had been drawn during the rainy season and included more cases of convulsions, if the sample was drawn only from health centers, or if this had been a study of children who had died from illness with fever. For the latter example, one would expect continued care-

seeking and greater use of traditional healers, as caregivers tried as many options as they could to heal the child. The results of this study show how different samples produce different results: the percentage of cases taken to the health center more than once was 10% in the illness narratives sample drawn from the community at large, and 24% in the sample drawn from the health center. These data do not contradict each other, but rather show two aspects of the same picture.

These data document the patterns described in earlier sections and point to several basic conclusions about caregivers' response to fever in young children. One conclusion is that a tremendous amount of treatment takes place in the home and some cases are treated solely at home. Usually care is sought at home first, followed by a visit to the health center. Once care is sought outside the home, the health center clearly plays the dominant role. CHWs and traditional healers are infrequently consulted for simple fevers.



## Communicating with the Community

**E**ven though the purpose of the focus groups was not to teach, people requested information and said that they were waiting to be taught. Although sessions lasted 1 or 2 hours, participants were often reluctant to disperse. In one session, the group even joked about keeping the researcher there until he had taught them.

**Q: What is your preferred way of getting health information?**

*Woman 1: We want people like you to be coming to teach us.*

*Woman 2: In fact you won't leave until you teach us.*

*Man: You won't get our information when we are not getting any from you. It has to be an exchange.*

*(Laughter)* [Chipata/Rukuzye]

There is a fair amount of evidence that once mothers are given information, they act on it. The majority reported learning in the under-five sessions at the health center how to give tepid sponging and bathing to reduce fever, and this is now a common first response to fever. It is clear that giving ORS for infant diarrhea has been well learned and accepted, and mothers correctly report how to administer it. Health centers advise giving a child a drink from boiled avocado leaves as a treatment for anemia; this practice also seems to have been adopted. Messages to resort to modern care are being heeded.

*[In the past] there was much belief in traditional herbs but now we have been told to take children to the health center as soon as they fall sick.* [Lufwanyama/Shimukunami]

Significantly, it appears that when the importance of completing the full course of CQ is communicated to caregivers, many are likely to follow the advice if they have the full dose available and feel that they will be able to get more medication when they need it in the future. In the narratives, a number of caregivers who had given a full course said that is what they had been told to do in the health center. The fact that these caregivers tended to cluster in certain health center catchment areas suggests that only some health centers are giving the message, and that caregivers listen to those that do.

Yet the health system underestimates caregivers' capacity to understand and implement new treatment behaviors. Providers ask caregivers very little when examining children, and they tell caregivers little or nothing about a child's condition or treatment. Providers give caregivers virtually no educational information, and staff do not explain well the dosages and medication regimes. Many providers discourage questions at any point in the patient-provider interaction. Many providers reported that caregivers do not give information about prior treatments, but few providers asked for it. Providers also report that caregivers cannot remember dosages; clearly some do not, but the conditions under which doses are communicated do not give them a good chance to do so.

Mothers are autonomous decision makers on child health issues and therefore should constitute the primary target audience for health communication. Many consult the child's grandmother about herbal remedies, but seem to feel free to reject that information when they wish. A small minority report that they confer with their husbands, but no one reported a husband overriding her decision on treating a child's illness.

Currently, fathers play a minimal role in caring for sick children. Almost all of the caregivers bringing children to the health center were women. A father might bring in his child if the mother cannot—for example, if she is ill or cannot leave other children. Some staff discourage men from taking a role. One father who had bicycled almost 30 kilometers with an extremely sick child was told that the child needed to be admitted, but that he should take the child home and send the child back to the health center with the mother so that she could look after the child on the ward. Men could be a secondary audience for health communication. IEC could probably make it more acceptable for fathers to take sick children to the health center. IEC could also encourage them to buy medications and to ensure that a full course of antimalarials is given.

There are a number of options inside and outside the health system for communicating with the community, each with its strengths and weaknesses.

Media reach is limited but has some potential:

#### ■ Posters

Printed materials have limited impact since most caregivers are at best marginally literate; however, where a poster contained a strong visual message, mothers were able to understand it. Many recalled pictures of a well-nourished and a malnourished child and the foods given to each, as well as a family planning poster that showed a happy family with well-spaced children.

#### ■ Television and Radio

Television is seldom available in the rural areas and even radio has very limited reach for mothers. The *Zambia Demographic and Health Survey* indicates that 2% of rural households have a television, and 31% have a radio.<sup>5</sup> Often the radios are not functional because batteries have run down and are expensive to replace. Even when radios are working, women's exposure to them is restricted. Their many duties inside and outside the home give them little opportunity to listen. Further, radios tend to belong to and be controlled by the men, although sometimes information is passed to the women.

##### **Q: Who controls radio in the home?**

*Woman 1: Men control use of radio.*

*Woman 2: Men are the ones who are always listening to radio. They even know specific times for specific programs. As a wife, you may be going to draw water or collect firewood but they would be glued to the radio. They just tell you when you come back.*

##### **Q: What would they tell you?**

*A: As long as the information they have heard is interesting, they would tell you. We can say that ideally a radio in the home is jointly owned. But mostly female-headed households don't have radios. Mainly it is men who buy radios.*

##### **Q: Why?**

*A: For women it could be lack of interest or simply lack of money. Women may have other pressing needs like food. [Lufwanyama/Shimukunami]*

5. *Op. cit.*, p. 9. *Zambia Demographic and Health Survey*, 1996.

An elderly woman: *Most of our husbands deny us access to listening to the program. If he finds you opened the radio he will kick you and swear at you. He will say, 'Who told you to open the radio; is it your father's?' (Loud laughter and cheering in agreement from the rest of the women.) In fact most of them just carry the radios to the drinking sprees.*

*When we want to open the radio the man will say 'Don't open it because batteries will finish' meanwhile he will open it on programs that he likes himself. One man said: 'We don't allow these women to open the radios because they don't know how to operate them. They will break it.' 'But you don't teach us,' said a woman. [Chipata/Kakumbi]*

In spite of these limitations, radios can have an impact; many recall advertisements for Dawaquine and think of it as especially good medicine. Certain key points, if made into well-crafted messages and broadcast often enough, could become broadly disseminated and accepted. If men are the main listeners, then possibly a more active role for them can be created around the fact that they sometimes purchase the medication, and messages can emphasize buying a full 3-day dose and making sure the child gets it all.

There are several potential ways to communicate with caregivers in person:

#### ■ **Community health workers**

CHWs are underused. Although they have some training in basic health areas, they have few supplies and no health education materials. Having supplies and education materials is likely to boost their morale, their image, and their effectiveness.

#### ■ **Under-five clinics**

Under-five health talks are supposed to be given regularly in the health center or via mobile clinics in remote areas. However, talks at many health centers are given irregularly or rushed through so that staff can get on with weighing the children. Mothers said they attended under-five clinics fairly frequently, but the clinics may be a doubtful channel of communication to some mothers. Some mothers said they attended mainly because if they did not, they would be badly received at the health center next time they brought in a sick child.

Assessment of the quality of advice given at under-five clinics varies:

- *If you follow the advice, your child will grow well.*
- *Sometimes nurses teach us the same things over and over.*
- *I don't get much benefit because they just tell us to be taking our children for under-five, and as for feeding, we can't afford the foods they talk about.*

Nonetheless, most mothers mention under-five clinics as a source of advice on child health, and most can recite specific things they have learned at them: tepid sponging, feeding, hygiene, and ORS administration.

#### ■ **Neighborhood health committees**

NHC members are supposed to conduct health education from door to door and deal principally with hygiene, water, and sanitation. Some are just getting started. NHC members expressed the desire for technical information that they could share with the community; indeed, they seemed anxious to have a concrete mission. Community members liked the fact that NHCs are local and convenient.

#### ■ **Church groups and social organizations**

Examples of these groups include Catholic groups such as Mikuta, Bafisokoso, and Nazareth women's group. Such groups are more common in Kitwe and Lufwanyama than Chipata, and

only a minority of women belongs to some kind of group. Most such groups discuss child and health care issues, and these groups appear to have a strong impact on the women who do belong.

The options for involving and communicating with communities in Zambia are sure to increase as new policies take the country in new directions. Reform within the health sector is particularly dramatic, as exemplified by the decentralization of decision making, the promotion of community participation, and the formation of local NGOs and new partnerships. Under discussion is the creation of a new cadre of health providers—community health practitioners—to set up rural health posts that will make basic care more accessible to rural communities.

Given the very limited opportunity for mass communication in rural Zambia, IEC efforts will have to focus principally on interpersonal communication and on community mobilization strategies, with strategic support from other channels as appropriate.

Whatever medium is used, malaria messages should focus on the weakest areas in the care-seeking process: administering the correct dose and medication, completing the course of medication, looking for signs of failure to respond, and seeking immediate treatment at the health center if a child begins to twitch or convulse.

## Overall Recommendations

**T**he findings of this study have many implications for the roles of IEC and IMCI in improving case management of febrile illness in young children. To link these implications to the findings, specific programmatic suggestions are delineated within the summary of findings at the beginning of this report.

The findings of this study point to one overall strategy for improving treatment of febrile illness or probable malaria among young children: the development of a system of community-based care for uncomplicated malaria.

Current policies in Zambia call for presumptive treatment of high fever as malaria and for CQ to be used as the first-line drug. Presently, children seen at health centers for uncomplicated malaria are not necessarily getting better treatment than children treated at home. A tremendous amount of treatment is already taking place in the community, and there are a number of positive elements in place that are required for adequate home care: mothers know the signs of malaria and quickly respond by giving antipyretics and CQ.

The basic elements lacking from the treatment picture are ready access to a complete dose and the actual administration of the complete dose. These elements can largely be provided in the community if the potential of community providers and networks (i.e., community health workers, neighborhood health committee members, traditional healers, and drug vendors) is exploited. Simple training would emphasize what the correct dose is, the importance of giving the full course, recognition of the signs of treatment failure, and the need to refer to the health center immediately.

Moving basic care to community providers has a number of advantages. It would allow more timely treatment by eliminating travel time to and waiting time at the health center. It would also eliminate the discomfort and possible aggravation of illness that a sick child must endure on the trip to a health center. Higher rates of compliance might be achieved because community providers have more time to explain dosages to caregivers and might be able to monitor dosages. Congestion at health centers would be relieved, and staff would be freed to attend to other things that cannot be treated in the home.



# Kenya Study on Care-seeking for Fever and Convulsions

## Summary of Major Findings

**Q**ualitative research was carried out in Bungoma District, Western Province, Kenya to understand care-seeking for children under 5 years who have fever and/or convulsions—key symptoms of malaria. The main purpose of the research was to create a basis for planning interventions to improve case management of febrile illness in the community and the training of health providers. The study took place from February through April 1998.

The research took place in the catchment areas of eight health facilities in Bungoma District. The main methodology used was the illness narrative interview, in which a caregiver is asked to provide a detailed chronological account of what treatments she sought and why for any case of childhood febrile illness that occurred in the 2 weeks before the interview. A total of 97 illness narrative interviews were conducted. Other methods included interviews with and observations of caregivers and providers at health facilities; focus groups with community members to ascertain terminology for and concepts of febrile illness; interviews with others who might play a role in care-seeking, such as pharmacy staff and other vendors, traditional healers, and community health workers; and drug pile sorts. Treatment patterns were very similar in all eight sites in the district. The main findings are as follows:

### **A tremendous amount of care takes place at home.**

Some 90% of cases are first treated at home, and about 50% are treated only at home. Caregivers rely almost exclusively on modern resorts to care; traditional healers and traditional remedies are not commonly used. Pharmaceuticals are used extensively, and children are usually given two or three drugs at home when fever and other symptoms appear. Caregivers either “know” what drugs to give, or they consult a pharmacy employee. A typical combination of drugs given is an antipyretic, an antimalarial, and an antibiotic. Some children are given additional drugs such as cough medicines, Flagyl, and Piriton. Most drugs are administered incorrectly.

### **Pharmacies are to some extent replacing health centers.**

Some diagnose and treat patients, and some (illegally) administer injections. Very few require prescriptions for any drugs, even for restricted drugs such as antibiotics or quinine. Pharmacies are usually more conveniently located than health facilities, and there is no wait time or consultation fee. Therefore, they present an attractive resort to care for caregivers. Although caregivers seek advice at pharmacies, often there is no trained person on the premises. This is especially true in rural areas, as the licensed person is likely to reside in the town center.

**About half of children suffering from fever are taken to some kind of health facility, usually between 1 and 3 days after onset of fever and after home treatment fails.**

Caregivers usually have a number of choices if they wish to seek care from a health facility. There is usually fairly good access to a government or religious-based facility—a dispensary, health facility, or hospital. There are also a large number of small private commercial clinics of varying quality. Private clinics play a large role; about half the cases taken to a facility are taken to a private clinic. Private clinics are usually more conveniently located than larger health facilities and have short waiting times. Staff may know the family and be friendlier than staff at larger facilities. They may also arrange for more liberal payment plans than other facilities. Private clinics are not always staffed by qualified providers, however, and there appears to be little regulation of these facilities.

Because home treatment as a first response is the norm, it is likely that many sick children are not soon enough treated by a qualified health provider. Further, medication already given at home may mask the severity of the child's condition.

**Given that many treatments may be tried at home, it is especially important for health providers to have a good understanding of the illness history and treatment history.**

However, providers typically ask few questions that would give them a good understanding of this history.

**Usually several drugs are recommended by health providers.**

In many facilities, dosages are not adequately explained to caregivers. Upon exiting from health facilities, about 25% of caregivers could not cite the proper administration of the antimalarial they were given.

**When a child's symptoms persist, caregivers practice "nomadic" care-seeking, going from pharmacy to provider to provider.**

They expect therapies to work very quickly and may seek out new providers every day or two until the child shows signs of recovery. Multiple drugs are usually given with each new provider. There is very little cohesive case management for febrile illness.

**It appears that caregivers do not recognize twitching, a precursor to convulsions, as serious.**

Even convulsions are not always treated as serious, unless they are sudden and severe and the child loses consciousness. With the exception of these latter cases, illness involving twitching and convulsions is likely to be treated at home with pharmaceuticals, as are other febrile episodes. Convulsions are understood to be associated with fever or malaria. There is little association of convulsions with spirits, as there is in other parts of Africa.

**In choosing a treatment, caregivers primarily consider the short-term cost, but they also take into account their access to the treatment, its convenience, and their confidence that it will work.**

Their confidence increases when care is taken by the provider examining the child, when their child is given treatments that have worked before, and when they are given drugs or injections.

**Kenya's new drug policy calls for Fansidar™ (sulphadoxine-pyrimethamine, or SP) to replace CQ as the first-line drug for suspected malaria.**

Fansidar™ is becoming known and is generally accepted among health providers and caregivers, and there should be no significant barriers to acceptance of the new policy among caregivers.

The treatment problems described in this report are complex and not easily resolved. Program implications for improved case management are included in this report, but significant improvement will not be accomplished by IEC alone. An overall strategy will have to address such factors as quality of care (especially in private clinics) and enforcement of prescription regulations.

In any event, if clear messages are to be given to caregivers regarding treatment for febrile illness, the Ministry of Health will have to come to an agreement on what optimal treatment is from the standpoint of caregiver behavior. There is a need to define the specific behaviors that a caregiver should follow: What, exactly, is the caregiver being asked to do? For example, what kind of home treatment is advised? How long should a caregiver monitor a child's condition at home before going to a health facility? What specific symptoms should a caregiver look for that indicate the condition warrants a trip to a health facility?

Although every child with more than a low-grade passing fever ideally should be assessed and treated at a health facility, this is not feasible. Recommendations will have to take into account the current reality of care-seeking, and it is hoped that this study will provide the foundation for that discussion and for sound programming decisions.



## Introduction

### Purpose

**T**his is a report of formative research that was undertaken in Bungoma District, Western Province, Kenya to provide a detailed understanding of care-seeking for children under 5 years who have fever and/or convulsions—two key symptoms of malaria. The main purpose of the research was to create a basis for planning interventions to improve case management of febrile illness and the training of health providers in the community. Therefore, both findings and implications for policy and programs are included in this report.

Through the Integrated Management of Childhood Illness (IMCI) approach that is being taught to health providers, the treatment of febrile illness, including malaria, is expected to improve in health facilities. Yet much treatment takes place at home, and little is known about care-seeking patterns and what prompts caregivers to select various treatment and provider options. Research questions for this study focus on the kinds of treatment given, why particular treatment decisions are made, and what factors obstruct as well as facilitate optimal treatment for febrile illness in children under 5 years. Further, because the new national drug policy now advocates Fansidar™ instead of CQ as the first-line treatment for uncomplicated malaria, the research looks at the perceptions of both drugs to identify potential barriers to acceptance of Fansidar™ by caregivers.

This research was carried out under the auspices of the BASICS project in Washington, D.C. with funding by USAID. BASICS asked Dr. Carol Baume of the Academy for Educational Development to plan and implement the research with the collaboration of members of the Bungoma District Health Management Team (DHMT). Data collection took place in February and March 1998. A preliminary summary report was written by the team in April 1998, and results were presented to the DHMT in Bungoma and to a meeting of USAID and other interested parties in Nairobi. The present report is the final, expanded version of the study.

### Malaria in Kenya

Malaria is one of the most serious public health problems in Kenya. According to the *District Health Annual Report* of 1995, malaria accounted for over half of the outpatient diagnoses and was a leading cause of mortality in Bungoma District.<sup>6</sup> Most of these deaths occurred in children under 5 years of age—those who have not yet developed sufficient immunity to the disease.

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6. Ministry of Health, Bungoma District Health Management Team. 1995. *Bungoma District: District Health Annual Report 1995*. Bungoma, Kenya: 19–20.

Almost all of these deaths could have been avoided with prompt, appropriate action, as simple and inexpensive treatments for malaria exist. Until recently, Kenya's drug policy was that the first-line drug for uncomplicated malaria was CQ, taken in tablet or syrup form over 3 days. Because malaria parasites resistant to CQ have become widespread, the policy has been changed to a single dose of Fansidar™ as the first-line drug for uncomplicated malaria. These treatments can be managed at home, provided the caregiver knows the correct dosage. In cases of treatment failure, health providers can recommend back-up treatments such as quinine that are effective against most resistant cases.

## Design and Methodology

### *Bungoma District and Research Sites*

Bungoma District is one of seven districts in Western Province, Kenya. It is approximately 2,100 square kilometers in size, and its projected population for 1998 was 1,045,000.<sup>7</sup> About 80% of the population is rural, with the rest residing in towns such as Bungoma Town and Webuye. The Luhya people are the predominant ethnic group, although there are also small populations of Teso, Luo, and Saboat. Kibukusu is the most commonly spoken dialect in the district. A description of each community included in the research is found in Table 8.

The research sites were the catchment areas of eight health facilities in the district. The sites were selected to include both governmental (GOK) and non-governmental (non-GOK) facilities at three levels: hospital, health center, and dispensary. The non-governmental institutions are registered facilities affiliated with religious denominations. The study took place in the catchment areas of the health facilities listed in Table 7.

### *Approach*

The research protocol takes a symptom-based rather than illness-based approach, concentrating on treatment of fever and convulsions rather than on malaria. There are two reasons for this. First, the results are meant to inform Kenya's new health worker training based on IMCI. IMCI is structured around danger signs, and high fever and convulsions are among them. Second, when an illness term such as "malaria" is used, even in translation, one cannot be sure that all parties understand it to mean the same thing. Local persons may use the term to cover a wider range of illnesses than clinical malaria (thereby calling something malaria when it is not), or they may interpret some symptoms of malaria, especially convulsions, as something else (thereby *not* calling something malaria when it is). Discussing symptoms rather than naming the disease makes it more likely that researchers and respondents are talking about the same phenomenon.

Table 7. Study Sites

	<i>GOK</i>	<i>non-GOK</i>
<b>Hospital</b>	Bungoma District Hospital	Misikhu Mission Hospital
<b>Health center</b>	Naitiri Chwele	Khasoko
<b>Dispensary</b>	Milo Korosiandeti	Machwele

7. Ibid.

Table 8. Description of Kenya Study Sites

Health Facility	Community (Distance from Health Facility)	Community Description
Bungoma District Hospital (GOK)	Namachanja Village (1 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed, mostly Bukusu/Kibukusu</li> <li>■ <b>Characteristics:</b> High density urban area</li> <li>■ <b>Livelihood:</b> Some mothers have small businesses and a few are employed in government or private sector</li> </ul>
Misikhu Hospital (Mission Hospital)	Misikhu Dam Village (1 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Bukusu and Kitajoni/Tajoni and Kibukusu</li> <li>■ <b>Characteristics:</b> Rural</li> <li>■ <b>Livelihood:</b> Farming; low-income and wage earners</li> </ul>
Milo Dispensary (GOK)	Sichinikhi Village (1 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Bukusu/Kibukusu</li> <li>■ <b>Characteristics:</b> Rural</li> <li>■ <b>Livelihood:</b> Farming—mostly sugarcane</li> </ul>
Chwele Health Center (GOK)	Lutaso Village (2 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Luhya/Kibukusu</li> <li>■ <b>Characteristics:</b> Rural</li> <li>■ <b>Livelihood:</b> Farming—maize, beans, and sugarcane</li> </ul>
Naitiri Health Center (GOK)	Malik Village (8 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixed, mostly Luhya who were displaced by tribal clashes 1992 (squatters)</li> <li>■ <b>Characteristics:</b> Semi-urban area</li> <li>■ <b>Livelihood:</b> Most mothers are housewives; a few have small businesses</li> </ul>
Korosiandeti Health Center (GOK)	Korosiandeti Village (2 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Mixture of 3 ethnic groups: Teso, Bukusu, and Sabots/Kibukusu, Kiteso, and Kisaboti</li> <li>■ <b>Characteristics:</b> Highland area (on slopes of Mt. Elgon)</li> <li>■ <b>Livelihood:</b> Farming</li> </ul>
Khasoko Health Center (non-GOK)	Khayo Village (3 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Luhya/Batura and Kibukusu</li> <li>■ <b>Characteristics:</b> Rural, Mumias Sugar Belt</li> <li>■ <b>Livelihood:</b> Farming—maize, sugarcane, and wimbi</li> </ul>
Machwele Dispensary (non-GOK)	Kimwanga Village (2 km)	<ul style="list-style-type: none"> <li>■ <b>Ethnic group/language:</b> Bukusu/Kibukusu</li> <li>■ <b>Characteristics:</b> Lowland rural</li> <li>■ <b>Livelihood:</b> Farming—tobacco, pilipili, and sugarcane</li> </ul>

## Methodology

The research protocol consisted of six modules that are summarized below.<sup>8</sup> The study was principally qualitative in nature, although key standard information (such as types of treatment given) was quantified.<sup>9</sup>

### ■ Community introduction discussion

An initial community discussion was held at each site to introduce the team to the community and vice versa, and to gather basic information about health resources and information-education-communication (IEC).

### ■ Focus groups with caregivers to elicit terminology and construct illness taxonomies

A focus group was conducted in each of the eight research sites to find out terminology for and concepts of fever, convulsions, and malaria. Questions on recognition of and treatment for anemia also were asked.

### ■ Illness narratives

Illness narratives are open interviews that elicit detailed chronological descriptions of illness episodes and their treatment. Conclusions about treatment are based primarily on the narratives, since the narrative describes an actual illness and actual treatment behavior rather than a hypothetical case. The researcher can probe to gain an understanding of why particular treatments were chosen and of the perceived efficacy of those treatments. The sample—children under 5 years who had had fever and/or convulsions in the 2 weeks prior to the interview—was drawn from the community at large, not the health facilities. A community-based sample avoids the bias of a facility-based sample in estimating frequency of types of treatment, and permits the examination of treatment patterns for febrile illnesses with a range of accompanying symptoms and severity.

A total of 97 illness narratives were gathered. The demographic characteristics of the sample are presented in Table 9.

Table 9. Characteristics of Narratives Sample (*n*=97)

Mother is caregiver (interviewee)	96%
Caregiver's median age	26 years
Caregiver's level of education	
None	11%
Primary	60%
Secondary	27%
Post-secondary	2%
Child's median age	1 year 8 months
Gender of child	
Female	55%
Male	45%

8. The full research protocol is published in Baume, C. 2002. *A Guide to Research on Care-seeking for Childhood Malaria*. Arlington, Va.: BASICS II, for USAID.

9. Some basic information from the illness narratives and from the interviews and observations at health facilities was quantified. As with most qualitative studies where the primary aim is to gather in-depth information, the samples are small: 97 illness narratives and 59 cases at health facilities. Some basic frequencies are presented in this report, primarily to indicate orders of magnitude and support assertions about care-seeking patterns.

■ **Health facility interviews and observations**

The research included a health facility module to understand the caregiver’s experience in the health facility and how it bears upon the overall care that a child receives. It should be emphasized that the primary purpose was *not* to assess the quality of health services or the capability of health providers, but rather to understand the clinic experience from the caregiver’s perspective and to identify the factors that encourage or discourage the caregiver to proceed with optimal treatment. Researchers observed 59 caregivers from eight sites through the course of the caregivers’ visits to the health facility.

The components of the health facility module are as follows:

- **Preconsultation interview with caregiver:** to identify a brief history of the illness, treatments already tried, and/or providers consulted
- **Observation of the caregiver’s consultation with the provider:** to note the provider’s questions about the history of the illness and treatment, and how well the provider communicates with the caregiver about the diagnosis
- **Observation of the treatment room:** to note medication regimes prescribed, whether medication is identified to the caregiver, and the quality of communication about administering medications
- **Exit interview with the caregiver:** to assess the caregiver’s ability to understand and recall the recommendations, the caregiver’s confidence in diagnosis and treatment advice, and caregiver’s satisfaction with the visit
- **Follow-up home interviews:** to understand the factors affecting compliance, a subset of 26 caregivers was interviewed at home between 2 and 4 days after visiting the health facility
- **Interview with the provider:** to obtain provider’s perspective on caregivers’ treatment practices

Table 10 presents the basic demographic characteristics of the health facility sample.

■ **Interviews with other providers**

The research also included interviews with other providers who potentially had a role in the treatment of childhood febrile illness:

- staff from private (commercial) clinics
- pharmacists and other drug vendors
- community health workers (CHWs)
- traditional healers

Child’s median age	8 months
Gender of child	
Female	51%
Male	49%
First visit for this illness	61%
Return visit for this illness	39%

- Focus groups to determine knowledge and perceptions of antimalarial drugs**  
 In preparation for a shift to Fansidar™ as a first-line malaria treatment, small focus groups involving pile sorts of drug samples were conducted. The main purpose was to identify the potential barriers to acceptance of Fansidar™ by determining whether caregivers differentiate between antimalarials and antipyretics (drugs to reduce fever), and what their perceptions of CQ and Fansidar™ are.

Table 11 summarizes the research sample by module.

Community group interviews	8*
Terminology and taxonomy focus groups	8*
Illness narrative interviews with caregivers	97
Health facility interviews and observations—caregivers	59
Visits to private (commercial) clinics and staff interviews	9
Community health worker focus groups (CHWs not found in all sites)	2**
Pharmacy/vendor interviews	15
Traditional healer interviews	3
Drug comparison focus groups/pile sorts	8**

\* 10-20 participants in each group

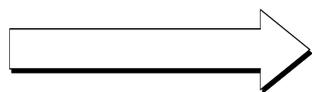
\*\* 3-6 participants in each group

The team developed a model that defined the elements necessary for proper treatment of febrile illness. Some elements of the model were difficult to define because the government was initiating a new drug policy of administering SP—rather than the previous CQ—as the new front-line drug for uncomplicated malaria. It was therefore unclear under what circumstances CQ was to be used, if at all. Further, there was no consensus among health officials as to whether all children with fever should be taken to a health facility, or whether a caregiver should give an antipyretic and/or antimalarial at home and then monitor to see if a visit to a health facility was warranted. Nonetheless, the model helped to ensure that all important topic areas would be covered by the research. The model was also used in the analysis phase as a diagnostic tool to indicate which community treatment elements were weak and might be targeted for intervention. Figure 8 depicts the model.

Figure 8: Kenya—Model of Optimal Treatment of Malaria

<i>Step 1 RECOGNITION HOME CARE OF SYMPTOMS</i>		<i>Step 2 APPROPRIATE HOME CARE AND MONITORING</i>	<i>Step 3 TREATMENT AT HEALTH FACILITY (HF) [Quality of Care]</i>			
Caregiver recognizes early signs	Caregiver recognizes illness symptoms	Caregiver gives appropriate home care and decides to go to the health facility when symptoms warrant	[HF is accessible]	Staff takes adequate history, gives adequate exam and correct diagnosis	Staff prescribes correct treatment	Staff dispenses and explains correct treatment and follow-up; refers when necessary
Crying/irritability	Fever	Do tepid sponging	HF open	Ask history of fever	Correct antimalarial prescribed (CQ or SP)	Correct drug dispensed
Appetite loss	Chills/sweating	[Give correct dose of CQ or SP*]	Distance not excessive	Ask prior treatments, especially CQ	Correct dose prescribed	Full, correct dose dispensed
Less active	Vomiting	Watch for signals to go to HF right away: – fever persists	Permission not needed	Take temperature	Feeding advice given	Correct regimen clearly communicated
Thirst	Symptoms perceived as abnormal	– stupor/lethargy – twitching/convulsions	Cost affordable	Laboratory work, if available	Return visit advised if no improvement	Correct regimen understood by mother
				Diagnose malaria		
				Communicate diagnosis to caregiver		

\* There was no consensus whether caregivers should attempt to treat at home or whether all cases should be handled entirely by a professional provider.



<i>Step 4 COMPLIANCE AND MONITORING FOR TREATMENT FAILURE</i>		<i>Step 5 RETURN VISIT TO HF FOR TREATMENT FAILURE</i>	
Caregiver gives correct treatment and/or goes to referral, or both	Caregiver recognizes treatment failure and decides to go to health facility	[HF is accessible]	Staff takes history, examines and diagnoses; prescribes, dispenses, explains correct treatment; refers when necessary
Gives correct dose	Watches for signals to return immediately to HF: – fever persists	HF open	SP given (or quinine, if necessary)
Follows feeding recommendations	– stupor/lethargy – twitching/convulsions	Distance not excessive	
		Permission not needed	
		Cost affordable	



## Terminology and Illness Concepts

The study gained knowledge about illness terminology and classifications of illness from two sources: focus groups designed for the purpose and the illness narratives of caregivers. Focus groups were conducted in all eight communities. Research team members were trained to note verbatim the terms that caregivers actually used, rather than translations.

Malaria is endemic in Bungoma and is always one of the first things caregivers mention when asked what illnesses cause *hot body* in young children. The English word *malaria* is widely used, although all communities also had local terms that appear to be used more or less interchangeably with the English term: *kumurengo*, *omurengo*, *kumuyaka*. *Kumurengo* is the most common local term.

Local concepts of malaria overlap in many ways with clinical definitions. When asked what symptoms are associated with malaria, respondents always included fever, vomiting, and diarrhea and often included coughing. Mosquitoes were named as a cause in all eight groups, but often other causes were mentioned as well: cold weather or changes in weather, and cold or unclean food and water.

However, in several important ways, local use of the term *malaria* differs from the medical definition. On the one hand, there are conditions that are locally called malaria that are not malaria. Local use of *malaria* and *kumurengo* encompasses a wide range of febrile illness, and can be used almost synonymously with *fever* and with *homa*, which itself can mean either fever or flu. Often other symptoms such as fast breathing or eye problems are attributed to malaria. In the narratives, caregivers were asked what they thought the child's illness was, and almost three-quarters said "malaria." In most cases the symptoms did correspond to clinical malaria, while in others they did not.

**Q: What did you notice was wrong with your child?**

A: Vomiting, loss of appetite, hot body, and he was complaining of a stomachache.

**Q: What illness did you think this was?**

A: It was malaria. †

**Q: What was wrong with the child?**

A: He had *homa*, a runny nose, eye infection and rashes, and I noticed that his head had sunk.

**Q: What illness did you think it was?**

A: I thought it was malaria. †

On the other hand, some conditions associated with clinical malaria are locally classified as something else. Notable among these is the Kibukusu term *lini*, described as a hard mass on the left side of the abdomen. Clinically, this corresponds to an enlarged spleen, which is the result of repeated malaria infections. Caregivers often talk about *lini* as a separate condition from malaria, though sometimes they see it as related.

**Q: What do you call this illness?**

A: *Kumurengo nende lini* (Malaria plus lini). ♦

**Q: Let us go back again to the symptoms, can you tell me what you called the disease after seeing the symptoms?**

A: *I think it was kumurengo.*

**Q: Did the child improve?**

A: *Yes. He improved. Only lini is still a problem.* ♦

**Q: You said he was sickly last year, what was the symptom?**

A: *Stomachache; he would wake up with an extended stomach as if he had already had breakfast and he won't eat anything. It felt as if he had a ball which was rolling all over his stomach.*

**Q: What did you think this illness was?**

A: *Hii kugonjeka huwa ni lini* (This sickness is lini). ♦

**Q: What do you think caused the illness your child is suffering from?**

A: *The malaria, it is caused by mosquitoes and cold. The lini is caused by frequent malaria and mosquitoes.* ♦

Another local illness, which appears to correspond to clinical malaria but is often perceived as separate, is *embaha*.

(I thought it was) *embaha*. *But embaha afflicts fat children and this child is not fat.*<sup>10</sup> *So I thought it could also be malaria.*

This condition is described as hot body with cold feet, accompanied by diarrhea described by several people as greenish-yellow or yellow turning to green. The importance of *embaha* is that custom says that this illness should be treated only with herbs for a period of 3 or 4 days. Thus, a child locally diagnosed with *embaha* is likely not to receive appropriate and timely treatment. In the narratives, there were only seven cases classified as *lini* or *embaha*, but those cases were much more likely to involve traditional treatment, including treatment from a traditional healer, than those diagnosed by caregivers as malaria.

A case example of *lini* and *embaha* appears in the Annex.

### Implications

- The IMCI orientation about danger signs is well suited to local concepts of illness.
- Care should be taken in use of the word *malaria* in communicating with caregivers, since local concepts of malaria do not always correspond to clinical definitions. The term may or may not be appropriate, depending on the specific content or objective of the message.
- It is best for providers to ask their patients about specific symptoms, rather than use illness names, since local use of the term *malaria* as well as local translations such as *kumurengo* differ somewhat from the clinical definition.
- Caregivers need to know that *lini* and *embaha* are part of malaria and should be treated immediately in a health facility.

10. This is the only reference to *embaha* affecting only fat children, so this idea may not be typical.

## Treatment of Febrile Illness

### Recognition of Illness Symptoms

**F**or malaria to be treated in a timely manner, the caregiver must recognize signs of illness as soon as they appear. To learn how caregivers define “ill,” in each narrative the caregiver was asked to specify the day the child became ill and how she knew the child was ill. Further, to determine whether caregivers are sensitive to early signs that a child is getting ill, they were asked what the child was like the day before the child became ill. Thus, the narratives included the following sequence of questioning:

- When did the child become ill? (*Ascertains day caregiver defined the child as ill*)
- How did you know the child was ill? (*Ascertains symptoms that define “ill”*)
- What was the child like the day before the child became ill? (*Determines recognition of early signs*)

There is evidence that some caregivers may not be defining a child as ill soon enough. In defining a child as ill, most caregivers cited symptoms such as fever, diarrhea, and vomiting. When asked how the child was the day *before* becoming ill, most named expected early warning signs, such as diminished activity, loss of appetite, and crying or irritability. However, about 25% did not see any early signs (and certainly, in some cases, there are none) and a small minority (5 to 10%) named symptoms such as fever or vomiting that should have led them to consider the child ill. Some caregivers may accept some of these early signs as normal, resulting in delayed treatment for the child.

**Q:** *Did you notice anything about the child the day before she became ill?*

**A:** *She had hot body, was weak, and had no appetite. †*

Similarly, some caregivers consider the child to be well even though illness symptoms are still present: *The child has recovered but fever is still present.* For the vast majority of caregivers, however, fever is a defining symptom of illness that prompts treatment action. Convulsions are usually, but not always, considered serious. Caregivers virtually always link convulsions to high fever and malaria. Few associate convulsions with the supernatural.<sup>11</sup>

Anemia is universally described as “lack of blood.” The most commonly mentioned signs are pale hands and feet, white eyes, and weakness. The most frequently named causes are deficient diet,

11. The association is stronger in other parts of Africa. See Adongo, P. and P. Hudelson. 1995. Care-seeking for Illnesses with Fever or Convulsions in Zambia: Final Report. *The Management of Malaria in Young Children in Northern Ghana*. Geneva: World Health Organization/Tropical Disease Research. See also Bisika, T. 1996. *Malaria Case Management in Children in Malawi*. Geneva: World Health Organization/Tropical Disease Research.

worms, and malaria. Anemia is considered very serious and likely to result in death. It appears that anemia is not recognized until it reaches a severe stage, when indeed the child may be near death. (In reality, it is difficult to recognize mild to moderate anemia from external signs.) Although prevalence of anemia is high, only two caregivers reported in the narratives that the ill child showed signs of anemia, and one other said the health provider had told her that the child had anemia. This suggests that even fairly serious anemia is not recognized by caregivers and that health providers are not communicating to caregivers about it when it occurs.

#### Implications

- Incorporate education on signs of illness into health talks, although this does not have to be heavily emphasized.
- Build on caregivers' recognition of early signs, such as reduced appetite and activity, as signs to monitor for worsening condition.
- If possible, identify ways for caregivers to detect anemia before it becomes severe.

## Treatment for Fever

This study principally derives its information on care-seeking patterns from the 97 illness narratives, which describe in detail all treatments undertaken during the course of a child's recent febrile illness and the reasons for each treatment decision. The sample is described in Table 9.

### *Home Treatment*

#### Home Treatment Patterns

Childhood febrile illness is almost always treated first at home: over 90% of caregivers reported treating fever at home. Home treatment is dominated by modern pharmaceuticals. Caregivers either "know" what drugs to give or describe symptoms and obtain recommendations at a pharmacy. Of those giving treatment at home, about 80% give an antipyretic; over 50% give an antimalarial; about 20% give an antibiotic; and about 25% give at least one other type of drug. Most children treated at home receive 2 or 3 drugs, but it is not uncommon to give more:

*I noticed the child was sick, and I went to the market and bought Geston tablets and gave one tablet. I also gave aspirin, which I had been given one time at the hospital . . . On the following day, I went to the chemist at Lwakhakha when I noticed the child was not improving. I bought Panadol, Cofta, and Actifed tablets, Wellcome tablets, and also Flagyl tablets . . . My mother also advised me to buy Good Morning syrup but I did not get it . . . †*

**Q: Now tell me about the treatment you gave him, which you said you keep on hand at home?**

*A: I gave CQ, which I sometimes mix with Septrin and sometimes with Panadol and usually I would give with the Flagyl.*

**Q: How much of each were you giving?**

*A: CQ one every six hours for three days; Septrin three times a day for three days; Panadol half tablet three times a day for three days; also Flagyl. I also gave Franol . . . [unknown medicine]*

**Q: What happened after the three days of giving the medicine?**

*A: The child was somewhat well but then after four days he became ill again so I gave the drugs the same way.*

**Q: Did you take him this time to the hospital?**

*A: I did not but about four different times he got the attack—feeling better for about four days and ill again but I just treated at home.*

**Q: How come you never took the child to any health facility?**

A: *Because each time I wanted to do that the child seemed to have recovered.*

**Q: Did you try any herbal medicine?**

A: *I did not.* ♦

Panadol is the most common antipyretic given, but some children are given antipyretics that are too strong for children. Some children are given two antipyretics.

CQ-based antimalarials are by far the most common type given. However, Fansidar™ is becoming known and accepted: 9 of 49 mothers who gave an antimalarial at home gave Fansidar™. Several mothers said they would have preferred to give Fansidar™, but that it was too expensive or unavailable. A few combined CQ with Fansidar™ or quinine. Whatever the antimalarial the caregivers administer, it appears that fewer than half of the caregivers give the correct dose.

Tepid sponging is taught in health centers but very frequently is not practiced; 10 to 15% of caregivers said they had done it. Herbal remedies are not commonly given for febrile illness, except when the caregiver diagnoses the illness as *embaha* (see previous section *Terminology and Illness Concepts* for a description of *embaha*).

### Role of Pharmacies

Because of the tremendous amount of home treatment, pharmacies and other drug outlets play a key role in the care-seeking process. Pharmacies are assuming some of the roles of health facilities, with some pharmacies either formally or informally diagnosing illness. Some pharmacies have treatment rooms where they do examination and diagnosis, and some (illegally) give injections. Few require prescriptions for antibiotics or any other drugs.

**Q: How did you know how to give the medicine?**

A: *I learned this when I went to buy medicine at the chemist. I explained how my child was suffering, and was given the drugs and instructions how to use.* ♦

**Q: What did you think the illness was?**

A: *Malaria, so I went to the pharmacy and bought Septrin syrup (co-trimoxazole).*

**Q: Why did you decide to go to the pharmacy?**

A: *In the pharmacy, they treat and sell drugs . . . I gave the syrup for two days, and the child became worse and I took her to Misikhu Hospital. But before I went to Misikhu Hospital, I passed by the pharmacy and I was advised to take the child to Misikhu.*

**Q: Why did the person at the pharmacy advise you to take the child there?**

A: *Because after looking at the child's eyes, he said the eyes were very white.* ♦

Given that pharmacies charge little or nothing for advice, have no queues for service, and are often more conveniently located than health centers, they present an attractive option for caregivers.

It appears that advice at pharmacies is usually provided by someone with no formal health or pharmacy training whatsoever. Of 13 pharmacies visited for this study, only 3 had a pharmacist or pharmaceutical technician in the shop when researchers visited; 2 had staff with nursing training; and 8 had no qualified staff. Only urban pharmacies had trained personnel present; in rural ones, unqualified people gave advice and sold drugs. Even when qualified staff are present, others may sell drugs to or advise caregivers. Six of the eight rural pharmacies were licensed in the name of someone who also owned an urban pharmacy and lived in the urban area, meaning that the licensee did not actually work in the rural pharmacy.

Pharmacies sell a number of generic SP antimalarials of unknown quality. The prices of these generic SP drugs are lower than their brand counterparts and therefore more affordable to caregivers.

### **Role of Shops**

Small shops sell a wide assortment of commonly needed items, including pharmaceuticals. They provide a convenient source of basic drugs, especially for rural residents who do not have ready access to pharmacies. Their prices tend to be higher than pharmacies, since they do not buy in bulk. Shops tend to carry a limited number of antimalarials and a wider variety of antipyretics. Shop vendors are not, of course, trained in the use of antimalarials or antipyretics. They tend to get their stock from unofficial suppliers who may not have stored the drugs properly, and their own storage areas are often inadequate.

### **Why Caregivers Treat at Home**

There are a number of reasons why caregivers visit pharmacies or shops and treat at home. Most feel they have experience from earlier illnesses and base their treatment on what a health facility recommended or what worked in the past. Because a popular home treatment combination is an antipyretic, an antimalarial, and an antibiotic and because these drugs will abate the symptoms of a large proportion of childhood ailments, caregivers get a good short-term response and believe their treatment is successful.

For many caregivers, there is no special advantage in going to a health facility. Health facilities can be costly and require a lot of travel time. A caregiver may have to wait a long time and may be received poorly when she is seen. Health facilities tend to recommend a fairly standard set of drugs that caregivers can get at a pharmacy, so caregivers save time and expense by going directly to the pharmacy.

Figure 9 quotes caregivers' reasons for treating children at home rather than taking them to a health facility. The Annex provides case examples of home treatment, either as the sole resort to care or combined with care from outside providers.

#### Implications

- Specific home care guidelines need to be developed and communicated to caregivers.
- Work with pharmacies must be a major part of any intervention strategy.
- Prescription regulations should be enforced to curb easy access to legally restricted drugs such as antibiotics and quinine.
- A licensed person should be present in a pharmacy at all times.
- Charts describing regime and dose for antimalarials can be posted in pharmacies, and possibly handouts can be printed for distribution.

### ***Treatment at Health Facilities***

#### **Overall Patterns of Care-seeking at Health Facilities**

Residents of Bungoma District have a large number and variety of public and private formal health facilities available to them. Government as well as non-governmental organizations (usually

nonprofit, religion-affiliated organizations) operate facilities at three levels: hospital, health center, and dispensary. In addition, there are many small private commercial clinics that may or may not be registered or regulated. These small clinics are often operated by someone who has clinical officer training and who is usually referred to by community members as a “doctor.”

Among the 97 caregivers who gave illness narratives, 49 reported taking the child to at least one health facility during the course of the illness. That is, about half sought care from a formal health provider. Typically, a child is taken to a health facility if symptoms persist after 1 to 3 days of home treatment. Eleven percent of children had been taken to two or more health facilities. It should be noted that this figure underestimates the actual proportion of cases seen at multiple facilities, since the narratives included ongoing cases that are likely to include further visits. About one-third of the children in the illness narratives were still ill.

### Figure 9. Why Caregivers Go to a Pharmacy and Treat at Home (Rather than go to a health facility)

**Q: Why did you decide to buy those drugs?**

A: *You see, the child has been sick before, and when I took him to Bungoma Hospital, they prescribed these drugs, which normally cure the illness. So I keep buying the same.* ♦

**Q: Where did you take him for treatment?**

A: *I usually buy medicine from pharmacy and give and the child responds well.*

**Q: Were you happy with what you were given?**

A: *I was quite happy because it was cheap only 40 [Kenya shillings] and my child recovered.*

**Q: What is the distance to the pharmacy?**

A: *About three quarter kilometers. I take about 15 minutes there and back.*

**Q: Why did you choose to go to the pharmacy?**

A: *Because it is near and cheaper. They have quick service and can even give injections if you want.* ♦

**Q: You said you prefer to go to the chemist whenever your child falls sick, why?**

A: *Because the doctor at the chemist advises on the best medicine to buy, and also does injections if the illness is serious. The chemist is the cheapest.* ♦

**Q: Why did you decide to buy medicine from the chemist and not take the child to the health center?**

A: *The chemist is cheaper and has quick service. I am a business woman and have no time to queue at the health center. I always go to the chemist whenever my children fall sick.* ♦

**Q: Are there reasons why you went to the chemist and not elsewhere?**

A: *Here, private clinics are very expensive, and being the second wife I could not obtain the money. Korosiandeti Dispensary is also very expensive. You can pay money and fail to get drugs, and the money is not refunded. For this reason I prefer buying from a chemist or shop.* ♦

**Q: What made you go to the chemist and not somewhere else?**

A: *The chemist is cheap but Machwele Dispensary is very expensive. Simple malaria treatment is not less than 100 [Kenya shillings] and I did not have it.*

**Q: Is there anything else make you go to the chemist, apart from money?**

A: *There are no queues at the chemist, and the attention is good compared to Machwele.* ♦

**Q: The dispensary is very close. Why did you decide to give Cosmos and aspirin and not take the child to the dispensary?**

A: *I did not have money because my husband was away. I was also afraid to go because there were several people admitted suffering from cholera, and even some had died.* ♦

Notably, almost half the children taken to some kind of facility were taken to small private commercial clinics.

### **Caregivers' Experience at Site Facilities**

Information on caregivers' experience in government and nonprofit health facilities is drawn principally from interviews and observations at the eight health facilities in Table 10. Fifty-nine caregivers of children under 5 years who had fever were interviewed before seeing the provider, observed in session with the provider and in the treatment room, and interviewed upon exit. Of that 59, a subset of 26 were also interviewed at home after their visit to the facility to research compliance and additional treatment.

In addition to fever, the most common symptoms that prompted the caregiver to bring in the child were cough, vomiting, and diarrhea. A small minority had had convulsions. About two-thirds of caregivers perceived their child's illness to be malaria, although nearly one-quarter said they didn't know what the child had. Almost 40% had already been to the same or another facility for the same episode of illness. A few of these caregivers were simply bringing the child back as part of a series of injections.

Given that children with fever in Bungoma District are almost always treated at home, often treated with more than one drug, and also sometimes taken to more than one facility, it is especially important that a provider examining a child find out what treatments have already been tried and with what effect. Most providers ask at least some basic questions about the symptoms and treatments. Typically, however, they do not ask enough to understand fully the treatment history. One provider declined to look at a health card that a mother had brought that documented an unsuccessful treatment in another health facility.

Inadequate history-taking means that a child may receive a repeat series of drugs that do not work, a dangerous combination of drugs, or an overdose as new drug regimens are given on top of the drugs the caregiver is already giving. Most providers interviewed were aware that caregivers are likely to have treated the child at home and that many have already consulted another health facility, yet few ask about prior treatments. Some providers say they have to probe a lot to get the information.

Providers do not routinely advise caregivers on feeding the child. Since diarrhea contributes to malnutrition and repeated malaria causes anemia, it is especially important that caregivers be advised on feeding and that affordable strategies be sought. Providers realize that sometimes the foods they recommend are not affordable. Follow-up home interviews conducted with caregivers after they visited a health facility confirmed that cost is a reason that they do not follow some feeding advice.

Providers recommend medication for virtually all children. Almost all are given an antimalarial. CQ or Amodiaquine was given in about 60% of cases, and Fansidar™ was recommended in about 35% of cases. This suggests that Fansidar™ is becoming accepted among health providers. Several children were given quinine or Cotexin, a new antimalarial, and about 10% were given two antimalarials simultaneously. Most children are given one or two other drugs as well, usually antipyretics (55%) and antibiotics (45%).

Communication with the caregiver on what drug she is being given and how to administer it varies by facility. At some facilities, staff checked that the caregiver understood how to administer the drug properly, but at others, especially when the facility was busy, there was little communication about drugs and dosages. When CQ was given, the importance of completing a full 3-day course was seldom communicated. When Fansidar™ was given, caregivers were rarely told about the features of the medication, such as that only one dose is required, that it does not reduce the fever as CQ does, or that it may take time to work. Caregivers usually are not given written instructions. Much of the bottled liquid medicine is not labeled; caregivers bring in their own bottles, and often old instructions remain on the bottle. In exit interviews, about 20% of caregivers could not name the antimalarial they had been given, and about 25% could not cite the correct dose.<sup>12</sup> In the illness narrative interviews, when caregivers were asked what was given to the child, many said they did not know and could only say “an injection” or “some yellow tablets and some white ones.” Thus, a significant minority of caregivers leaves the facility with a hazy idea of how medications should be given. Follow-up home interviews conducted between 2 and 4 days afterwards found that about one-third of the caregivers who were told to give antimalarials at home were giving incorrect amounts.

Some caregivers feel they are received poorly at some health facilities.

**Q: Did the health worker explain the child's illness to you?**

A: *No. When you go to the hospital, they just treat the child without any explanation. If you ask a question, they tell you to let the child be treated, or go away.* ♦

*Health workers are not serious about you. As you start explaining, they start writing without attention, and then refer you to a private clinic where they have interests.* [From a focus group] ♦

*... you are abused and harassed like small children, and are told to go and wait in the long queue ...* ♦

### Caregivers' Experience at Private Clinics

There is a large number of small private commercial clinics or private “doctors” available to caregivers. Some are unregistered and unregulated. They play a very large role in the treatment of febrile illness; in the illness narratives sample, almost half of the children (about one-quarter of the cases in the sample) taken to some kind of formal health facility were taken to a private clinic rather than a government or non-governmental charitable facility.

Researchers visited nine private commercial clinics or private “doctors” to gain information about their staffing and treatment for malaria. Although the sample is too small to allow firm conclusions, the visits suggest some likely problems. Adequate staffing appears to be a problem; four of the nine clinics had no qualified staff member present at the time of the visit, even though patients were being seen. Four clinics had laboratory facilities for diagnosing malaria, although the quality could not be assessed. There is a great variety in treatment practices for febrile illness. Two private clinics routinely give combinations of antimalarials: CQ plus Amodiaquine or CQ plus Fansidar™. One clinic always gives CQ plus an antibiotic, and one always gives quinine. A few private clinics give CQ as the first-line drug and Fansidar™ as the second. This treatment has been acceptable, but the Ministry of Health has changed to Fansidar™ as the first-line drug. Only one private clinic routinely treats with Fansidar™ as the first-line drug.

12. After the exit interview, researchers explained the correct dosage to the caregiver.

Figure 10 provides quotes from caregivers as to why they prefer private clinics to other facilities. The Annex gives full case examples from the narratives where private clinics were consulted.

### Figure 10. Why Caregivers Go to Private Clinics

*We believe in injections. If we go to the hospital and they don't give an injection we get disappointed. The small clinics give injections. ♦*

**Q: What made you decide to go to Moding [private clinic] and not Korosiandeti [government dispensary]?**

*A: Their cost is reasonable and there is no shortage of drugs. ♦*

**Q: Why did you decide to take the child to the private clinic and not to any other health facility?**

*A: Because the clinic is nearer and each time I take the convulsing child to the clinic, the child recovers. ♦*

**Q: Why did you decide on going to this clinic and not another?**

*A: I prefer it to others because that is where we have been going. If you don't have enough money, they will still treat you and you can take the money later.*

**Q: How much do they usually charge?**

*A: For children it's 180 Kenya shillings, but the man is also good with children.*

**Q: Were you satisfied with the treatment given?**

*A: I was because the vomiting, diarrhea, and fever were reduced. The only problem is that the baby is still not eating. ♦*

**Q: Why did you decide to go to Namwayo [private clinic] and not anywhere else?**

*A: Because at Namwayo, though expensive, the child was well examined, given water, and touched. The clinic has a lot of medicines. I paid a total of 370 Kenya shillings. This clinic is good also because one can pay in installments.*

**Q: How far is the clinic?**

*A: It is walking distance and one does not need public transport. ♦*

[Note: this mother is comparing two private clinics]

**Q: You were given an injection and syrup at Musheraki Clinic, and the same at Kamukuywa Clinic. Why did you go to Kamukuywa?**

*A: Musheraki Clinic is only first aid. Their injections are not strong; we believe they dilute them. I showed the syrup given at Musheraki to the doctor at Kamukunya, and they took it away and gave me another one. But they looked alike . . . At Kamukunya they have a retired doctor who we trust, and they take laboratory tests, and tell you the illness. But at Musheraki, as quickly as you arrive they give the injection. ♦*

Caregivers elect to take the child to a private clinic instead of a government or mission facility for a number of reasons. Often these clinics are more conveniently located than other larger facilities, and generally the waiting time is short. Sometimes there is more personal service and treatment as the staff get to know a particular family at a private clinic. If a child recovers after treatment from one of these facilities, a caregiver is likely to return when the next episode occurs.

From the narratives, it appears that caregivers value injections, and private clinics administer them frequently. Some mothers reported their children getting 10 to 20 injections in the period of a week or two.

*These bodies like injections. If not injected they lose blood . . . ♦*

**Q: Were you satisfied with the treatment the child received?**

*A: Yes, because the child was given a full vial of injection and improved within hours. ♦*

These clinics are not necessarily less expensive than other facilities, but sometimes payment installment plans are accepted. Costs seem to range from 300-700 Kenya shillings in urban areas and 100–200 shillings in rural areas. Urban wages are about 600-1,500 shillings per month and rural wages can be as little as 300 shillings per month (one US\$ equals about 60 Kenya shillings). Thus, the cost of treatment can equal a month's wage for working people—and with unemployment high, many families have no regular income at all.

### **Factors that Influence Choice of Health Facility**

There are a number of factors that affect a caregiver's choice of health facility:

- **Cost/affordability:** This appears to be a key factor both in the decision to take the child to a facility for care as well as in the choice of facility.
- **Prior experience with a child who recovered after being treated at the facility**
- **Availability of drugs**
- **Availability of modern equipment for examination and diagnosis, such as thermometer, laboratory, IV drips; if the exam was conducted not just by touching, but also with equipment**
- **Perceived competence of the clinician in treating children**
- **Access: convenient location, availability of transport, minimal wait time**

### Implications

- **IMCI training of health providers should include a section on how to get good information on prior treatments. Training on communication—how to make the caregiver feel comfortable and how to ask questions—would be helpful.**
- **Treatment advice should take into account prior treatments, so that repeat or double doses are not given.**
- **A plan needs to be developed to communicate the new drug policy to both public and private providers and make sure that it is well understood and implemented. A photocopy of the basic drug regimen posted in the observation, consultation, or treatment room would be very helpful.**
- **Health providers must be told the importance of giving feeding advice and finding feeding strategies that the caregiver can carry out.**
- **Training of treatment room staff can emphasize the importance of clear communication with the caregiver about drugs and dosages and of ensuring that the caregiver has understood.**
- **An IEC specialist needs to develop a simple and clear antimalarial and antibiotic dosage card for non-literate caregivers.**

### **Community Providers**

Caregivers treat childhood febrile illness or perceived malaria almost exclusively by administering drugs at home or going to a health facility. They seldom consult other types of providers such as community health workers (CHWs) and traditional healers.

### **Community Health Workers**

No caregiver in any of the 97 narratives reported consulting a CHW. A CHW was available in only two of the eight research sites. CHWs are volunteers, and many have discontinued work or joined other community services that give at least some small incentive—for example, community-based growth monitoring or distribution of family planning products. In Milo and Chwele, CHWs used to be provided with some basic drugs. They no longer have drugs and now play primarily an educative role and refer caregivers to the health center. CHWs do have a potential role in encouraging better case management. In Milo, CHWs said, “Many people consult us and we urge them to finish the dose . . .”

### **Traditional Healers**

Very few caregivers—only 6 of the 97 who gave an illness narrative—reported seeking the assistance of a traditional healer for their child’s recent case of febrile illness. This may be an underestimate, since caregivers may be reluctant to report traditional practices. However, the amount of underestimate is likely to be small. In the introductory community discussion, community members talked openly about traditional healers. In individual interviews that followed, researchers were trained to probe in a neutral way. It should be further noted that caregivers tend to consult with traditional healers after other options have failed; since our sample included many mild or resolved cases, caregivers in these narratives did not need to pursue further treatment options.

Children were taken to a healer after they had failed to respond to other modern therapy; in no case was a healer consulted first. The type of traditional healer consulted was either a herbalist or a “bone-remover;” no diviner or spiritualist was consulted. In some cases, traditional healers cooperated with the modern health sector and advised patients to get medication or seek care at a health facility. See the Annex for case examples of how a traditional healer fits into the overall care-seeking sequence.

#### Implications

- Consider having CHWs play a greater role in community case management of febrile illness by giving them the ability to distribute and monitor drug doses. (First conduct a pilot test and troubleshoot this option by using CHWs to distribute and monitor the use of Fansidar™ in one particular geographical area.)
- Work with traditional healers to make sure that cases of *embaha* and *lini* are referred immediately to a reputable health facility.

### **Treatment for Convulsions**

This study draws its information on the treatment of convulsions from focus groups and the illness narratives. Few cases were described in the narratives—four cases of twitching (a precursor to convulsions) and five of convulsions—but these cases suggest that caregivers do not take twitching and convulsions as signs of a serious condition.

Twitching appears to be treated much the same as any other symptom, such as diarrhea or vomiting: caregivers treat the symptoms at home. In only one of the four twitching cases was the child taken to a health facility, and that was after the fever persisted for 4 days and the eyes turned white.

Even convulsions are treated at home. In two of the five narratives involving convulsions, the child convulsed frequently, and quinine was kept at home so that it could be administered immediately. The caregivers did not seem to be particularly worried about this pattern. In one case, the child was losing consciousness, so the mother gave five different drugs on the advice from the pharmacy. The child got better but relapsed and then, on the day of the interview, had improved. In two cases of sudden and severe convulsions, the children were rushed to a private clinic. One of these children died; the other was given 20 injections and was taken home after a week, unable to walk and still ill.

In all focus group discussions, participants associated convulsions with fever and malaria, and said that convulsions should be treated at a health facility. In some groups, evil spirits were also mentioned as a cause (always mentioned *after* malaria or fever) and traditional healers were mentioned as a treatment option.

**Q: How do you decide on treatment for convulsions?**

*A: If a child has been to a health facility and does not recover, then I take him to a traditional healer. But if the child has a very hot body, we take him to the health facility. ♦*

However, although some focus groups made reference to the supernatural, in none of the nine narratives involving twitching or convulsions did caregivers mention spirit causes or consult with a traditional healer. The association of convulsions with the supernatural was weak and did not substantially contribute to poor care-seeking practices.<sup>13</sup>

#### Implications

- Messages should emphasize that twitching and convulsions are danger signs, and that a child who is twitching, convulsing, or losing consciousness should be taken to a health facility immediately.

## Overall Care-seeking Patterns

Each of the 97 illness narratives provides a chronological account of where care was sought for a case of fever occurring within the 2 weeks prior to the interview. Sources of care were categorized as follows:

- **Gave home treatment.** Here the locus of decision making is the caregiver. This category includes any treatment given at home, whether traditional or modern. It also includes visits to the pharmacy and possibly involves recommendations on the part of pharmacy staff. Thus, if the caregiver decided to buy CQ or an antipyretic at a pharmacy or shop and give it at home, this was included in the home treatment category. Also included in this category are traditional treatments such as herbal remedies and new learned behaviors such as tepid sponging.

13. See note 11.

- **Consulted health facility.** The study uses two categories: GOK and NGO facilities (*bona fide*, registered health facilities) and small commercial private clinics (may be unregistered or unregulated).
- **Consulted community health worker.**
- **Consulted traditional healer.**

Table 12 shows the number and percentage of cases involving, at any point in the illness, a particular resort to care. These percentages add up to more than 100, since cases often involve care from multiple sources.

Table 13 shows the *sequence* in which care was sought from various sources. Note that there is only one sequence per case, so these sequences add up to 100%.

In interpreting these data, one should bear in mind the nature of the sample: children under 5 years who had had fever within the 2 weeks prior to the interview. Many were mild cases that appeared to be resolved fairly readily, of which many were undoubtedly not malaria. Few cases—only five (5%)—involved convulsions. The data would be quite different if the sample had been drawn during the rainy season and included more cases of convulsions; or was drawn only from health facilities; or if this had been a study of children who had died from illness with fever. For the latter sample, for example, one would expect continued care-seeking and greater use of traditional healers as caregivers tried as many options as they could to heal the child. The results of this study exemplify how different samples produce different results: the percentage of cases taken to the health center more than once was 11% in the illness narratives sample drawn from the community at large, and almost 40% in the sample drawn from the health center. These data do not contradict each other, but rather show two aspects of the same picture.

These data corroborate the patterns described in earlier sections and support several basic conclusions about caregivers' response to fever in young children. One is that a tremendous amount of treatment takes place in the home. Some cases are treated solely at home; indeed, this is by far the single most common treatment pattern. A visit to a health facility usually occurs after home treatment has been initiated. CHWs and traditional healers are infrequently consulted for simple fevers.

**Table 12. Resorts to Care  
Number and percentage of cases involving a given resort to care (n=97)**

Resort	n	%
Gave home treatment	87	90%
Consulted health facility at least once	49	50%
GOK or NGO facility	31	32%
Commercial private doctor/clinic	23	24%
Consulted health facility two or more times	11	11%
Consulted traditional healer	5	5%
Consulted CHW	0	0%

**Table 13. Sequence of Care-seeking  
Number and percentage of cases following a given sequence of care-seeking (n=97)**

Sequence	n	%
Home {end}	48	50%
Home → HF	28	29%
HF {end}	7	7%
Home → HF → HF*	5	5%
HF → HF*	3	3%
Home → TH → HF → HF*	2	2%
Home → HF → HF → TH*	1	1%
Home → HF → TH	1	1%
Home → TH → HF	1	1%
HF → Home	1	1%
<b>Total</b>	<b>97</b>	<b>100%</b>

Home= home treatment; HF= health facility; TH= traditional healer

\* Sequences indicating two health facility visits include those who made two or more HF visits for the same illness

## Drug Perceptions

The Ministry of Health in Kenya is recommending a change in drug policy from the use of CQ to the use of Fansidar™ as the first-line drug for treatment of uncomplicated malaria in endemic areas. CQ resistance is growing, and Fansidar™ is effective against a wider variety of malaria parasites. But caregivers are used to CQ, which has different properties from Fansidar™.

CQ acts quickly and has an antipyretic effect, so that the patient feels rapid relief, even though all parasites ultimately may not be killed. Fansidar™ also takes longer to act and does not reduce fever, so it must be taken with an antipyretic. CQ requires multiple doses, while Fansidar™ is given in a single dose. Fansidar™ currently is more expensive than CQ.

To gather information about potential barriers to acceptance of Fansidar™, the research included interviews and small focus groups where samples of CQ-based antimalarials, Fansidar™, and antipyretics were shown to mothers. Participants were asked to sort the drugs into piles and to talk about why they divided the piles as they did and what each drug does. The main areas of interest were whether mothers recognized the difference between antipyretics and antimalarials, and what the perceived differences between the two antimalarials CQ and Fansidar™ were. Comments about drugs were also drawn from the illness narratives.

The results show that caregivers have fairly good general knowledge regarding the difference between the antipyretics and the antimalarials. Most caregivers sorted them into different piles and

Figure 11. Perceptions of the Roles of Different Drugs

**Q: Which of these have you used?**

A: I have used Malariaquine, dawaquine, Panadol, and Dawanol. Panadol reduces fever and Malariaquine treats malaria. ♦

**Q: What do the Panadol and Cafenol tablets do?**

A: Panadol lowers the body temperature and Cafenol reduces homa. ♦

**Q: What do CQ, Panadol, and Septrin treat?**

A: Septrin treats stomachaches and cough; CQ treats malaria; Panadol lowers the body temperature; and Pen-V adds more blood to the body. ♦

**Q: What do the drugs you gave do?**

A: Panadol lowers body temperature; Cofta and Actifed are for cough; Flagyl for the stomach; Geston and Good Morning also treat, but I don't know what exactly. ♦

**Q: Have you used any of these medicines?**

A: I have used Malariaquine and also Panadol.

**Q: What do these drugs do?**

A: I buy Malariaquine now since Panadol doesn't have much strength these days. ♦

Figure 12. Mothers' Comparison of CQ and Fansidar™

**Q: Why did you give CQ this time?**

A: Fansidar™ takes a long time to make the child feel better, and it is more expensive. ♦

*I didn't give CQ, as I had Amobin (Amodiaquine). As for Fansidar™, it is more expensive. A friend said Fansidar™ is not good for small children as it is too strong.* ♦

*Fansidar™ is good because it takes longer for the illness to re-occur. CQ sometimes itches.* ♦

*No [I have never used Fansidar™]. I usually give CQ and Amobin syrup from the chemist. My friend told me that she used Fansidar™ on her child and it stayed some months without falling sick. I was also thinking of using it . . .* ♦

**Q: What do Panadol, Malariaquine, and Fansidar™ do for a sick child?**

A: Panadol reduces temperature, Malariaquine tablets treat ordinary malaria, and Fansidar™ treats abrupt malaria. ♦

*Fansidar™ is stronger than chloroquine.* ♦

correctly stated that one was for fever and the other for malaria. In the narratives, when caregivers were asked what each of the drugs they gave to their child did, they usually knew that Panadol reduces fever and CQ treats malaria, but there was a lot of confusion about other drugs. Figure 11 cites mothers' comments regarding their perception of the role of various commonly used medications, especially antimalarials and antipyretics.

Fansidar™ is becoming known, and about half the caregivers in the drug perceptions focus groups recognized it when they were shown various drugs. It is perceived as stronger than CQ, and some think it too strong for young children. Many caregivers also know that it takes longer to work, but some said the child is longer without malaria after Fansidar™ is given. Figure 12 shows mothers' comments comparing the two antimalarials.

No one mentioned strongly negative things about Fansidar™, and it appears that there should not be significant barriers to acceptance of it, once health centers recommend it more widely and caregivers see other caregivers using it on their children with good results.

### Implications

- Since caregivers tend to expect quick results, caregivers should be counseled that Fansidar™ will take longer to work than CQ.
- Since caregivers seem to like the idea that a child is more likely to recover fully with Fansidar™ than with CQ, this can be used as a motivation for accepting a delayed response to Fansidar™.
- Given home treatment patterns and the many potential providers of antimalarials, a public education campaign with basic information about using Fansidar™ instead of CQ would "get the word out" quickly. Since general acceptance of Fansidar™ is good, it is likely that public education radio announcements that provide information about dosage and effects will be successful in rapidly increasing usage and in encouraging the correct dose.
- Caregivers and health providers should be cautioned not to give additional antimalarials during Fansidar™ therapy. Indeed, there should be general discouragement of simultaneous use of multiple antimalarials.

## Communicating with the Community

**B**ecause a separate IEC assessment was carried out in Bungoma District at the same time as this study, this section covers only some general communications-related findings from the community discussions and illness narratives.<sup>14</sup>

### Decision Makers

Mothers are independent decision makers regarding treatment for their children's illnesses. A few consult their husbands or their mother or mother-in-law, but ultimately mothers make their own decisions. In some sense they are too independent; they feel free to modify advice given at a health facility, adding drugs as they see fit.

Fathers play a small role in caring for sick children. Their main role is to purchase the drugs; in perhaps 5 to 10% of the cases, the father went to the pharmacy or was asked to provide the money so the mother could do so. Fathers rarely take the child to the health facility, and in some facilities they are discouraged from doing so. (*"Where is the child's mother? Are you the one who gave birth to this child?"* was heard in one health facility.) On the other hand, Bungoma Hospital consciously encourages fathers' involvement by letting men who bring in a sick child go to the head of the queue.

#### Implications

- Mothers are the primary target audience for communication programs.
- Since fathers often purchase drugs, they could be included as a secondary target audience. Specific messages regarding antimalarial drugs could be aimed at fathers and other ways could be devised to encourage fathers to play a greater role in care of sick children, as Bungoma Hospital has done.

### Means of Communication

Almost all communication regarding treatment of illness is interpersonal ("face-to-face"). Few mothers have access to mass media. Newspapers are read by only a minority of urban populations; literacy is marginal and newspapers are expensive. Television is rare among the sample population and is found in only few urban homes. Radio is more common, but even in homes that have it, the mother may not have good access to it. Men tend to own and have control over the radios and may even take the batteries with them or lock them up when they leave the house. Some men also feel that women do not have time to listen to the radio.

14. See Dondi, N., S. Danda, and T. Kangere. 1988. *Bungoma District Information, Education and Communication Assessment*. Kenya: Ministry of Health (April).

Nonetheless, radio could play a larger role in educating and motivating the population on care-seeking. There is interest, and women say they may have time in the evenings to listen after the day's work is done. There were a number of references in the narratives to information learned from the radio on health issues, such as cholera.

All community discussion groups could name several topics found on posters in health facilities. It was not possible to ascertain what if any, effect, these posters had.

Most health information that mothers have is from talks at the health center.

However, most of these talks have been discontinued. In most communities there are other groups that might serve as vehicles for information about health, such as women's groups, church groups, and other social or economic development groups.

The community wants information on health. It was clear from focus groups that community members are eager to learn and appreciate educators coming to discuss health issues with them.

#### Implications

- Develop an IEC strategy that is based in interpersonal communication, but draws on other channels as appropriate.
- Revive health talks, but provide materials or other means to make them interesting and effective.
- Take advantage of existing community organizations and structures to disseminate information about the appropriate treatment for febrile illness.

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## Narrative 1: Home Treatment

Child is 3 years old and has a history of frequent convulsions

### DAY 1

**Q: How did you realize the child was ill?**

A: *The child's body was hot, he was breathing fast, and had swollen eyes.*

**Q: When you realized the child was sick, is there anything you did or gave the child?**

A: *Yes I bought Algon and Panadol tablets from nearby shop and gave to the child.*

**Q: How much of each did you give?**

A: *I gave half a tablet of Panadol with half a tablet of Algon at around 10:00 in the morning.*

**Q: Whose decision was it to buy Algon and Panadol?**

A: *It was my decision.*

**Q: Why did you choose Panadol and Algon?**

A: *I have been using it for a long time and each time I give it the child shows some improvement . . .*

**Q: Anything else you gave the child on this day?**

A: *At around 1:00 p.m. the child had not improved so I gave him some syrup, which I was given earlier from a private clinic when another child was ill.*

**Q: Do you remember the name of the syrup?**

A: *It was called Pyralafin [a generic of SP].*

**Q: How much did you give to the child?**

A: *I cannot remember.*

**Q: Did the child improve?**

A: *No.*

**Q: So what did you do next?**

A: *When the father came in the evening, he went to a nearby chemist and explained the nature of illness. He was advised to buy a tablet which was crushed into a powder and divided into two portions. One portion was given on that day and the other half was to be given the following day.*

**Q: What time did you give the child this "powdered" tablet?**

A: *It was around 9:00 p.m.*

**Q: Did you know the name of the medicine?**

A: *No . . .*

### DAY 2

**Q: On the second day of the illness, how was the child?**

A: *The child had improved somewhat.*

**Q: What did you do on this day?**

A: *I gave the child the remaining half of the crushed tablet my husband bought from the private chemist.*

**Q: Did the child's condition improve?**

A: *Yes, the child started playing with others.*

### DAY 3

**Q: How was the child on the third day?**

A: *The child was fine.*

**Q: Did you do anything on that day?**

A: *No. Since the child was fine, I did not see any need of being worried.*

## Narrative 2: Home Treatment Plus Health Facility

Seven-month-old girl

### **DAY 1**

**Q: What made you think the child was sick?**

A: *She had hot body, cough, diarrhea, and loss of appetite.*

**Q: What illness did you think it was?**

A: *I thought it was malaria.*

**Q: What did you think caused this illness?**

A: *Mosquitoes.*

**Q: What did you do to ease Helen's condition?**

A: *I went to the chemist in Chwele and bought Malariaquine tablets and gave her half a tablet per day. I also bought Panadol and gave her half a tablet for 3 days. [Mother sought advice from chemist] . . .*

### **DAYS 2-4**

*I continued giving her half a tablet of Malariaquine and half a tablet Panadol. [Mother continued giving each day for 3 days. When she finished giving the medication, the child was still sick, still coughing.]*

### **DAYS 5-6**

**Q: What did you do?**

A: *I bought cough syrup and Piriton [sought advice from the chemist]. I was told to give half a teaspoonful three times a day for both.*

**Q: How much did the medication cost?**

A: *I paid 15 Kenyan shillings for each.*

### **DAY 7**

*The child continued being feverish and I noticed her eyes were turning white, so I decided to take her to the health clinic [Chwele].*

**Q: What happened at Chwele?**

A: *She was given a penicillin and CQ injection together. I was given Septrin and Panadol syrup to give at home both half a teaspoonful three times a day for 3 days. I paid a total of 120 shillings at the clinic.*

### **DAY 8**

*I took her to the clinic for the CQ injection.*

**Q: How is she now? [11 days since onset of fever]**

A: *She has improved, but the cough is still there and the appetite is not good enough. She is still on the medication. But I was happy that her body hotness was cured.*

## Narrative 3: Seeking Care at Two Health Facilities

2-year 4-month-old male

### DAY 1

**Q: How did you know that the child was ill?**

A: I knew the child was ill when I saw the child sweating, and the body was hot.

**Q: On this day you realized the child was ill, what did you do, or give the child?**

A: I took child to a private clinic in Maliki Market. The child was given two injections and I was given some syrup and some tablets to continue treatment at home.

**Q: Did the health worker at the private clinic explain to you the type of medicine in the injections?**

A: No.

**Q: Did you know what the syrup and the tablets were?**

A: Yes, syrup was CQ and the tablets Panadol.

**Q: How much of each medicine did you give the child?**

A: For the Panadol, I was told to give the child ½ tablet three times a day for 3 days, for CQ syrup, I was advised to give the child one teaspoonful (5 mls) three times a day for 3 days.

**Q: Why did you decide to take child to the private clinic?**

A: Because it is very near.

**Q: What did you think the child was suffering from?**

A: Malaria.

**Q: Did you think it was a serious illness?**

A: Yes, very serious.

### DAY 2

**Q: How was the child on the second day?**

A: The child was still ill.

**Q: What did you do?**

A: I continued giving the child medicine as advised by health worker at private clinic. I gave the child Panadol, ½ tablet three times a day and also CQ syrup, one teaspoon three times a day.

**Q: Anything else?**

A: No.

### DAY 3

**Q: How was the child on the third day of illness?**

A: No change in the child's condition. So I decided to take the child to Lugulu Hospital.

**Q: Who advised you to take the child to Lugulu?**

A: I decided on my own because the child was not improving in spite of the treatment at the private clinic.

**Q: What happened when you arrived at Lugulu?**

A: The child's temperature was taken, and then I was referred to the laboratory where child's blood sample was taken. The health worker told me that the child still had malaria. I was then given five types of syrups to give the child at home. One was CQ, another Piriton, but I cannot remember the other three.

**Q: How much of each syrup did you give the child?**

A: I cannot remember. Instructions were written on every bottle of syrup. What I can only remember is that some of the syrups were to be given once daily, others twice, and others three times. One syrup was for only one day and others were for a number of days ranging from 3 days to one week.

**Q: How did the child fare?**

A: After the end of one week, the child had finished all the syrups and recovered.

## Narrative 4: Lini and Embaha

Child, 1½ years old, died in July 1997

### DAY 1

**Q: How did you know that the child was sick?**

A: *The child had yellowish/greenish diarrhea.*

**Q: What did you think the illness was?**

A: *Embaha.*

**Q: What did you do on the day you realized the child was ill?**

A: *Nothing.*

**Q: What do you think caused the embaha?**

A: *The child is born with it.*

### DAY 2

**Q: What did you do on the second day after the child became ill?**

A: *I gave the child Panadol.*

**Q: Why?**

A: *Because the child's body became hot.*

**Q: Where did you get Panadol from?**

A: *I bought from a shop at Milo market.*

**Q: What amount of the Panadol did you give the child?**

A: *I gave the child half a tablet of Panadol once every day for 2 days.*

**Q: Who decided that the child should be given Panadol?**

A: *It was my own decision.*

### DAY 3

**Q: What did you do or give the child on the third day after the child after the child became ill due to embaha?**

A: *I continued giving her Panadol. I gave half a tablet of Panadol in the morning.*

**Q: Anything else you gave the child?**

A: *No.*

### DAY 4

**Q: Anything you gave the child or did to the child on the fourth day after the child fell ill?**

A: *I gave the child mambaha, which is an herb for treating embaha which I was given by a traditional healer I consulted on this day.*

**Q: How is the mambaha given to the child?**

A: *It is given in two forms. The first form is to boil the herbs and give the child to drink once a day for 3 days. This is accompanied by washing the child with water mixed with crushed mambaha.*

**Q: Anything else on this day?**

A: *Yes, I realize that the child was also suffering from lini.*

**Q: How did you tell that the child was suffering from lini?**

A: *Because of diarrhea, vomiting, fever, and swollen stomach.*

**Q: So what did you do on this day when you realized that the child had lini?**

A: *I took the child to an old woman who is a traditional healer. The traditional healer confirmed that the child had lini after touching her stomach. She gave me some herbs, kamabukusu, which I gave the child once per day for 5 days and the child become a bit better.*

**Q: How did you give kamabukusu to the child?**

A: *Traditional healer advised that I crush the herbs and give to the child in milk.*

**Q: Is lini same as embaha?**

A: *No. But a child is also born with it.*

[continued on next page]

## Narrative 4: Lini and Embaha (*continued*)

### **DAY 5**

**Q: What did you give to the child on the fifth day?**

A: *I continued giving the child kamabukusu until after 5 days when the child fully recovered. [The mother continued this treatment from Day 4 up to Day 8 when the child fully recovered. After two weeks, presumably on Day 22, the child developed diarrhea and vomiting again.]*

### **DAY 22**

**Q: When the child developed diarrhea and vomiting what did you do, or what did you give to the child?**

A: *I gave the child some tablets I was told cures diarrhea.*

**Q: Did you know the drugs?**

A: *No.*

**Q: Where did you get the tablets from?**

A: *I bought from a chemist in Webuye.*

**Q: Who told you about the tablets?**

A: *A village Daktari.*

**Q: Does the village Daktari have a clinic?**

A: *No. People call him to their homes when they are sick or have sick children. So I called him to my house when the child started diarrhea and vomiting.*

**Q: Did he come the same day?**

A: *No. He came the second day.*

### **DAY 23**

**Q: What did you do on the day which followed the one on which child started diarrhea?**

A: *I took child to Webuye hospital.*

**Q: Why?**

A: *The child's condition became worse. Diarrhea continued and the body became very hot. At Webuye the child was admitted for 2½ weeks, given a total of 11 injections, and the child improved. At the end of 2½ weeks we requested that the child be discharged so that we could go home.*

### **DAYS 1–4 at Home After Discharge**

**Q: What did you do once at home after discharge?**

A: *I was given Septrin syrup and multi-vitamin tablets to give the child at home. I gave the syrup one teaspoonful twice daily and one tablet three times daily for four days but the child suddenly became ill on the fourth day and died before we could do anything else.*

## Narrative 5: The Role of a Traditional Healer

1½-year-old male

### **DAY 1**

A: *On Tuesday, the other week [10/2/98] he had hot stomach, cold feet and hot head.*

**Q: What else happened?**

A: *I went to the chemist, same day and bought Camoquine and Septrin.*

**Q: Any reason why you bought these drugs? Did anyone advise you?**

A: *I have used them before.*

### **DAY 0**

**Q: If you can remember, how was the child the day before he fell ill?**

A: *He began crying often, and I suspected there was something wrong.*

### **DAY 1**

**Q: When you gave him the drugs from the chemist did he improve?**

A: *No.*

### **DAY 2**

**Q: Then what happened?**

A: *I took him to the clinic at Chelekei on Wednesday [11/2/98] where he was given an injection and some drugs.*

**Q: Was there any improvement?**

A: *No.*

### **DAY 3**

A: *I took him back the following day [12/2/98], and he got another injection.*

**Q: Did you decide to go back or had you had been advised to?**

A: *They had asked me to take him for the second injection.*

### **DAY 4**

**Q: What happened next?**

A: *He did not improve. On Sunday [15/2/98] I took him to Namwaya clinic. He was given some syrup and tablets and also an injection.*

**Q: What syrup, do you remember?**

A: *It was chloroquine, but he did not improve.*

### **DAY 6**

A: *He was worse and was not eating. So I thought it was bikumba and on Tuesday [17/2/98], I took him to a traditional healer. The healer removed five pieces of bottle from his stomach and when I came home, he looked better and began to eat . . . His body temperature came down, and I was relieved.*

**Q: Is there anything else you would like to say about the illness?**

A: *You see, at first I thought it was malaria alone, but I have lost two children to bikumba, so that is why I did all these . . . When I went to the healer, I was referred to the chemist to buy some drugs.*

**Q: Are you saying, the traditional healer referred you to the chemist?**

A: *Yes.*

## Narrative 6: No Treatment for Lack of Money

1½-year-old male

### **DAY 1**

**Q: Please, tell me about your child's illness and what you noticed.**

A: *It was on Wednesday [4/3/98], the child woke up with hot body, running nose, difficulty in breathing, diarrhea, skin rashes and on the head also, and he had no appetite.*

**Q: Then, did you do anything to help?**

A: *I gave porridge and chai, but he vomited.*

**Q: Anything else?**

A: *I rushed to the chemist and bought Panadol for 6 shillings.*

**Q: Was that dose adequate?**

A: *No. But I had no more money.*

**Q: What illness do you suspect it was?**

A: *Homa and malaria.*

**Q: Did you do anything before you went to the chemist?**

A: *I sponged him to keep the fever down.*

**Q: Where did you learn about this?**

A: *First from my mother, and again from hospital where the nurses teach mothers attending clinic.*

### **DAY 0**

**Q: Can you remember the day before onset of illness, what was the child like?**

A: *He was okay and playing. This illness began in the night.*

### **DAY 2**

**Q: Tell me about the second day of illness?**

A: *I gave the Panadol.*

**Q: How were you giving it?**

A: *I gave one tablet on day one and thereafter half a tab during the day and evening.*

**Q: You still have the Panadol?**

A: *No. It's finished.*

**Q: How was the child yesterday?**

A: *Still unwell.*

[continued on next page]

## Narrative 6: No Treatment for Lack of Money (*continued*)

### **DAY 3**

**Q: What else have you done?**

A: *Nothing. The child is still ill. The father went to borrow money in order to take the child to hospital, but he was unsuccessful. So we stayed home and hoped for the best.*

**Q: Any hope?**

A: *Yes, today at 2:00 p.m. someone promised to give us some. So he is going to try his luck.*

**Q: Suppose he does not succeed?**

A: *We will stay with the child unattended. We tried to give our ID card as security, and no one would listen.*

**Q: None of you has gainful employment?**

A: *Not exactly. My husband used to have a small business but had to abandon as he stayed for 3 months in hospital with our older son. [Mother sells bananas, but last market day the prices were no good, and so took the bananas home for food.]*

**Q: Any reason why you cannot try Naitiri (Government) Health Center?**

A: *It is a bit far but also they will not treat without money.*

**Q: Have you tried?**

A: *I have experience with the older child, when he broke a leg and an arm. We can get no help without money.*

**Q: So where do you plan to take the child once you get money?**

A: *To Sikhendu, they have a laboratory and always carry tests before treatment.*

**Q: There is a private clinic here in Maliki, why not talk to them?**

A: *They will inject even without checking, and we believe their injections are light, diluted, kids only get worse after being taken there. They are expensive.*

**Q: What costs are you talking about?**

A: *They charge 200 to 260 shillings on the higher side and about 160 shillings for less serious cases. Where can we get such an amount?*

