

Figure 19: Illustrative Field Work Schedule 1

Day 1:	morning	full team: Community Introduction module	1 group
	afternoon	2–3 team members: Terminology and Taxonomy module 2–3 team members: Other Providers module	1 group 4–8 interviews
Day 2:	morning	4–6 team members: Health Facility module	6–10 interviews/ observations
	afternoon	4–6 team members (2–3 pairs): Illness Narratives module	4–8 interviews
Day 3:	morning	4–6 team members (2–3 pairs): Illness Narratives module 1–2 team members: Treatment Comparison module	4–8 interviews 2 groups
	Day 4:	2–4 team members: Health Facility module: Follow-up interviews Rest of team: draft summaries of findings	4–8 interviews

Figure 20: Illustrative Field Work Schedule 2

Day 1:	morning	4 team members: Health Facility module	6–8 interviews/ observations
	afternoon	2 team members: Community Introduction module Health Facility team members complete notes and coding 2 team members: Other Providers module	1 group 4–8 interviews
Day 2:	morning	2 team members: Terminology and Taxonomy module 4 team members (2 pairs): Illness Narratives module	1 group 4–6 interviews
	afternoon	4–6 team members (2–3 pairs): Illness Narratives module	4–8 interviews
Day 3:	morning	1–2 team members: Treatment Comparison module 4–6 team members: Health Facility module: Follow-up interviews	2 groups 4–8 interviews

Track the progress of the fieldwork by keeping a daily log of what was done. The Fieldwork Log includes the date and community, the modules implemented, and the numbers of interviews and observations carried out by each team member. The form can have simple columns, such as the following:

FIELDWORK LOG				
<i>Date</i>	<i>Community</i>	<i>Module</i>	<i># Completed</i>	<i>Notes</i>

Analysis

This section suggests ways to organize your analysis and is not meant to provide training on qualitative analysis. It is assumed that the research supervisor is highly skilled in qualitative analysis, and that most or all of the team members also have some experience in it. For the most part, the discussion here focuses on applying those skills to the specific modules and topics in this protocol.

Your overall objective is to deepen your understanding of all the steps in the model of optimal care-seeking in Section 2. Therefore, keep the model in mind as you conduct your analysis discussions. You may want to refer to the discussion of the model to remind yourself of the specific issues involved in each step.

It is important to have daily analysis sessions in the field—a “rolling analysis”—in addition to your site analysis and the final analysis at the end of all data collection. The following provides suggestions how to proceed with each.

Daily Analysis

Each day, try to finish fieldwork early enough to return to base, complete the notes and forms, and discuss the day’s findings. For example, if narratives were conducted, the interviewer and note taker should fill in the field notes, code topics in the narratives, and then complete a Coding Sheet for Computer. Completed notes can be given to the secretary each day to type into a word processor or qualitative data analysis program.

For all interviews, especially the narratives, you will want to code the text that sheds light on particular aspects of the care-seeking process. Qualitative data analysis programs make this particularly easy. Your objective is to have “topic sheets” that contain all quotes from your fieldwork that pertain to a particular key topic. You will want to have, for example, a topic sheet on the barriers to going to the health center. During analysis these sheets will have information at hand to readily identify the major reasons (stated in the community’s own words) why a caregiver would decide not to consult the health center for the child’s illness. These topic sheets will also provide you with a collection of quotes that you can include in your final report.

Suggested Topics to Code

- Recognition of early signs (how the child was the day before becoming ill)
- Definition of illness (symptoms that made caregiver decide the child was ill)
- Definition of “severe”; why caregiver concluded that child was seriously ill
- Why caregiver sought advice at a pharmacy; what happened at the pharmacy
- What prompted caregiver to take child to health facility
- Why caregiver decided to consult a traditional healer
- Why caregiver went to a small private clinic rather than an official health facility
- Why caregiver gave a certain amount of antimalarial
- Perceptions of characteristics of different antimalarials
- Access to health information; preferred means of getting information

Your daily analysis discussions can be organized around the research topics or list of “purposes” at the start of each implementation guide. Generally, your daily discussion will cover:

- What you have learned about the topics covered in the module
- How your findings compare with what you found in other communities
- Emerging issues—topics that may warrant investigation but were not in the original research protocol

If new issues emerge, you may want to alter your fieldwork. You may see a need, for example, to shift emphasis among research topics or add a new question or topic. Perhaps you find that it is more important to talk to some types of people than others. For example, in the Zambia study, mothers fairly consistently reported that they did not seek treatment advice from drug vendors, as they felt that the vendors’ advice might be influenced by a profit motive. Therefore, once we verified from mothers in each new community that vendors played a small role in the treatment process, we considerably shortened the vendor interview. In Kenya, once it was clear that private pharmacies and drug sellers were playing a large role, we decided to explore more fully their role in diagnosis and treatment.

Site Analysis

When you complete work in a site, you will want to step back and think about what is going on in the site as a whole. Again, the model of optimal care-seeking in Section 2 will help you to do this by breaking down a complex process into key steps. In particular, you will want to compare the site to those already covered, identifying similarities as well as differences. It can be especially instructive to look at differences and examine what factors account for them.

As you complete each site, make preliminary summaries of the information gathered to assist you in the final analysis. Figure 21 summarizes recording information and indicates how to prepare the information for analysis.

Final Analysis

Since you have been conducting a rolling analysis in the field and if you have kept up with data entry, you should be set for final analysis after a brief post-fieldwork break. Final analysis should follow as closely on the heels of the fieldwork as possible, so that information is fresh and momentum is maintained. Most or all of the team should participate in at least the first stage of the analysis, when the main conclusions of the research are defined.

Ensure that all your information is organized before beginning the final analysis. This means that:

- 1) All forms have been completed, all notes have been put in final form and typed where appropriate, and everything has been filed for easy retrieval.
- 2) You have printed topic sheets.
- 3) You have a printout of the frequencies for the variables that you have quantified from the Illness Narratives or Health Facility modules. The quantitative data gives you an immediate overall picture for some of the treatment variables, which means you can quickly focus on in-depth examination of the qualitative data to explain patterns.

How can you begin to analyze the complex care-seeking picture? Again, you can organize your discussion around the model of optimal care-seeking (Section 2), discussing each step in the model in sequence.

The overall objective is to see how actual care-seeking practices compare with the ideal. What is working well in the process? Where are the weak points? What factors facilitate ideal case management, and what factors impede it? Are care-seeking patterns consistent among your sites, or are there variations? Where do those variations occur (i.e., ethnic group; type of health facility; urban or rural community)? What factors account for the variations?

Figure 21: Preparing Records from One Site for Analysis

<i>Module</i>	<i>Recording in the Field</i>	<i>Preparation for Analysis</i>
Community Introduction	<ul style="list-style-type: none"> ■ Recording Form for Community Description ■ open notes* on health resources ■ open notes on communication 	<ul style="list-style-type: none"> ■ Community Description Table ■ typed** notes on health resources ■ typed notes on IEC
Illness Narratives	<ul style="list-style-type: none"> ■ verbatim notes ■ Coding Sheet for Computer 	<ul style="list-style-type: none"> ■ topic codes inserted in verbatim notes ■ typed verbatim notes (with topic codes) ■ frequencies for quantitative data ■ site summary
Terminology and Taxonomy	<ul style="list-style-type: none"> ■ taped sessions ■ verbatim notes ■ terminology and taxonomy table 	<ul style="list-style-type: none"> ■ list of illnesses with fever ■ completed Taxonomy Grid ■ typed verbatim notes or transcript ■ site summary
Health Facility	<ul style="list-style-type: none"> ■ recording forms, plus open notes for preconsultation illness histories ■ coding sheets 	<ul style="list-style-type: none"> ■ HF descriptions ■ additional notes typed ■ frequencies for quantitative data ■ site summary
Other Providers	<ul style="list-style-type: none"> ■ open notes for private clinics and doctors, traditional healers, CHWs, and pharmacists and drug vendors. 	<ul style="list-style-type: none"> ■ typed notes ■ site summary for each type of provider
Treatment Comparison	<ul style="list-style-type: none"> ■ Treatment Comparison Form that includes: <ul style="list-style-type: none"> – free lists of treatment options, treatment efficacies, and features of medicines – pile sort of medicines – ranking of medicine preference 	<ul style="list-style-type: none"> ■ site summary
SITE OVERVIEW	(pull together from all of the above)	<ul style="list-style-type: none"> ■ What are the “breakdown points” in the model of optimal care-seeking? ■ What are the key factors that influence whether treatment is close to optimal or poor? ■ What information or issues are emerging that you want to explore more fully as you continue?

* “Open notes” means you do not have to record what happened word for word, although there may be some statements you will want to capture verbatim.

** “Typed” means entered into a word processor or qualitative analysis program.

Organizing Your Research Files

It is essential to organize your field notes, forms, transcripts, and other documents in a way that permits anyone on the team who needs information to find it. The organization system that worked best in the studies in Kenya and Zambia was to keep files by site. Each site file contained a folder for each module conducted in that site. All the files for one site were the same color, with a different color for each site. The color coding helped everyone find the right files and keep them in order.

It is best to use large folders and large standardized labels, for example:

SITE A: COMMUNITY DESCRIPTION

SITE A: NARRATIVES

SITE A: HEALTH FACILITY

After typing notes, the secretary should clip the typed version on top of the original and place in the appropriate file. It is important to have the originals on hand, as you may occasionally need to verify whether the secretary has deciphered handwriting correctly. *It is very important to label each handwritten and typed interview with module, community, date, interviewer and note taker, and ID number.*

Your team will need to refer to these files regularly. To ensure accessibility, the files can be put in a sturdy cardboard box in the middle of the table in your workroom. This low-tech, open-access system really facilitated our work!

Since your discussion is organized around the steps in the model, draw from all modules that shed light on each step. This is better than discussing the results module by module. It is vastly preferable to integrate and synthesize all information that you have on a given topic and have gathered from different methodologies. For example, when discussing recognition of symptoms, you can draw on information from the illness narratives, from the terminology and taxonomy focus groups, and the preconsultation interviews in the Health Facility module. When discussing caregivers' experience in the health center, draw on the illness narratives as well as the interviews and observations from the Health Facility module. You may also have some general information from the Community Introduction module, if it included a general discussion of health resources and perceptions of care. Drawing from all sources and methods helps you triangulate and validate your conclusions.

Presentation of Key Findings

Using quotes. Most of your data is qualitative. Quotes not only support your conclusions, they also bring the information to life and give the reader a feel for the caregiver's perspective. Figures 4–7 are examples of collections of quotes showing local perceptions of important topics. You can also weave a single exemplary quote into your text, or pull together two or three short quotes to substantiate a point. Here are three examples from different sections of the Zambia report:

A major reason caregivers go to the health center is to obtain drugs. If a caregiver knows that the clinic is out of drugs, she will probably decide not to go there for treatment. From a focus group in Chipata/Kakumbi, which had the lowest proportion of children taken to the clinic 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.*

Once at home, caregivers sometimes stop giving the medication because the child vomits it repeatedly. 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.*

More often, caregivers give only as much as is needed to see 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. ♦

Q: Did you give the child all the medication?

A: *No. She was recovering so there was no point in giving the rest. ♦*

Q: Have you continued giving medication?

A: *No, I think she has now recovered. ♦*

Tabulating factors that encourage or discourage key behaviors. It will be very useful to program planners if you synthesize the factors that encourage or discourage a desired behavior. Here are two tables from the Zambia study: Figure 22 on seeking care at the health facility, and Figure 23 on giving the correct dose of CQ.

Figure 22: Factors that Encourage or Discourage Seeking Care at the Health Center

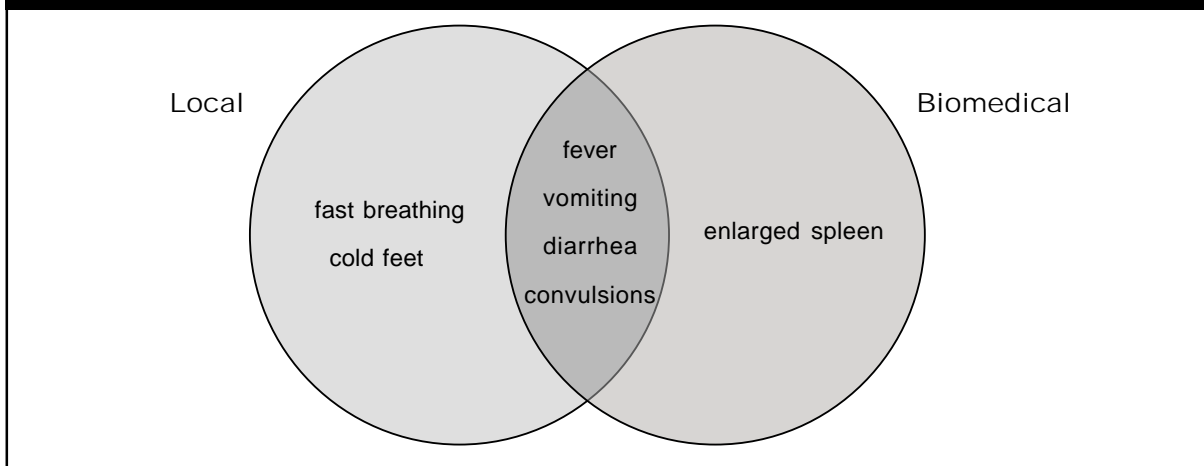
<i>Encourage</i>	<i>Discourage</i>
<ul style="list-style-type: none"> ■ Recognition of a severe or worsening condition ■ Proximity to health center ■ Free service and medication ■ Competence of health provider perceived to be high ■ Provider thoroughly examines child ■ Attitude of staff is friendly and empathetic ■ Confidence that the illness is treatable by modern medicine ■ Drug availability ■ Convenient hours (one health center was open 24 hours) ■ Lack of external constraints such as need for transport, childcare for other children, permission from someone else ■ Child recovered on previous visit 	<ul style="list-style-type: none"> ■ Child's symptoms are abating ■ Treatment available at home, e.g., drugs accessible at home, whether purchased or left over ■ Absence of trained staff at facility or perceived low level of competence of trained staff ■ Lack of drugs, or being prescribed partial doses ■ Lack of effective drugs—when child did not respond to CQ and caregiver knows child will be given CQ again ■ Long travel distances ■ Cost—user fees for children who are under 5 years (St. Joseph's). Some caregivers said they do not go because they cannot afford it, although the staff said they do treat on credit. ■ Long waits/congestion at facilities, leading to long queues and waiting time of over 1 hour ■ Fear of being scolded—for such things as prior treatments given or losing the under-5 clinic card ■ Perceived cause of illness is not biomedical—where witchcraft is suspected, caregivers tend to seek services of a traditional healer rather than of a health center ■ Measles—waiting to see if fever is due to measles (i.e. if rash appears), which many believe should not be treated in the health center

Figure 23: Factors that Encourage or Discourage Giving Correct Dose of Chloroquine

<i>Encourage</i>	<i>Discourage</i>
<ul style="list-style-type: none"> ■ Full course of drugs available and dispensed for caregiver to take home ■ Clear verbal and written instructions on drug administration ■ Ability to interpret packet symbols ■ Ability to read written instructions ■ Breaking of tablet medication in halves and quarters by health providers to facilitate administration of correct dosage at home ■ Having a health provider instruct the caregiver as to the importance of giving a complete course 	<ul style="list-style-type: none"> ■ Incorrect dose or regime prescribed by health provider ■ Untrained staff; incorrect dose given to caregiver ■ Partial doses dispensed to take home; daily return visits for subsequent doses required; inability to purchase if prescribed ■ Unclear verbal and written instructions; inability to interpret packet symbols ■ Poor or hurried staff attitude; discouraging questions from caregivers ■ Lack of emphasis from health provider on importance of completing a course ■ Inability of caregivers to recall instructions ■ Idea that medication is needed only until child shows recovery signs ■ Wanting to save medication for future illness ■ Child vomits the medication and caregiver does not have replacement dose

Venn Diagrams. If you conduct illness taxonomies, you may wish to illustrate the extent to which local concepts of malaria correspond to biomedical definitions of the illness by using a Venn diagram (see Figure 24). In the common area of overlapping circles, you would indicate those symptoms common to both local and biomedical definitions. In the external part of one circle you would list those biomedical symptoms that are not part of local concepts, and in the external portion of the other circle you would indicate any local symptoms that are not part of biomedically defined malaria.

Figure 24: Venn Diagram Showing Local and Biomedical Definitions of Malaria



Quantitative Data

Although the protocol is principally qualitative in nature, ideally you will have quantified some key variables from the illness narratives and the health facility modules. The amount of quantitative data you will have is limited. As with most qualitative studies where the primary aim is to gather in-depth information on a topic, the samples are rather small. For example, you will probably have between 20 and 100 illness narratives. In your report, be careful not to present a lot of data as if this were a quantitative study.

What is appropriate use of quantitative data in this kind of study? There are three basic uses for quantitative data in your report:

- 1) Describing the sample: You will want to present frequencies that describe your sample. For example, Figure 25 is the description of the illness narratives sample from the Kenya study.
- 2) Giving frequencies of key events: You can also report some basic frequencies, primarily to indicate orders of magnitude and support assertions about care-seeking patterns. In this excerpt from the Kenya study, note that the frequencies were rounded to avoid the impression that they are intended as precise population estimates.

Childhood febrile illness is almost always treated first at home: over 90 percent of mothers 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 percent give an antipyretic; over 50 percent give an antimalarial; about 20 percent give an antibiotic; and about 25 percent give at least one other type of drug. Most children treated at home receive 2–3 drugs, but it is not uncommon to give more.

It is not appropriate to have many data tables. One that is appropriate is a table of frequencies on resorts to care that establishes overall patterns. Figure 26 is from the data on Zambia.

These data provide a “frame” that describes some basic features of treatment and provide clear evidence of the overall patterns. For example, it is immediately clear from this table that a great

Figure 25: Characteristics of Illness Narratives Sample in Kenya study (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%

**Figure 26: Resorts to Care
Number and percentages of cases involving a given resort to care in the Zambia study (n=154)**

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

deal of care takes place at home, but at the same time most caregivers do consult a health facility when their young child has a febrile illness. It is also clear that community providers such as the CHW and traditional healer are playing a small role in treating childhood febrile illness. Your qualitative data will allow you to explain these quantitative patterns.

- 3) Treatment sequences: It is very useful to construct treatment sequences from your data. Treatment sequences are analyses that indicate the *sequence* in which treatment was sought from each resort to care. Each narrative will be characterized by a particular sequence. Figure 27 shows the frequency of each of the most common treatment sequences from Zambia. This table shows immediately that the most common care-seeking pattern is initial treatment at home followed by care by a formal provider. At the same time, a sizable proportion of cases (about a quarter) are treated solely at home.

**Figure 27: Sequence of Treatment-seeking
Number and percentages of cases following a given
treatment sequence in the Zambia study**

Sequence	n	%
Home → Clinic	60	39%
Home {end}	41	27%
Clinic {end}	25	16%
Home → Clinic → Clinic*	14	9%
Other sequences	14	9%
Total	154	100%

*This sequence includes those who visited the clinic *twice or more* for the same illness.

Writing the Report

The results of formative research are meant to serve as a basis for making program decisions. The sooner results are available, the better. It is advisable for the team to write a summary report immediately after the fieldwork, while the information is fresh in their minds. Because the members of the team have been discussing and summarizing their findings in the field, they should be able to generate quickly a summary of key findings. These findings can be in the form of bulleted paragraphs organized by major topic and can be produced within a week. The Annex contains the summary report from the Zambia study.

The final report is a complete and formal research report containing a full documentation of the methodology and further details on the findings cited in the summary report. It also contains further analyses, such as tabulations on resorts to care or treatment sequences, and collections of quotes that illustrate key points.⁸ Ordinarily, this final version is prepared by the principal researcher. Figure 28 shows a suggested format for the table of contents of the final research report.

Once again, the model can be used as an organizing tool for reporting your findings regarding the care-seeking process. For example, you will want a section covering recognition of signs, one on home treatment, one on decisions whether to seek care at a health facility and/or consult other providers, and so on.

Keep in mind that the purpose of the research is to provide information for making programmatic decisions. Therefore keep your descriptions of findings focused on practical information. If you have a communication or program design background, state what the implications of the findings are for the intervention, particularly its communication strategy. An example of intervention implications can be found as part of the summary report in the Annex.

In the annex of your report, you can include several narratives that exemplify different situations and bring the data to life in the body of the report.

8. See Baume, C. 2002. *Comparing Care-seeking for Childhood Malaria: Lessons from Zambia and Kenya*. Arlington, Va: SARA Project and BASICS II, for USAID.

Figure 28: Suggested Table of Contents for a Full Research Report

Acronyms**Executive Summary****I. Introduction****Purpose****Malaria in [Country]****Research Design and Methodology**

Research Sites

Methods

II. Terminology and Illness Concepts**III. Treatment of Febrile Illness****Recognition of Illness Symptoms****Treatment for Fever**

Home Treatment

Treatment at Health Facilities

Community Providers

Treatment for Convulsions**Overall Treatment Patterns****IV. Drug Perceptions****V. Target Audiences and Channels of Communication****Annexes**

Annex A: Description of Study Sites

Annex B: Overview of Research Modules

Annex C: Narratives of Care-seeking: Case Examples

Narrative 1: Case Example of...

Narrative 2: Case Example of...

Narrative 3: Case Example of...

Narrative 4: Case Example of...

Narrative 5: Case Example of...

References for the Kenya and Zambia Care-seeking Studies

This Guide grew out of the experience of conducting care-seeking studies in Zambia and Kenya. The research reports were originally available from the BASICS I project and are now published together by BASICS II; the citations are shown below. Research results from the Zambia study were further elaborated in a journal article, also cited below.

Baume, C. 2002. *Comparing Care-seeking for Childhood Malaria: Lesson from Zambia and Kenya*. Arlington, Va.: BASICS II, for USAID.

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.

Baume, C., D. Helitzer, and P. Kachur. 2000. Patterns of Care for Childhood Malaria in Zambia in *Social Science & Medicine*. 51(10):1491–1503.

Annex

Example of Summary Report from Zambia Study

The following is the summary report that was produced shortly after the field research in Zambia. The team spent about a week writing this summary, and then presented results to the Ministry of Health and other interested organizations so that the information would be available as soon as possible to program planners. The summary includes major findings plus implications for an intervention to improve care-seeking for febrile illness.

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.

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.

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

- 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.

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.

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.

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.

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.
-

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. 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 freed to attend to other things that cannot be treated in the home.



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Academy for Educational Development
1825 Connecticut Avenue, NW • Washington, DC 20009 USA
Tel: 202-884-8000 • Fax: 202-884-8447
Website: www.aed.org/sara

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BASIC SUPPORT FOR INSTITUTIONALIZING CHILD SURVIVAL

1600 Wilson Blvd., Suite 300, Arlington, VA 22209 USA
Tel: 703-312-6800 • Fax: 703-312-6900
E-mail: infoctr@basics.org • Website: www.basics.org