

# Trip Report

USDA CSREES Higher Education Challenge Grant

Undergraduate Scholars Program

## ***Holistic Survey of Sanambele***

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#### 4.0 Objectives of Visit:

##### 4.1 Survey of Sanambele specifically regarding malaria prevention methods and recommendations for a village malaria management manual

- Primary information regarding:
  - Assessment of impact of malaria on village
  - Identify primary focus group within women's realm
  - Identify desire for community:
    - Manual
    - Action plan
    - Current steps in treating malaria
- Secondary information regarding:
  - Perception differences regarding women's association members and non-women's association members and frequency that families may contract malaria
  - Availability/store of malaria medicine in Sanambele
  - Some of the possible community associations/resources that have already been created and would potentially collaborate to fight malaria

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- Pictures of villagers to appropriate people
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##### 4.3 Receive and transport completed Women's Association crochet order

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- Children
- Organization of women's and men's realms
- Cultural generalities

#### 5.0 Accomplishments of Objectives:

##### 5.1 Survey of Sanambele specifically regarding malaria prevention methods and recommendations for a village malaria management manual

- Primary information gathered regarding:
  - Assessment of impact of malaria on village

Undeniably, the impact of malaria in Sanambele is severe. According to the women interviewed, inestimable. The burden of malaria was a challenging question that often left them speechless. However, listed below are problems and impacts they were able to identify :

	expense of treatment	field work	inestimable	life	increase poverty	mother can resent child who is frequently sick	effect on pregnant women	can cause future problems for child
11) What is the cost of malaria to Sanambele?	9	25	35	15	6	1	3	3
	disability	don't know	can't go to market	the whole village can be inactive	can make people tired	children are inactive	can hurt the village if somebody misses work	can cause worry for mother who can't afford medicine- "moral load" p88
	6	5	2	1	3	2	1	1

Table 1: identified impacts of malaria on Sanambele

- Identify primary hurdle to overcome regarding treating malaria

Money, of course, is viewed as the primary hurdle in medical treatment of malaria. Although many women stated the steps of treatment to include visiting the health care worker, most also stated that they would wait to seek medical help. Traditional medicine would be used first. Additionally, availability of medicine is an issue. There are two stores of medicine in Sanambele- a community pharmacy and a store with the local midwife. It seems that both stores can run out, especially during the rainy season. If this occurs, villagers must travel, which leads into the third impact of malaria in Sanambele- field work. Sanambele is a subsistence community, which means they are strongly reliant on their field work for daily sustenance. If an adult is required to miss field work because of a child's illness, it impacts the whole community. If a child dies, it impacts the whole community because of potential labor and already-invested supplies lost.

- Identify desire for community:
  - Manual

A manual for the village was thought to be helpful by the majority of those interviewed. Reservations were expressed about the delivery of the information and distribution. It was made clear that the manual should contain many pictures for explanations, and be systematically distributed to individuals.

	yes	not sure	stressed importance of understanding it	good idea but still need money	there is one already
16) Would the community like a manual with pictures of plants, and timelines for medicine, etc?	54	4	9	2	1

Table 2: Response regarding benefit of malaria manual

- Action plan

An action plan was also thought to be a good thing. There is one already in place, that from one woman’s information, has been in existence for a few years. This action plan is waning, however because of “laziness” which can also be translated into a need to continually stress the importance as well as a structured passing of the guard, so to speak. The community appears to be very familiar with structures of associations, and it should not be too difficult rejuvenate or restructure the existing action plan.

	yes	have one that isn't working	is possible...	didn't answer	women would participate
17) Would Sanambele participate in a community action plan (an agreement between key people who would help assist when a family is sick with malaria?)	52	1	4	2	4

Table 3: response regarding a community action plan

- Pooling of resources

Again, there is an association that currently collects funds from head of families (there are six families total in Sanambele). However, availability of money is a challenge, and obviously, this directly translates into a challenge in collecting the fees from the family. It is also possible that the heads of the household are not informing the whole family of the status of the collections, and this would be an area to possibly improve upon.

	not answered because of later change in survey	yes	would need community agreement	there is already something like this
21) Would it work to have a community fund where everybody gave a little bit to buy medicine?	2	39	7	2

Table 4: response regarding support of community fund

- Current steps in treating malaria and possible timelines

Current steps for treating malaria start with traditional plants. Although a few women stated that they would go straight to the health care worker, it was clear by later questioning that they initially gather plants. Plants were stated to be always available, free, and so well known that literally anybody could go to get them, including children. Of those who defined the amount of time they would wait to seek medical treatment based upon days, three days was the predominance. Therefore, it will be

important for the manual to contain sound explanation of the 48 hour window in treating childhood malaria.

Of note was the mentioning of incantations. Incantation as a form of treatment was only mentioned a few times, however, when investigated, it was revealed that the incantations are usually spoken into the plants, therefore, tangible treatment is still being delivered to the patient.

	1 day	2 days	3 days	4 days (if girl)	5 days	1 week
6) At what point is outside help sought for the children?	6	10	15	1	3	3

Table 5: timeline of seeking professional assistance for children with malaria

- Secondary information regarding:
  - Perception differences regarding women’s association members and non-women’s association members and frequency that families may contract malaria

There does appear to be a slight variation in perception of whether or not some families in Sanambele contract malaria at higher incidence than others based upon membership in the Women’s Association. For this to truly be found significant, the numbers should undergo analysis by an approved statistical program.

	no difference (women's association)	no difference (not women's association)	difference (women's association)	difference (not women's association)	don't know (wmns assn)	don't know (not wmns assn)
13) Are there some families in Sanambele that get sick with malaria more often than other families?	9	15	17	15	3	0

Table 6: perceived incidence rate of malaria contraction

## 5.2 Present gifts from Florence

- Pictures of villagers presented to appropriated people

The pictures wrapped by Florence were gifted to the intended as titled. In instance where the individuals were unknown, assistance was received by Bourema Coulibaly.

- Malaria cycle drawing and hand game

These two visual aids were delivered to Keriba to present to village during future visit

- Blood-pressure cuff

The blood pressure cuff was kept, as there were no batteries, and this type is known to be very temperamental, therefore inferior to the one already possessed by the health center

### 5.3 Received and transport completed Women's Association crochet order

- Received completed crochet order from Women's Association

Bags of crocheted goods were delivered to me the last day.

- Viewed potential new crochet styles

I bought a sample of a hat that I believe has great potential with African women in Bozeman.

- Viewed potential new handicraft embroidery

Additionally, two samples of cloth with diverse potential for wear were bought. I suggested possible popular designs such as butterflies and dragonflies for future purchases.

### 5.6 Demonstration of microscope to teachers, health worker, and Health Association key leaders

- non-stained blood slide
- Giemsa stained blood slide

It was exciting to share my experience with microscopes and to actually be able to instruct somebody who had never before viewed a microscope on usage. Unfortunately, there were no thin cover slips for the slides, so the oil immersion technique and demonstration was less than ideal. The cells were still visible, however, and the teachers, health care worker, and health association representatives spent a lot of time viewing them.

### 5.7 Personal education of global community (these items are expounded upon in the daily log, so will just be bulleted here)

- Observation of children
  - Games played
  - Contribution to Sanambele
  - Cooperation with each other
  - General temperament
- Observation of authority figure's interaction with children
  - Mode of reprimand
  - Universal, unbiased care
  - Respect and enjoyment of children in Sanambele
- Observation of cultural taboos
  - Antagonizing animals

- Wasting of food/resources
- Disrupting/frightening children
- Showing knees when sitting
- Observation of subtleties in respecting privacy
  - Not looking at something directly for any length of time
  - Looking away from private actions
  - Retreating to room is sign of need for privacy
- Observation of cultural generalities
  - Rarely touching, and if so, very lightly
  - Importance of bringing gifts (anything) to chiefs and host family
  - Importance of contributing to village
    - Food
    - Knowledge

#### 5.8 Meeting with Dr. Bagayoko

- Recommended course of action for Sanambele to receive bed nets and medicine
  - Need community volunteer:
    - Train to recognize malaria and report cases to Kati (head clinic for Medicines Sans Frontiers)
    - Count pregnant women
    - Count cases of malaria in children under five
    - Count total cases of malaria
  - Course of action for current health worker to initiate reception of free medicine and bed nets (this aspect of the conversation was conducted predominantly in French and Bambara, thus should be expounded upon by Keriba)
    - Consult with Dialakoroba committee first
    - Depending on response, continue working with superiors to work with head clinic in Kati
    - Designate community volunteer for training
- Discussed mode of operation of Medicine for Mali
  - Vision for villages worked in (8 total, and discussing expansion)
    - Training of community health volunteers
    - Work with farmers
    - Microfinance
    - Housing/meals for students who are working in village
  - Importance of informing government of work
    - Necessity for work recognition, and avoids potential of denial of findings
    - Ability to coordinate potential assistance programs in the village
    - Necessity for understanding what has already been done in the village, or what programs are also working in the village
- Recommended course of action for student
  - Discuss findings and recommendations of survey
  - Report stories and current situation in Sanambele
    - Culture
    - Village cooperation
    - Observed need for health worker and collaboration of existing village resources



## 6.0 Recommended course of action for following research and actions

### 6.1 Manual for Sanambele

#### 6.1.1 Visual aids/ formatting

Because of the low literacy rate in Sanambele, it is essential that any educational information be presented with as much visual aid as possible. Examples would be of the malaria cycle, but also pictures of the types of medicines, spoon indicating dosage, pictures of what types of medicines are not as effective, sun rising and setting to indicate days, or position of sun to indicate time of day, and pictures of children in representing crucial stages and accompanying treatments. Bambara writing can be used, as many of the children attend school and would be able to read to their parents. Keeping the fact in mind that the children are likely to be the ones reading to the adults, any instruction should be very simply stated. There should be different sections in the manual, based upon the answers in the table below.

	not answered (due to translation?)	how to fight malaria	bed net use	medicine use/efficacy	plants to use and how	how malaria can be prevented	symptoms of malaria	sanitation
18) What should be in it?	2	11	5	22	1	11	5	5
	food	how to fight mosquitoes	how malaria is transmitted	focus on pregnant women and when to take medicine to prevent miscarriage	doesn't know	how to take care of a sick child	nonspecific advice	what to do when sick
18) What should be in it (cont'd)?	1	9	6	2	3	1	2	2

Table 7: key topics identified for manual

#### 6.1.2 Content

The content should certainly be based upon the feedback given in the table above. Most essential in the manual would be the timeframe to seek treatment, stressing the reason. It appeared, understandable, to be a hard decision for most of the women to actually seek professional help, let alone buy the medicine for their sick children within the 48 hour window. The majority of those interviewed would use plants at the first indication of illness. However, some stated initially in the interview that they would go straight to the doctor, but then later, when asked if they use plants and at what point, all but one stated that they do, and the plants would be gathered and applied at first indication. Clarification in the ways that malaria is and isn't transmitted is very important information. It seemed that the women believed food, especially oily food, as an irritant to somebody who carries

inactive malaria. One woman stated that there is no such thing as AIDS, that really it's all just malaria. Another stated that malaria was transferred by the mother to her infant by breast milk.

### 6.1.2 Distribution

The villagers love pictures, and therefore it would be a useful tool if when the manuals were presented to the compound, a picture could be taken of the families, and inserted on the cover. Additionally, it is essential when these manuals are presented, that each compound is reached. Sanambele has a lot of potential, and certainly a community spirit, however, there appears to be some difficulty in uniting the various associations that have formed to help the village. A more thorough manual could be presented to the healthcare workers in Sanambele. This would include any of the traditional healers, community volunteers, and one for the healthcare center.

### 6.3 Further research

- Food poisoning/ other diseases exist and how to distinguish

One main area of confusion seems to be in differentiating between malaria and other illnesses that many exist. Based upon the strong response that malaria is the main concern, and very few others could be recalled, there is a large possibility that malaria simply has received the most publicity, so to speak. Therefore, research should be conducted of alternative diseases that may simultaneously occur during malaria season. For example, foods were indicated to cause malaria, however, it sounded as if it were cold foods (meaning leftovers) that caused it, in addition to mangos, oily foods, sometimes milk, and shea pulp.

- Nutrition as a preventative

Connected to the role of food instigating malaria, research could also be conducted on how nutrition can help prevent malaria, or at the very least, lesson the physiological response to the parasite. In a village where resources of all means are limited, this could of course pose challenges. Therefore, it will also be important to consider how realistic nutritional improvement would be.

- Types of medicine that exist, cost, and efficacy

A widespread concern of those interviewed was what types of medicine are appropriately indicated for treating malaria. There are two pharmacies in Sanambele, and although personally unverified, they appear to contain different types of medicine for malaria. Therefore, it is easy to understand the confusion. Also, some women indicated that they may only use buy part of the medicine, if there were limited funds available. Proper doses of medicine, costs, and indications would be helpful information for the manual.

- How to train healthcare worker

Sanambele appears to have serious challenges in maintaining a health care worker. This means that they are traveling for treatment, which could contribute to prolonging treatment, extra expense is required in fuel, travel, etc, and more work is lost because of the additional time required. Some may simply not be able to travel the distance for medical care. It is crucial that Sanambele have a health care worker who know the villagers, and is committed to Sanambele. Therefore, research into efficient and sustained methods of training a volunteer from the village should be conducted.

- Médecins Sans Frontières

The most immediate help to Sanambele would be for them to receive the free medicine available by Médecins Sans Frontières. There is a recommended process for this to occur, however, and Sanambele does not appear to have the infrastructure for that at this time. Additionally, it was discovered that the free medicine and treatments are available for children under five years at Sanambele's parent clinic in Dialakoroba. However, because none of those interviewed mentioned this program, it is plausible that the villagers are simply unaware of this valuable resource. Therefore, two courses of action are recommended.

The first is that the availability of the free medicine in Dialakoroba be investigated further. The question remains of the best way for Sanambele to access it. Resulting information of that investigation should be widely dispersed in Sanambele. The second is to research what steps need to be taken so that the medicine can become available in Sanambele. Already known steps include contacting the Dialakoroba clinic and expressing interest in receiving the medicine in Sanambele. Understandably, it is essential that a reliable system with checks and balances be in place to report the number of cases of malaria, timely delivery of the medicine to Sanambele, and storage and distribution of the medicine. If Dialakoroba proves ineffective or is unable to assist for some reason, the main clinic in Kati could be contacted.

If it is necessary to contact Kati, extreme care must be taken. Business in Mali is very different than business in the U.S. Proper respect for positions held, relationships and tact are essential. Gifts (not necessarily extravagant, but appropriate for station), inquiries about family members and loved ones, and flexibility are required. Also, a representative to vouch for the reputation of the one inquiring would be beneficial. If proper care is not taken, Sanambele could be adversely impacted.

## **7.0 Daily log:**

25 June, 2009

The flight from Ghana was interesting, to say the least. Most of the passengers were professional, middle aged African men, and except for a husband, wife and teenage daughter, I was the only white person. Fortunately, there was a woman who spoke English with a Brooklyn accent (she is Malian) and happened to be traveling with her daughter to Mali. She was a wonderful guide and protector through an unfamiliar system. The flight was slightly delayed, and there was concern regarding missing the connection. We landed in another location on our way to Ouagadougou (our scheduled connection), although we did not get off the plane at this point. Then we flew to Ouagadougou where we actually did get off the plane and onto a bus, which drove the full 40 ft to the entrance of the miniscule, antiquated airport.

The airport was smoky and concrete inside. There was a scanning machine, but they were not terribly concerned about my liquids. By this point I desperately had to use the restroom, and finally somebody pointed me upstairs to a very dirty, cramped room with a toilet. No paper, no seat, and no separation between men's and women's. What luxury to be a man and equipped with a standing sprayer! Oh well, one must make do with what one has. After an hour and a half wait (it was scheduled for an hour) we finally boarded the transit bus to make our connection. The plane we boarded was the exact one we had previously de-planed, with the exact same crew! (Don't ask why the layover was an extra half hour, but at least the concern about missing the connection was irrelevant.)

Finally, we arrived in Mali! I exited the plane, and stood for quite a while in the customs line, only to have a kind man ask me if I was Malian. I thought he was just making conversation, so in retort I asked if he thought I looked Malian, only to realize that I was in the wrong line. A great example of the importance of just answering the question, and also of the ingrained diplomacy of Malian culture. Once clearing the Customs, we retrieved our baggage. I was feeling a little nervous at this point because I did not see anybody with a paper with my name, but was re-assured that only very special people were allowed inside the terminal and that my waiting party was likely outside. The baggage was once more screened, and sure enough, after walking down a runway, there was Aissata's cousin holding a sign.

All I can say about the ride to the hotel was that I was in awe. The colors, the dirt, the people, the pollution are overwhelming. I must have looked ridiculous with my mouth literally hanging open, and indeed, swallowed no small portion of diesel fume because of this.

We picked up Aissata from work, and took me to check in. After, I visited Aissata at her house. Or rather, I napped on her couch after a short greeting, until I awoke and we walked to the hotel. The hotel of course, was luxurious by Mali standards, complete with hot water. I tried to contact Florence by Skype but was unable due to her traveling as well. After e-mailing, I decided to have dinner. At the conclusion of my meal, Keriba met me, and we discussed our following day's schedule. He left to his lodging.

26 June, 2009

Keriba and Mr. Moriko came to fetch me this morning to prepare for our journey to Sanambe. The day turned rather complicated as I only possessed a Master Card, and a little amount of US dollars. The conversion at the hotel was very low (400cfa per US dollar) so we attempted to get money from a nearby ATM. Alas, only Visa was accepted. We asked the teller of possible other locations where MC was accepted. At this point, I did not want to use my available cash on the room, so we drove to the location recommended. This location also only accepted Visa. We drove to a very large bank, where unfortunately, only Visa was accepted. Also, a transfer was impossible as they used only Euros. They thought perhaps this other bank would accept MasterCard. The ATM at this location had the MasterCard logo, at which I was greatly relieved and nearly jumping for joy. My celebrating was premature, however, because my card did not work. We inquired at the nearby branch teller, and were informed MasterCard had not been accepted for several months. At this point, it was almost 1PM, 4 hours later than when we first embarked, and we had not accomplished anything.

There was a grocer nearby, so we decided to get a few gifts (tea, sugar, milk) for the village, at least to have accomplished something. Regarding the dilemma of money, it was decided that a moneygram was the only option. Because of the time change, we would have to wait to call my bank in the US, which opened at eight AM. I decided to convert my cash to pay for the hotel, while we waited for the US bank to open. We also spent about an hour while Mr. Moriko tried to change his light bulbs and spark plugs so that his headlights would work. This was necessary because at this point, it was obvious it would be evening by the time he returned from the village. After paying for the hotel and buying a phone card, we returned to Mr. Moriko's hotel, where I was able to call my bank, only to realize they were unable to moneygram. They could only transfer money into accounts, which would take up to 10 days. We called Florence, who to great relief, was able to grasp the situation and re-assured us that she would moneygram within the hour. The time now was nearly three, and it was still necessary to buy water, and a few other provisions. From all of the driving in the city, and diesel inhalation, I had a splitting headache, as I am sure did Keriba. But finally, we had money, and I was able to pay Mr. Moriko.

Because of the additional delay and driving, his price was increased. We bought more phone cards on the way out (the one for 5,000cfa had been used, in addition to some of Keriba's time on his phone, in attempting to obtain money), three boxes of water for Keriba and me, bread, and on the way, Kola nuts for the chiefs. While purchasing the Kola nuts, the car was surrounded by children selling baggies of water, candy, fruit, and many other indefinable items. It is both heartwarming to see their curiosity and sweetness, and heart-wrenching to think of the opportunities they are missing by not being able to attend school.

I am looking forward to the village, if only to escape diesel infused air. My headache is not enough to detract from my continued awe of the scenery along the road. After a bit, I call Florence to consult and further clarify specifics regarding additional actions in the village, i.e. delivery of blood pressure cuff, hand game, demonstration of blood slides and microscope, and collection of handicraft order.

At last, we finally arrive. Keriba is greeted by a cup of water, and our bags are unloaded. Bourema hustles to construct my sleeping arrangements complete with straw mattress and bed net, which arrive with him on the back of his bicycle. It is immediately relaxing to be there, although the diesel seems to permeate even as far as the village, and possibly is replaced by wood smoke.

The village is beautiful. With its rich reds and simplistic construction, it is actually more refined than I had envisioned. Keriba and I spend the rest of the evening in the chairs offered to us until we are chased in doors by a swirling wind that blows grainy dirt across the compound. Dinner, which is Toh and some sort of green slimy sauce (okra-based), is served in my lodging area while the rain beats loudly upon the tin roof. I try not to think too much about what gives the sauce its texture as I taste it, and find that I actually like it! The green, I later discover, comes from leaves that are pounded in a large wooded mortar and pestle. Farah- I am full, tired, and relieved to be there. I fall asleep in my chair, only to wake up later and find that I am alone. It is time to go to bed, and I am glad that I brought my own pillow and a sarong, which serves as my top sheet and cover when I shower.

27 June, 2009

At some unearthly (I am tempted to use the word ungodly, but that might be sacrilege) hour I am awaked by a man outside chanting at his most powerful ability. A half hour later, the call is repeated. What time is it, anyway?! I roll over and continue sleeping, to wake up several hours later.

After more than a year of studying and discussing it, my first real day in Sanambe! I actually slept well, in spite of the asthmatic donkeys Wendy warned me about. It is peaceful, without honking horns, lights cascading in windows, or alarm clocks! Actually, besides the caller (who I learned is announcing morning prayer), there are several roosters eager to cock-a-doodle-do the sun as it rises. Shortly after bathing (a fabulously warm bucket of water splashed behind a concrete wall- but I am glad I brought a towel!) we eat porridge and warm sugar milk. After this we are greeted by several of the women's association and presented with a gift of a chicken. It meekly hangs upside down from Bourema's fist, until he stands up, at which point a visiting rooster starts clucking increasingly pitched warnings. The chicken has opportunity for a few answering clucks, and then it is quiet. I don't realize until an hour later, when I come across the limp chicken why it became so quiet. I suppose I was expecting to see it running around without a head at some point, but Bourema is quite skilled at slaughtering chickens.

After greeting the women and being greeted, we journey into the village, making rounds to the chiefs of the families. The village is a sort of maze, so I am thoroughly discombobulated after the third

greeting. It's a good thing it is not up to me to find the way back to Bourema's compound! The chiefs are very gracious, and we spend only a short time at each one, which allayed my fear that we would be greeting all day. Keriba's gifts of Kola nuts are distributed a little at each home, and are quickly toted inside as we leave.

After returning to the compound, Keriba and I discuss the survey and what information we are trying to gather, as well as the purpose behind specific questions. We also touch base with Bourema. He is aware and supportive of our desire to speak with a variety of women, especially those who are not affiliated with the Women's Association. This takes over a couple hours, but is well worth it, as I feel like we have a united vision. While we are discussing this, I watch a 7 year old boy cut the pieces of chicken, and stuff the legs into the beak. Keriba explains that the chicken parts have been designated for the specific participants in the preparation of the meal. The beak and legs are for the person who cuts the pieces, the back for the cook, and the neck for the person who cut it.

Time is so fluid and it is such a dreamlike state that I'm in that I am completely unable to fathom the time or day to record for our first interview. I am feeling excited, and can't believe I am actually here, about to conduct a village survey in Africa for health. Nervousness and wondering if the questions will be conveyed, or if the questions are pertinent also mix with these feelings. I am scared that they will be stupid, or something that has already been discovered. Keriba informs me that it is Saturday, the 27th and we get started on our first interview!

The interview went extremely well, from my perspective, and also revealed areas that need further discussion. There are nuances in a few questions that need clarified, and Keriba and I discuss our sense of the flow of the survey. We also walked to the health clinic where we met Zachary, the new male health worker. Bourema has an infected finger, which I observe Zachary treating. It is the perfect opportunity to answer some of the questions from the last year! We chat, but find that after our discussion there are far more questions to be answered. We'll return in a couple days.

Since the health worker arrived only two weeks ago, I am curious about the different stages of Bourema's finger. Through Keriba, I ask him what happened, and how he went about getting it healed. Currently, there are layers of thick skin peeling up around it, and it appears quite swollen. In the middle of this, there is an abscess. Apparently, a thorn had become imbedded in it about three weeks ago, but because Bourema's hands are hardened from field work, he did not feel it. A few days later, he noticed it was swollen and painful. In fact, he was waking up in the night from pain. He went to a wise woman to have incantation spoken over it. I asked the cost of this, and he said there was none. When his finger still did not get better, he went to Dialakoroba, and I think even to Bamako, where his finger was cleaned and also the pocket pierced. Besides the work that was lost by his traveling, the cost of this was around 5,000cfa. The thorn squirted out, and Bourema was prescribed antibiotics, which he still is taking. His finger, he says is much much better, and hurts no longer.

His speaking about the incantation excites me because in my fall semester's work, this was a key part of my interviews. I am still curious about how much seeking treatment by incantation may delay medical treatment for the children. This is not a question I will be able to ask myself, due to my outside status. But at the very least, it confirms my belief that the incantation healing exists in Sanambebe. Also, I ask if there is just one person or a few, and whether they are male or female. Bourema tells us there are a few, both male and female. Jokingly, I ask if male or female are better, and he replies that the women are better because they are not as scattered in their theories.

In fact, I notice that a two year old has a twisted rope across his chest, which we are told is also a charm to strengthen his lungs. It occurs to me that this incantation healing is a parallel to healing prayer, and even doctors I know in the US combine prayer with their medical knowledge. The key will be to present the warning symptoms of worsening malaria, and timelines for seeking medicine very specifically in the manual. Also, by knowing that the incantation exists in Sanambele, I will now be equipped to probe if a woman brings it up herself.

It is getting dark by now, and we are served our dinner which is – surprise- chicken! It is absolutely delicious, and I am thrilled to see something I recognize. The only interruption to my enjoyment is that I am wondering how on earth we are going to complete 59 more interviews in the days left. In the first 24 hours we've been here, we've completed one! But after dinner, four women in full African array enter the compound. With only the quarter moon and starts to read and write by, I am grateful for the headlamp Wendy recommended. I cannot see the women's faces, but nonetheless, Keriba and I work our way through four more interviews, finishing at 11:30 PM. I know how tired I feel, and am amazed that these women who have been working in the field since the call of the Imam have stayed awake graciously answering our questions, and patiently waiting for us to complete the previous interviewee. I am especially humbled in light of the fact that their day starts anew in only a few hours. We thank them for their time and input, and let them know that our goal is to compile this information into a manual that will benefit Sanambele, then say goodnight.

28 June, 2009

The morning starts similarly to yesterday, with a bath and breakfast. And miraculously, just as I was wondering if my stash of clothing was going to last, I was asked if there were clothes that needed washing. The villagers seem to have an uncanny ability to meet needs before they are asked. I am wondering if we are going to wait a while after breakfast before continuing the interviews, however, it is not long after finishing that the first woman enters the compound. I barely have time to wonder how she knew to come, before we are settling into the survey.

This survey makes six and it is clear that there are some questions that need further clarification and tweaking. Keriba and I sit to review the survey and we are able to improve it. Specifically, there was one question that was always answered that the community would have to be consulted to determine. My initial thoughts on this were that there was such a sense of group awareness that the individual idea could not be determined until the community at large was consulted. (However, after further exploring this question with Keriba, and also re-wording it, the results in further surveys throughout the week were more consistent with my expectations.)

After this, we journey to the fields to appease my curiosity. Keriba also hopes to possibly learn new techniques. Along the way we encounter two grandmothers planting their own fields who invite me to sow with them. I actually succeeded in planting about six seeds before we continued on to Bourema's fields. Trailing behind us are several children, running at times to keep up, but never coming too close. I am amazed at their endurance and perseverance.

Bourema's fields are impressive, complete with another compound that he informs us he sold several chickens last year to build. There are two dogs in the middle of it that are for guarding his holdings at night. In fact, I learned that Bourema goes every night around one or two AM to watch and make sure that thieves are not attempting to take his cattle. Apparently, neighboring villages have had their stock hustled by men who come from Bamako and sell them for meat. It is at this time of night that he also goes to spray his fields, which is done during the planting time.

After a tour, and rest in the shade we all return together. Bourema is on his bike and on the rack behind him two of his children (one about 21 months, and the other around two years old) sit completely at ease, without any support. I can't help but contrast it to how this same scene would look in America, complete with designer bike seat, helmets, camelbacks and bike trailer.

After lunch, Keriba and I go to call Florence. Along the way, we meet Mr. Kieta, Simon, Suleyman and Mrs. Sissako, who are watching TV! Television! In a village with no electricity! We visit with them for a while and while there, the children pull out a large panel, which I am informed is a solar panel. This is thriftily connected to the battery, and Viola! The World Cup in fuzzy black and white.

I took advantage of this time to call Florence. Specifically, we discussed the status of the survey including the necessity of restructuring some of the questions, amount and variety of women surveyed, and status and the preliminary concerns of the health worker. We outlined questions to ask him especially regarding sustainability of his presence in the village, who brought him here, and accounting of malaria cases, treatments obtained, and deaths. She was also concerned about my health, and was reassured that I am feeling wonderful. It is exciting to be here, and I am very much enjoying the village as an honored guest. Also, Florence stresses the importance of gathering information regarding the plants and recognizing the names used.

After this, we have dinner, and more interviews are conducted before we go to bed. It is another late night.

#### 29 June, 2009

There was a sprinkling of rain today, but not the gushing downpour that is typical for this time of year. The villagers have been concerned because of the lack of rain, but on the other hand, there are also very few mosquitoes and the malaria season has been delayed. There is constant sound of a deep drumbeat throughout the village that is actually the grains being pounded, and sometimes a put-put-put sound that finally I have identified as Hawa Coulibally's mill. I have tried myself to pound some of the grains, but my lack of coordination and inexperience meant that some of the food was splashing out, and quickly the other women took over. One definitely does not waste food.

In the same manner, I tried also to gather water from the well, which consists of dropping a fabric sort of bucket down about 40 feet and rapidly pulling the rope up to quickly dump the water in the bucket before it escapes out the seams in the bottom. Again, my technique for dumping the water was far from efficient, and I was quickly relieved by a seven year old girl. In fact, even the 21 month old in the compound has her own mortar and pestle, and she contributes more than I am able. She also washes clothes and dishes.

The children in general are incredible. I can't help but compare to the children in the cities or even the US, and wonder if there is any way to incorporate their gentleness and ability to be totally functioning contributors to the community, while still possessing a lightheartedness, and sweetness? They do not touch, unless it is to guide me around some mishap (say a fresh road- apple, or puddle of mud), but are a constant presence, sitting quietly even the duration of the interviews. Rarely does one hear them being reprimanded, and almost never do you hear raised voice in the village.

Four more women are interviewed after dinner, and the survey is finally starting to flow. It took about 10 interviews to work out the translation and order kinks, but I am getting both excited and concerned about what we are discovering. Keriba has a very gentle and diplomatic ability to work with the women, and the concern of the separate realms, and the initial concern of the necessity of having a



female interpreter do not appear to exist. The women are being very honest with us. I only wonder if it is enough, if I am asking the right questions, or will I realize that I missed something really important when I am compiling the data? And I feel sad at knowing how beneficial this information will be to Americans and those externally, but wondering if the benefits will be returned to the village. It is so complex.

There is more rain, which interrupted our evening's survey. The women that we were speaking with needed to return home to be with the children, as they would be frightened without their mothers. I, myself, was perhaps wishing for some company in my room as the rain bombarded the tin roof at almost painfully high decibels, until I retrieved the earplugs recommended by Wendy, and at once felt much cozier. Being alone gives me opportunity to reflect upon Bourema's incredible efficiency in orchestrating our interviews. I have the very subtle sense that work is highly expected, and our position as guests is contingent on our fulfilling our promised purpose of our presence in Sanambele. I highly appreciate this, though, as it re-assures me to know he has genuine concern for the community as a whole.

During our conversation today, Florence intuitively asked if we still desired Aissata's presence, and I communicated that Keriba and I believed we were doing nicely, and only if Aissata herself had a purpose in coming would she need to visit. Florence agreed, and will pass the message on to Aissata that she can focus on her work and commitments in Bamako.

My hair was braided yesterday, and it is much cooler, and also a relief to not be fussing with it. However, my scalp quickly started to burn, and upon my donning of my husband's baseball cap, I was presented with a crocheted cap. It seems this act of covering my hair has shifted me a little toward the women's realm, and I realize that without it, it was almost as if I were naked, or more of a man. In fact, I eat with the men, and besides the interviews, do not interact much with the women. A majority of the cause for this, is of course, because the women are working in the field, or cooking, or cleaning. The village is very clean, with little garbage. Of what garbage there is, most of it is food in the form of peels, or bones, which are consumed by the roaming goats, sheep, chickens, and dogs. I was saving my plastic bottles to carry out of the village, but realized today that the villagers very much like these bottles, and were excited to have them for a container. If only as Americans we could integrate more of this resourcefulness!

30 June 2009

Many surveys were conducted today and yesterday. Finally, some progress! I was feeling concerned, but am encouraged now. Also, sometimes we are interviewing two women at a time. Although this makes it harder to differentiate, it is beneficial because the women are able to discuss the questions themselves, and in this way we are gathering more information. For example, we learned today about an organization called SICO, which is a Canadian group. It serves as a type of microfinance, but I later learned the interest rate is 10%! Still, Keriba states that this program is better than getting bank loan, which can be 18%.

We covered a lot of ground in the morning. After this, we called Florence. She and Keriba spoke for a bit, and then she and I spoke. There have been some challenges with signal transmission, and although she tried to call us back, it was necessary for us to call her because she was unable to get through. Florence and I spoke about essentials in the upcoming discussion with the health worker and how to do the giemsa stain for the microscope. There is not alcohol to make the dye from the giemsa

powder, but think I may be able to squeeze some from the alcohol swabs that I brought. I also noticed the health worker had a bottle, which could probably be used if the swabs don't work.

When the call was finished, Keriba and I conducted another interview with a woman who was expecting us, then constructed a survey for the health worker. We visited with him for quite a while, in fact, by the time we left, it was dark and we had been there four hours. During our time I had the opportunity to see him treat two people for malaria- one a young teenage girl and one a mother. Each received two very large, painful injections from fat needles. Both endured this without a peep, although the girl was visible shaking. The first injection was into the vein of the arm, and was Vitamin B. The other injection was above the buttock, which was a red fluid and the actual malaria medicine. I do not know the names, but will research this once back in the US and am able to consult with the professors at DMU. The second patient came shortly before dark. In fact, because there is no light in the clinic, the health worker missed her vein in her arm and had to inject the vitamin B into a vein in her hand. This is even much more painful, and still she did not make a sound.

Keriba and I discover today during our interview with the health worker, which was conducted in French, that he has never looked in a microscope, and bases his malaria diagnosis on symptoms. Specifically, he looks for the fever, painful articulation in extending fingers, and the yellow eyes and headaches. In my opinion, he seems pretty competent at differential diagnoses, and when I prod for more information, his explanations are sound. In fact, from this conversation, Keriba and I have a key moment.

It seems that some of the women had been stating red eyes as a symptom of malaria, but in translation, Keriba was only conveying the yellow eyes. The survey was designed with open ended questions so as to not lead the interviewee, and I have been careful to not provide too much information regarding what answers I was expecting. However, the symptoms being reported to me only included the color yellow for the eyes, and never had I heard red. Yellow eyes are a symptom of advanced stages of malaria. Because I was only hearing that the women were noticing yellow eyes, I wondered if perhaps they were not noticing the malaria until the advanced stage. But while discussing the symptoms with the health worker, and he mentioned the red eyes, which triggered my thought regarding the mothers noticing the eyes only at the advanced stage, Keriba realized that some of the women actually had mentioned red eyes! This enlightenment was huge in furthering our teamwork, as I realized it was important for me to convey what specifics I was especially keying into during the interviews, and the importance of him conveying as much as possible what the women discussed during the survey so that I could either probe more, or gather accurate data. For this alone, the meeting with the health worker was extremely beneficial!

We learned a lot more, which is recorded on tape and also in my notebook, so I won't discuss much more of it here. It is clear that continued investigation into the possibilities of how Sanambebe can sustainably employ a health worker and if there is assistance available by Dialakoroba, as well as investigation into how Sanambebe can receive the free bed nets and medicines are necessary. The health worker is going to contact Dialakoroba by phone tomorrow to further investigate the availability of these resources to Sanambebe.

Another key moment occurred when one woman stated some foods as the cause of malaria. We realized that although the majority of the women recognized mosquitoes as the source of malaria, there also may be confusion regarding perceived additional causes or irritants to malaria. For this reason, we incorporated a question regarding the cause of malaria, and if they answered mosquito we

realized that instead of just hearing the answer we expected and moving on, further probing to see if they believed there to be any other causes should be conducted.

### 1 July 2009

I woke up early today (okay, early for me but not for the village) to call Florence and let her know about the visit with the health worker. We spoke for an hour at least and discussed possibilities of continued training for the worker, as well as what some of the findings have been regarding the survey. I also let her know about the woman I met who does embroidery on cloth. She is not part of the association, but I think that this work would sell in the US. This woman also was very intelligent, and has a lot of potential in the village, specifically, I believe in healthcare capacity. She actually is not from Sanambele, but is here by marriage. After this, I returned for breakfast, and more interviewing. We ended with 31 interviews last night, and are on course.

In the afternoon we walk to a tree where a grandmother is making huge pots. She is naked from the waist up and breasts sway to and fro as she rolls and slaps more clay to the brim of the bowl, smoothing it with her palms, and texturing it with a chewed corn cob. As usual, several children accompany us. While we are interviewing her, a great wind blows, warning us that a heavy rain is about to fall, and we scurry to gather some of her supplies and retreat to a metalworkers (her husband's?) hut. The 15 children huddle with me and Keriba on a bench and around the coals, wet from the rain, as we continue the interview. Amazingly, in the middle of this, Bourema arrives with a tray bearing a tea pot and the two miniature glasses! Luxury.

As the interview concludes, she tells us a story about her daughter, who travelled to Bamako for a c-section. The grandmother says that this was necessary to save her daughter's and grandchild's life, and worth every penny that she borrowed to accomplish this. Also, they present us with a picture of her son, as a gift for Florence. Pictures are rare and treasured in the village, and so this is quite a gift.

The day continues with many more interviews, and it looks like we are actually going to accomplish the unbelievable! It actually looks like the 60 interviews may be in sight!

### 2 July, 2009

Keriba and I hope to conduct 10-12 more interviews today so that tomorrow we will only have about five left. This will put us in a good position to still speak with the local pharmacist and also demonstrate the blood smears and slides to the teachers and health worker tomorrow.

Florence and I speak for maybe 15-20 minutes only, as she is preparing for her trip to the reservation. My telephone has been charged by battery at some unknown location, but I am unable to charge my computer or camera, as actual sockets do not seem to exist. Fortunately, I brought a disposable, refillable camera, which I am able to use.

Something very exciting happened! Today was the day for immunizations! We were able to observe administration of vitamins, shots, and tablets. The mothers swarm around the table where three or four workers administer and record in a large journal and also on a yellow card for the mothers the names and types of immunizations administered.

After working in a US health clinic, it is amazing to see how eager the mothers are to have their children immunized. Even though screaming and crying abounds, the mothers are unfazed, and grateful. They would probably be shocked to know that some mothers cry when their children are given

shots in the US, because they can't stand to see the child hurt, and also others even refuse to immunize their child. I myself have seen this at the clinic where I worked.

But we have work to do, and many more women are interviewed today. Toward the afternoon, we learn from the health worker that there is medicine available at Dialakoroba, but for some reason, it has not reached Sanambele. We also learn that free medicine was promised to the village by somebody requesting their vote, and received. It seems it was this medicine that started the store for the public pharmacy run by Salaki.

3 July 2009

It was a busy day yesterday, and actually, we only have four more interviews to be completed. I am nearly in shock that we have accomplished this, and feel that it has only been by the grace of God. How else could this miraculous timely completion have happened? Even the airlines run delayed!

Indeed, Keriba and I finish our interview, and have time to interview two last women, a grandmother and her daughter, who have come to Bourema's for this purpose. At the close, Bourema takes us to say our farewells and receive our blessing from a few key elders. We still have a little time to try to meet with the pharmacist, but on our way to his compound we are informed that he is not at home. It amazes me how every person's location is known.

On our way to the clinic, we meet with Karim, who is a key person in the Health Association that brought in the new health worker. Karim no longer oversees the pharmacy ordering, but is in possession of old forms. We examine these, but the most useful information that I am able to gather because of language barriers is that they ordered from the Public Pharmacy of Mali. Keriba can better clarify and verify the information on the forms.

We continue on to the health clinic, where we hope to meet the teachers and health worker to demonstrate the slides. Unfortunately (or fortunately) there are no new cases of malaria from which to gather a specimen, and so I use my own blood to make the slide. The method Florence and I discussed for the dye seems to work fine, although it is very slow to dry because of the stifling heat and stillness inside the classroom. Also, there are no thin cover slides, and so actually using the oil immersion and strongest microscope magnification with the stained blood is challenging. Nonetheless, blood cells are evident on the slides. The health worker and teachers are very excited about this, and a lot of time is spent viewing them. While we are watching this, Karim and another man who is also a key person on the health committee, enter the room, and are able to observe the cells.

Keriba and I show them the drawings provided by Florence before leaving MT of the infected cells, and explain that they should not take blood from anybody else, and in fact be very careful when handling the slides, to avoid contamination and possible infection. They already know this, of course, but I don't think a reminder can hurt. It is also very satisfactory and humbling to think that this is something I am able to show them, and that finally, I feel I have provided some small benefit to the village after consuming all week, and being unable to do even the simplest of chores.

Shortly after, we are once again magically informed that a car is coming (how do they know this?!) and we leave the microscope to the teachers to put away, while Karim, the other man, Keriba, the health worker and I sit outside the clinic to conclude our findings. Keriba advises them to approach Dialakoroba for the free medicine, and then we go to Bourema's to say our goodbyes.

There is a scurry of Women's Association members when we arrive, as they are bringing us the order, and showing us the new things. Also, Maimouna has crocheted a hat that I believe would sell VERY well to the African women in Bozeman that I purchase for 2,000cfa. At one point, she jumps on a bike, and returns minutes later out of breath and sweating with samples of the embroidered cloths. They wonder how the American women might wear these, and I demonstrate their versatility as a shawl, scarf, or even skirt. I buy a couple of these for 2,000 and 2,500 cfa also, and recommend stitching butterflies and dragonflies, as I believe many students at MSU would love these.

Miriam presents us with hot, freshly roasted peanuts for our journey back to Bamako, and we drive away, waving to a crowd of women, and shouting goodbyes to the children who are running alongside. I am surprised at my feelings of sadness to say goodbye, profound gratefulness, and sense that I have many new friends.

#### 4 July 2009

Keriba comes to pick me up around 11AM, and we continue on to visit Aissata. We have an appointment with Dr. Bagayoko set for 3PM. He has offered to come to Aissata's to meet us. The meeting is extremely beneficial for all of us, as the work he is doing with Medicine for Mali is parallel to what has been attempted in Sanambele. They started with one village, and now are working in eight villages. Indeed, they are even contemplating expansion. Additionally, we discussed options for Sanambele, and procedures for them to receive the medicine and bed nets that are already available. Keriba's advice was very sound and echoed by Dr. Bagayoko, and should be followed up on next time he, or somebody from the project visits Sanambele. Also, Dr. Bagayoko clarified some of the symptoms discussed by the women that were hard to translate, and we learned that the smooth skin many women stated as a symptom of malaria is actually a symptom of worms! The meeting seems to have been beneficial to all, and it was very good that Keriba was there, since he was able to provide valuable information to Dr. Bagayoko, who helped to clarify some of our findings.

When the meeting is over, I traveled with a cousin of Aissata's to the market. This experience was overwhelming, and I actually was the only white person I saw, although Aissata later told me there are usually several white tourists there. The market was chaos intertwining tables with stacks of beaded goods, fabrics, animal skulls and pelts. The general smell was fetid and woody. I bought a couple of beaded necklaces for 1,000 cfa (the woman I am with was incredible at bargaining!) and also a little outfit for my niece (about 500cfa, I think) and a few wood carvings for gifts that total around 10,000 cfa.

We return by motorbike to Aissata's, where I have dinner, then return to my lodging. I have an early day tomorrow, as I need to be to the airport by 6AM to catch my 8 o'clock flight. Mr. Moriko and Keriba will pick me up at about 5:15AM to go to the airport.

#### 5 July 2009

The streets are actually empty, devoid of the thrum of motorbikes, vehicles, and honking as we drive in the dark to the airport. I am somewhat catching my bearings of the city at this point, and recognize the place where we waited an hour the first day for Mr. Moriko to get his headlights fixed (which I realize now, were never actually fixed, as we are driving only by the light of whatever sparsely distributed streetlights there are). We drop Keriba off at the bus station, and Mr. Moriko and I continue on to the airport.

Sunlight is starting to break as I enter the airport and there is no line at the ticket counter. I am not surprised by this, since by African standards I am very early for an eight o'clock flight that will likely

be delayed at least another 40 minutes. After clearing customs, I go upstairs and consider buying some tea for my wait. After a bit, I notice that there don't seem to be many other passengers waiting, and so I ask the security agents about my flight. They shuttle me through screening (which is really very simple- besides the bottle of water that I forgot about, I don't have to separate my liquids, or take them out of my bag) and down the stairs. At the bottom of the stairs I am once more rushed onto a bus, after verifying my luggage. I find this very odd for a flight that is not scheduled to take off for another hour and a half, but go along with it. Then I find out the plane I am headed toward was actually scheduled for 6:30, and has been delayed. This makes me a little nervous, as I have visions of being on the wrong flight and ending up in Liberia, but am assured that this plane is going to Abidjan. But just to make sure, I ask two more people checking passports at the bottom of the plane, and also the flight attendants. The flight attendants tell me that indeed, this was the only flight for the day, and that it has been delayed, but was scheduled to leave at 6:30! Such irony!

Once in Abidjan, I have an eight hour layover, but this is actually quite pleasant since I am able to work on my report, and also just enjoy a few hours of my own time. Finally, it is time for me to board for Ghana, and once more I go through clearance. Once through clearance, I sit for a bit at what I think is my gate (there are many international people there) but then notice that the flight crew is mostly white, and realize that I am at the wrong location! So I move on to the gate that contains mostly African men, and know that this is the right spot. Once more, the flight is delayed about an hour, but finally, I am on board, and relieved that it is actually going to Accra. After a relatively short flight, we land and a handful of the passengers exit. Nobody near me exits, and I think that this must be one more of these unscheduled stops before Accra. An attendant walks by with a clicker, and I realize that I better verify our location. It is a good thing I did because we are actually in Accra!

There was another international flight that arrived at the same time as ours, and the airport baggage claim is VERY chaotic. Many of them are European (some sort of tourist group?) and I have been bunched with them inadvertently. Their guide, who is Ghanaian keeps trying to herd me with them, and gets a little frustrated when I don't comply, until I explain that I am my own group, and not part of his. Finally, I exit the building, and find Kwabena waiting with his mother and Aunties. They have been there an hour, but are un-phased, and I am very glad to be here.

## 8.0 Visit Specific Appendices

### 8.1 Sanambele Survey

#### 8.1.1. Preliminary Survey

#### **Sanambele Survey Questions:**

##### *Differential Diagnosis:*

- 1) What are the community top health concerns at this time?
- 2) What are symptoms of malaria that specifically let you know the child is ill (i.e. eye color, urine, way the fever starts, etc)?
- 3) What other diseases exist during malaria season?
- 4) What are their symptoms and how are they different than malaria?

*Treatment for sick children in general:*

- 5) What is currently done for children with malaria?
- 6) At what point is outside help sought for the children?
- 7) Who cares for the sick children?
- 8) What are the important things to do for a child who has malaria?
- 9) Is there some sort of community response to help the families when a child is sick with malaria (to help get medicine, care for the crops, cook, etc?)

*Prevention/Community preparedness:*

- 10) How is malaria prevented (what exactly do the villagers do to prevent it)?
- 11) What is the cost of malaria to Sanambele?
- 12) Does this include the loss of work in the fields, and other costs?
- 13) Are there some families in Sanambele that get sick with malaria more often than other families?
- 14) What is the most important aspect of malaria that should be addressed first?
- 15) What government help is available?
- 16) Would the community like a manual with pictures of plants, and timelines for medicine, etc?
- 17) Would Sanambele participate in a community action plan (an agreement between key people who would help assist when a family is sick with malaria)?
- 18) If so, what is important to include in it?

*Commercial medicine:*

- 19) Where can you get pharmaceutical medicine?
- 20) How do you pay for this?
- 21) Is there somebody that would keep these medicines on hand?
- 22) When would you want to purchase the medicine?
- 23) Who would have it on hand?
- 24) Would that person give it to others in Sanambele, or would that be for their own family?
- 25) Are any medicines kept in Sanambele?
- 26) How is malaria medicine distributed in Sanambele?

*Traditional medicine/plants:*

- 27) Who will take care of the children while the mother gets the plants?
- 28) Are the plants kept available?
- 29) When do you gather the plants?
- 30) Is the growing season the same as the malaria season?
- 31) How hard is it to get the plants during the malaria season?
- 32) When do you start receiving these medications?

*Professional help:*

- 33) How far must you go for health care workers to treat malaria?

### 8.1.2 Modified Survey

#### **Sanambele Survey Questions:**

*Differential Diagnosis:*

- 1) What are the community top health concerns at this time?

- 2) What are symptoms of malaria that specifically let you know the child is ill (i.e. eye color, urine, way the fever starts, etc)?
- 3) What other diseases exist during malaria season?
- 4) What are their symptoms and how are they different than malaria?
- 5) Do you know any children who died last year from malaria?

*Treatment for sick children in general:*

- ~~6) What is currently done for children with malaria?~~
  - a. What are the steps to care for a child with malaria?
- 7) At what point is outside help sought for the children?
- 8) Who cares for the sick children?
- ~~9) What are the important things to do for a child who has malaria?~~
- 10) Is there some sort of community response to help the families when a child is sick with malaria (to help get medicine, care for the crops, cook, etc?)

*Prevention/Community preparedness:*

- 11) How is malaria prevented (what exactly do the villagers do to prevent it)?
  - a. What is Sanambele doing right now to prevent malaria?
- 12) What is the cost of malaria to Sanambele?
- ~~13) Does this include the loss of work in the fields, and other costs?~~
- 14) Are there some families in Sanambele that get sick with malaria more often than other families?
- ~~15) What is the most important aspect of malaria that should be addressed first?~~
  - a. What does Sanambele need to do to stop malaria in the future?
- ~~16) What government help is available?~~
  - a. What outside (NGO or Government) help is available?
- 17) Would the community like a manual with pictures of plants, and timelines for medicine, etc?
- 18) What should be in it?
- 19) Would Sanambele participate in a community action plan (an agreement between key people who would help assist when a family is sick with malaria)?
- 20) What ways do they need help? What ways could the community come together to help each other? If so, what is important to include in it?

*Commercial medicine:*

- 21) Where can you get pharmaceutical medicine?
- ~~22) How do you pay for this?~~
  - a. What do you do if you don't have money?
- ~~23) Is there somebody that would keep these medicines on hand?~~
- 24) Would it work to have a community fund where everybody gave a little bit to buy medicine?
- 25) How much should each family give?
- 26) When would you want to purchase the medicine?
- 27) Who would have it on hand?
- ~~28) Would that person give it to others in Sanambele, or would that be for their own family?~~
- ~~29) How is malaria medicine distributed in Sanambele?~~
- 30) How would they distribute it?
- 31) Are any medicines kept in Sanambele?
  - a. Are there medicines in Sanambele now?

*Traditional medicine/plants:*

- 32) Who gathers the plants? Which plants



- 33) Who will take care of the children while the mother gets the plants?
- ~~34) Are the plants kept available?~~
- ~~35) When do you gather the plants?~~
- 36) What are the signs that let you know you need to gather plants?
- ~~37) Is the growing season the same as the malaria season?~~
- ~~38) How hard is it to get the plants during the malaria season?~~
- ~~39) When do you start receiving these medications?~~

*Professional help:*

- 40) How far must you go for health care workers to treat malaria?

## 8.2 Health Worker Interview Instrument

### Health Worker Interview Instrument:

1. Why did you choose this field?
2. How did you come to be in Sanambele?
3. What is your desire for being here?
4. How many visits a day would you need to make your financial goal?
5. Where were you before this?
6. Who do you report to now?
7. Is there a government organization that you report any information to?
8. What are your responsibilities?
9. Where would you go for training?
10. Would you go to other villages to work (Dialakoroba)?
11. How do you know somebody has malaria and not something else?
12. Could the diseases be anything else?
13. Where do you get the medications for malaria?
14. Do you know of any government programs that would help?
15. Do you work with the vaccination programs?
16. At what point do you think the village comes to you for help?
17. What is your relationship with the midwife?
18. Would you like to have control of the medications?
19. What do you think is the primary health concern of Sanambele?
20. What sickness have you seen the most of?
21. Do you know of Plan Mali?
22. How many malaria cases have you diagnosed?
23. Would the Dialakoroba center help with your salary problem?
24. Is a manual a good idea?
25. What should be in it?
26. Would you be willing to help with the manual?
27. Do you know about the microscope in the school?
28. How far is your family?
29. Do you know about the bed nets that were given in the village?

## 9.0 Professional Items Given/Received and Demonstrations

### 9.1 Demonstration of blood smear and giemsa stain:

Using the giemsa stain and oil send by Florence, a blood smear was made on a slide presented with the microscope during the previous visit. Because there were not the thin slip covers, another thick glass slide was used on the stained slide. This method was acceptable, although far from ideal, since the slide was too close to the lens to really be advantageous with the use of oil. It is highly recommended that thin covers be presented to Sanambele during future visits. An unstained slide was also demonstrated to the health worker, teachers, and two of the Health Association leaders (Karim, and another man whom I did not catch the name of). The health worker had never viewed anything under a microscope before and was excited to see the cells of blood. Also, we presented the drawings sent by Florence, and showed what the stained smear would look like if there actually was malaria present. This will be a very good tool for the village if the proper technique for making slides, and equipment are available.

### 9.2 Malaria posters given to Keriba for presentation to village on successive visit

The poster with the diagram in English was given to Keriba, as well as the hand game created by Dr. Dunkel's class. These can be presented to Sanambele in the upcoming September visit, as Dr. Dunkel will be present to properly explain them.

### 9.3 Collection of Handicraft Order and potential new items

Two black plastic bags full of crocheted chemises and jewelry were collected and brought to the U.S. for that Handicraft's Association. Additionally, samples of embroidered cloths and a new style of crocheted hat were brought, as potential for increasing supply by the Association.