

*This document contains notes from interviews conducted by Anthony Langat in Kenya's western Siaya county in March of 2015. Mr. Langat conducted these interviews to gather information about a deworming program, supported by the Deworm the World Initiative, for an article he co-authored with Jacob Kushner. GiveWell compiled and edited the notes for clarity and to anonymize the subjects; notes from interviews with some program officials were excluded as they couldn't be easily anonymized.*

### **Man, district education officer**

#### **I will start by asking you about the challenges that teachers face in undertaking the deworming of children.**

The main challenge now is the availability of water and food to eat before the drugs are administered to avoid side effects, especially on this bilharzias drug. We are in a dry spell right now, and water is not easy to come by as most of our taps have run dry.

#### **So what are you doing at the district education office to avert that?**

We have advised the head teachers to speak to members of the school management committees to ensure that they at least get something. Whatever they can afford, even if it's potatoes or maize flour for preparing porridge, will help prevent side effects. They should pool their resources together to ensure that the children can eat. They should eat thirty minutes before they are given the drug, and likewise they should drink water. Schools were hoping to get a supplier of clean water, but that is not easy to come by.

#### **Has there been an increase in demand by the community for the deworming since it started?**

Last year there was no deworming in the schools, and some of the parents were asking us if it will be repeated. We kept on advising them that deworming is a continuous process and that they should visit the nearest facility, but some of them are a bit lax. They feel that it is easier when deworming is done to a pool of pupils at one particular place.

#### **Was it communicated to you why it didn't happen last year?**

We were informed that there were some challenges. Initially we went for training, we were briefed and even given t-shirts but then all of a sudden it was called off.

#### **What would you say is the role of the teachers in this program?**

Teachers are usually very well trusted in this society. Whatever the teacher says or tells the children, it is usually taken as gospel truth. So when teachers tell people that their children will be dewormed, parents rarely doubt it is a good idea. By operating in schools we are able to reach a very large number of children because

we have easy access to the age group that needs to be dewormed. And since teachers are opinion leaders in the community, involving them helps a great deal.

**You had spoken in the car about religious groups and that you hope they won't be a problem. Do you fear that some religious groups might deny their children the drugs?**

There are some sects that might not want their children to be dewormed, but we have never seen this happen.

**Have different religious groups been involved in creating awareness in the community for this particular program?**

Yes.

**How exactly? In what capacities?**

The district education office gets in touch with stakeholders. For example, we have stakeholder days whereby we inform members of the community of the importance of their contribution to education in the sub-county. We also tell them about many other things, including hand washing, deworming, the importance of stopping children from going to beaches, early marriages. Generally, we inform them about the benefits of education to their children, and telling them how they can participate in the deworming is always part of that. We always say "kwa afya na elimu bora, tuangamize minyoo," which means "for health and quality education, let's eradicate worms." We also tell them how children contract worms. We do it in collaboration with the members of the public. We have worked as a team so far.

**What are the other challenges that you face?**

One challenge is inadequate staff. Another challenge is transportation because we have to move from one place to another to monitor the deworming, which may not be easy given the vehicles we have. Another one is that children sometimes arrive late and we still have to make sure that we give them the right drug.

**How do you get teachers to reach the non-enrolled children?**

We have program officers who are in charge of ECDs, so regardless of whether a child is in school or not, these people know where they are. The officers make sure to make it clear where to go and how to go about getting dewormed. In most cases children are told to go to the nearest place that deworming is happening. They are sometimes among the very first people dewormed because some of them might have covered quite a distance and they need more time to get home.

**How many non-enrolled children are in the sub-county?**

Non-enrolled children could make up 20 to 25 percent of all children in the sub-county. Many of them you will find in churches. The past two Sundays I was given a

chance to say something in church, and I told the churchgoers that it is very important that the children receive this kind of treatment.

**Tell me a story about a child who was dewormed the last time the program was undertaken. It can be a good story or even a story of side effects after the deworming.**

Generally in this sub-county we have not had any serious side effects, but I recall one child who went dizzy and was taken to a nearby health center. I can't remember which school the child attended, but at that particular school the children had not been given anything to eat before the PZQ drug was administered. The child was attended to and recovered.

**Last year there wasn't any deworming done, and I also understand that your current funding will only last until 2016. Do you wish that it would continue beyond 2016, and if so why do you want the program to continue?**

Our school district covers a large area with many schools and many children who experience worm infections and reinfections. I really hope that we continue deworming these children and educating people on how to prevent these attacks. Deworming should not stop.

**Do you think there is a gap in information, especially with regards to informing the children and their parents about worm prevention?**

Yes there is an information gap, but existing attitudes make the problem more complex than simply providing people more information. The traditional approach to life here is still strong. Some people think that water is water so long as it is lake water and that fruit is fruit so long as nobody has touched it. They only see that their hands are dirty when they see charcoal on them, and even then they will just rub off the charcoal and continue eating. So there is a lot of work which still needs to be done to shift people away from this traditional approach, and in my opinion this work should involve continuing to expose them to things like worms and other health concerns.

**Do you think that most parents are aware that their children are being dewormed?**

I met some parents who talked about the worms, and one even talked about the symptoms and how embarrassing they were. The worms even made some of the children run away from school scratching their bottoms. And the parents say that after the deworming the children were comfortable. Tomorrow people are set to let their children be dewormed because they know the benefits of deworming. They know it is going to help their children.

**Do you have a figure for the number of schools in Rarieda sub-county?**

There are 120 registered schools, but of course there are some schools which are not registered. There are ten or so unregistered schools, but we have talked to them.

### **Primary School Head Teacher**

#### **How many students do you have in your school?**

We have 592 students in primary school and 127 in ECD, which is a total of 719.

#### **At what time did you start the deworming?**

We started at around nine in the morning.

#### **Have you done deworming here before?**

Yes we have done it before, about three years ago.

#### **And what changes did you see?**

There were changes. There were changes related to academics and there was more active participation in class. We realized that children's performance and health both improved. We also noted that the incidence of skin diseases like rashes and ringworm decreased.

#### **What about in terms of school enrollment? Did more children come to this school because of deworming?**

We have seen an increase in enrollment in our ECD centers.

#### **What of class attendance? Were there changes in that?**

Yes because children no longer became sick constantly. Absenteeism is now very minimal, and children are more attentive in class.

#### **Do you have records of attendance before and after deworming?**

Yes. Our enrollment records show that as performance increased, more parents brought their children to our school. So it is more of a correlation; when we deworm, the performance improves and due to good performance more parents bring their children here. But lately enrollment has dropped and that is because more schools have been started closer to children's homes. For instance, there is a school that has been started here in Owimbi.

#### **Did you have any problems with some children who couldn't take the pills because of their parents' religion?**

Yes, I had some in class five who said that the drug would bring about infertility. I took the drug personally to demonstrate that it wouldn't. But even yesterday I heard

some children complaining and saying that they could not take the deworming pills. I do not know how the parents were connecting the pills to infertility.

**And do you attribute that to the parents?**

Yes, it is possible that the parents were confusing deworming pills with the tetanus vaccine that the Catholic Church has been opposed to.

**Is that the only problem? I have heard of children getting dizzy for hours last time they took the drug and that children had vowed not to take the drug this time around. Was this the case here?**

Yes, in 2013 when we were administering the drugs, in particular the PZQ, we had about six children faint. We informed those who were in charge, and they took care of them. This time around, I let people know we were administering only the Albendazole for the common worms.

**Was there any other challenge?**

I did not see parents bringing non-enrolled children here despite our having put posters up at the gate and at the shopping centers.

**How many of the non-enrolled have you dewormed today?**

Just twelve, but I know there are more. I hope they will come in the afternoon. Maybe they are planting since it is the planting season here.

**So did all 719 of your students take the drugs?**

Not all. Some refused while others were absent.

**Man, primary school teacher**

**Are you going to be administering the pills tomorrow, and, if so, is this the first time you are doing it?**

Yes I will be administering the pills, but it is not the first time I am doing it. This is the second time.

**Do you think deworming is helping the children?**

We were not well sensitized before the last deworming in 2013. If we had been better sensitized then it would have been easier for us to interview the parents and the children after the deworming to see the changes that took place after the drugs had been administered. The recent sensitization was done hurriedly and few teachers attended the seminar. Because I was one of the teachers who attended the seminar, I briefed the other teachers afterward. However, time was short, and when the drugs were administered people were very negative about them because they

were not told about the reaction. The benefits of this drug include that it will help minimize bilharzias attacks on children, bearing in mind that we live along the lake region so we are prone to bilharzia.

**What was the reaction of the children?**

The drugs reacted with most people's bodies. People fell sick, others fainted, and a very few others could not even come to school the following day because the drug was still reacting. Even for some of the teachers it really reacted. We were told people with more intense infections would have more intense reactions.

**Were there changes in class attendance after the 2013 administering of the drug?**

Yes, there were changes because before that there were many complaints from children.

**Would you attribute these complaints of stomachaches to infestation of worms in the children?**

Yeah that is what I attribute it to because those who reacted more felt really better later. Things were a bit more normal for those who didn't have very serious reactions.

**At that time, what was the population of your class?**

In 2013 I had a class of 65.

**How many of your students could miss class on a given day before the deworming if any?**

I represent a candidate class and candidate class attendance is usually good, but I could see that in other classes including class seven downwards the attendance was increasing.

**In the candidate class that you represent, weren't there cases of students missing class not because they want to but due to illness?**

There were, but after the deworming there weren't.

**Is illness the primary reason for absenteeism in this school?**

I am uncertain if it is really the primary cause because we did not follow up until now. If we had followed up, we could have easily done a comparison and kept records of the data, but since there was no follow up it is not easy to remember, even though the absenteeism was minimal.

**How about the class energy before and after the administering of the drug, did you notice any change?**

There was a change. Bilharzias and worms cause a lot of problems for the digestive system and also for other organs like the liver and the lungs. After the deworming there were very minimal problems. Even those who were cleaning the latrines said that before the deworming there were cases of bloody stools on the pit latrines but that afterward there were no such cases.

**Are children afraid of the drug because of the dizziness and fainting that occurred last time?**

Yes. In fact, about 80 per cent of the children if they are told that they are taking drugs tomorrow will not even come to school.

**So what is the situation now? They do not know that they are being dewormed tomorrow?**

They have been told that they are going to take drugs, but because of these ball games, they may not appreciate that this is happening tomorrow. If they know, you can tell from their reaction. There was even a time that I told a certain class that on Wednesday we were going to take the PZQ and they said: "What, PZQ? Over my dead body, I will not take that drug again. The way it reacted with me? No, no, no, I will not take it." The reason why they have that negativity is that there was no proper teaching prior to administering that drug. They were not told how it was going to react and what benefits it would have. It is only us who could see the change. They cannot notice easily.

**Was food provided at that time?**

For food they were given porridge. Since it is a big population and the teacher ratio was a bit low, you find that some children did not get enough porridge. They took the drug after around an hour when their stomachs were already empty. Some were taking porridge with the drug.

**How many teachers are here?**

There are nineteen teachers with a student population of 800.

**Were parents aware of the deworming?**

Parents were aware.

**What about this time around? Would you say that the parents have been informed?**

I don't know if they are aware this time because I have also been attending so many seminars. Sometimes the teachers inform the parents, but I think the parents are aware because the children were told to go and tell them.

**Do you think parents fear the drug?**

No, parents do not fear it, but children fear taking it because of the way it reacted with them.

**Being a teacher, are you comfortable administering drugs?**

Yes, I am comfortable because the advantages of taking it outweigh the disadvantages. I don't fear administering it. I will do it.

**Do you think it is distracting you from doing your core duty as a teacher?**

No, it is not distracting me in any way because this is a nationwide activity and therefore I am not the only one who will lose a lesson, and the drug is going to increase concentration in class.

**Are there other NGOs doing health related programs in the region?**

There was an NGO called ARMUT that came to put up a facility, and they said they were focused on stopping diarrhea.

**Man, teacher**

**Tell me about what you did today.**

I was trained to administer the pills to the children and also to take the records. Before the deworming we filled in the names of the enrolled students as is in the register and put them in Form E. After doing that we had to verify that we had everything correct. Then after that we also had to consult the people in charge of coordinating the whole activity. When we had all the information they told us we could start, and we started together.

We were monitoring the children during the deworming. We gave them the pills and ensured that they swallowed because some can put it in their mouth and then spit it out later.

We didn't have a case of spitting or a case of a child misusing the drug because we created that awareness with the children.

**Do you think deworming these children is helping in any way?**

Yes, I've seen what we told them in that awareness class, that some of them were not performing because they had worms. We told them the signs, that someone with worms will feel their anus itching, lose their appetite... etc. When we asked how many of them had their anuses itching, a number of them raised their hands. Then we told them that this is the problem that we want to solve. We told them that after deworming they would find that a mathematics problem that had been bothering them would no longer be a problem.

**After administering the drug in 2012 did you see any improvement in enrollment?**



We saw that in the area that the school is influencing, water is a problem. During the rainy season water may be there, but not everybody necessarily has access to clean water. I think that the attendance continued to increase; though many are leaving, many are also coming.

**Do you have cases of absenteeism due to illness in your class?**

Yes, right now given the weather conditions that have gone on for a long time there are some children who have been regularly absent due to illness. Since it is a dry season, I can't attribute that illness to malaria, but it could be caused by worms and bilharzias.

**Was there a change in energy in class after the last deworming exercise?**

Yes there was. As teachers one thing that we do is observe the entry behavior of a child. We saw them come in, and they were energized after the deworming. After that we didn't have many cases of stomachache for some time.

**Do you think parents are aware that deworming was taking place today?**

That is what we were asking ourselves. Some parents came to the deworming, especially parents whose children are in ECDs. Awareness was there; even on the radio you could hear people talking of deworming in Busia and Siaya Counties. So deworming has been in the vernacular. Every now and then after news coverage radio stations have been talking about it and reminding people to make sure they go to their nearby primary school for deworming, so we feel that the information was there.

**Did all the parents like it?**

No, some of them did but not all. Our school is sponsored by the Catholic Church, and the population around here is mostly Catholic. For the Catholics it was being preached in church that this drug has some sort of sterilizing effect on them, so this idea was in their minds. Parents can deter a child from coming to school on the deworming day. What parents do not know is that we have become clever and told the teachers to stock some pills. That way if the children who skipped the deworming come the next day, we can talk to them and encourage them to take the pills because as teachers we know the repercussions of somebody not being dewormed.

**Do you feel that the task of giving pills to these students is a distraction from your work as a trained teacher?**

No, I just see synergies as a teacher delivering deworming pills and also I believe it is utilizing the available resources in a better way. If the deworming were administered by medics, many medics would have to be hired because there are so many primary schools compared to the number of health centers that we have in this area. Even health facilities like the Pap Koderu are understaffed, so if they were

to do it, the project would take a long time. As teachers we also deal with child psychology, so when a child comes into class I can tell that he has a problem and then go deeper to find out more. Is it because the child has a problem at home? Is she sick? I have to know, and then case-by-case we can give referrals to health facilities. I don't feel interrupted or disturbed by being given extra work. I do not need anything from it; it is just that duty calls, and we need to teach children who are fit.

**Was it easy?**

It was not very easy. The training equipped us, and we were given the literature, so we read it and knew the benefits. We had gloves so that we were keen on administering. So the children were seeing us, and they were happy because the person administering the pills was the person they were comfortable with. If you took them to the hospital most would have refused the pills. But here I tell them: "You see how I am healthy? It is because I do not have those things that you have. I am taking the pill so that I can be better and you should too."

**Are there any other health interventions that have come to your school in the past few months or in the past one year?**

There are partners that the school is working with like Rafiki wa Maendeleo, an NGO that is located near here. They were here some weeks ago and came with pads for girls. On malaria day a team from Public Health also came here and gave talks to students as they were spreading awareness around the county.

**Man, primary school head teacher**

**Has deworming been carried out in this school before?**

Yes, it has. It was done once in the year 2013.

**Do you think children stay in school more after being dewormed?**

Certainly because their number is ever constant. They are always in class and very healthy.

**Is there any difference between the year the children were dewormed and when they weren't?**

Yes, the children's achievement changed. In 2013 we had a mean score of about 272, and then in 2014 after the deworming and the improvement in children's health we reached 285 which is indeed quite an improvement.

**Has the deworming program affected enrollment? Have children enrolled because they want to be dewormed?**

In fact, children like it, and parents are very positive about it.

**Have you had parents coming to you and telling you the same?**

Yes, I have. Even tomorrow you will see parents here.

**Tell me how prepared you are in terms of what you have had to do in preparation for the deworming day.**

The first thing we did was train the teachers for the deworming exercise and the registration. Then we informed the students and the parents about the deworming. Then we prepared the necessary materials, including both drugs and equipment.

**When you dewormed in 2013, was there any eventuality or any unusual happening that you had not planned for?**

Not really. The few complaints that we received were about a bit of dizziness, usually related to the Praziquantel (PZQ). Other than that things were okay.

**Had you given them food before administering the PZQ?**

Yes, we had given them porridge.

**What is the student population of your school?**

Currently we have about 800 students and 84 from the early childhood side. We also have adjacent standalone ECD School which will be coming here tomorrow and are about 30 in number.

**Do you expect to receive some non-enrolled students?**

Yes, we are expecting them also.

**Did you receive non-enrolled students during the last deworming program?**

Yes, in 2013 we received 69 non-enrolled students and about 20 adults.

**What number of non-enrolled students are you expecting this time around?**

I can't gauge the number, but we expect quite a substantial number.

**Are the drugs you have sufficient for your group, the ECD schools, and the non-enrolled?**

Yes, I believe so because we were given extra tablets to cater to any new person.

**Were the drugs you were given in boxes?**

No they were in tins. For Albendazole, which is the drug for the common worms, we were given six tins, and for the Praziquantel we have two tins.

**Are all the students treated for common worms also treated for bilharzias?**

No, not all of them. The age bracket for Albendazole begins at two years and for Praziquantel it begins at six. However, some of the students decline.

**Have you had such cases?**

Yes, we had such cases last year.

**How many cases of students declining did you have?**

We had about ten cases.

**What was the reason they gave for declining?**

Some declined because of their parents and the denomination factor, some kind of cult within their church that would not allow them to take the drug.

**What is the name of the church?**

There is one called Roho Israel that has members from around here. Some parents also tried to demonize Praziquantel (PZQ) unfairly because of the dizziness. There is fear and fright that children may collapse and fall down.

**Do you still have students in your school whose parents go to this church?**

Yes, we do.

**And do you expect that to reduce the number of students who take the drug tomorrow?**

I am expecting an X somewhere on the form because we can't force the child to take the drug, and if they are absent we put a zero on the form.

**Do these parents tell their children not to take the PZQ only or both drugs?**

They tell them not to take either drug.

**Did you escalate the same to the DEO's or the people concerned?**

Yes, we shared that with the authorities. We also called the parents and we told them about the benefits of deworming because what they really need is sensitization that the drug does not harm. People do not believe in change.

**And after that what was the response of the parents?**

Some agreed, but others were still adamant.

**Have you had parents enrolling their children here because of deworming?**

Not really. This is a school of choice for many. I haven't heard anyone say that they are enrolling their child here so that they can be dewormed. But with a population of 800, it's hard for me to tell.

**Man, primary school deputy head teacher**

**Is it the first time that this has taken place here?**

No, it is not the first time. It has been done three times. I think the last time was in 2013.

**Do you think it is helping the children? How?**

It helps their cognitive development. Once these children are healthy they learn well. It also helps their physical development because when a child is sick he can't join the others in the field.

**Have children been missing school because of illnesses?**

Definitely, yes. Before the deworming program children used to miss classes because of different illnesses, mostly stomachaches related to worm infestations. After the deworming program was put in place, absenteeism declined.

**Does deworming these children help them perform well?**

Yes, it does. When children have worms and their anuses are itching in class, they concentrate on scratching most of the time instead of on learning.

**Do many children miss class because of illnesses caused by worms?**

Yes. The children who come to school, especially those in primary school, are prone to worms. If these children are not dewormed quite a number of them will get ill by eating fruits that are infested with worms.

**Is illness therefore a primary reason why children miss school, or are there other major reasons?**

The truth is that there are quite a number of reasons. Illness is one. Right now we are in a drought, and some people are searching for water. That can also be a reason why children miss school.

**Have you sensed a difference in energy in class after deworming has been done in the past?**

Yes, that is why we are giving the program a lot of support—because it is useful. Actually children should be dewormed three times a year, but most parents don't even deworm their children. It's only through this program that the children are dewormed once a year.

**So you're saying that even though this deworming helps, it does not address the problem of worms conclusively?**

Yes, it is not conclusive because of the ignorance of parents. We still need to equip the parents.

**Are there any parents who are afraid of deworming these children?**

Some are afraid.

**Have they conveyed the same to you?**

Yes. In 2009 there were some side effects of deworming, and that spread fear to some parents. The side effects resulted from not eating something first.

**Have some parents expressed fear of this program today based on what has happened in the past?**

Not of late. In fact, since 2012 there has been no more fear.

**So you do not fear that some are going to refuse?**

No, we do not expect that. In fact, we expect a large number to turn up.

**Do you also expect non-enrolled children?**

Definitely.

**Do you think some children are afraid of the drug?**

No, because for some of the students this is not going to be the first time. However, for some this will be the first time, especially for those who have just joined ECDE.

**You are a teacher by profession; did you ever think that you would be dispensing medicine to your children in school?**

No, I never thought I would have to do this. Little did I know that I would apply my knowledge of biology and health education that I acquired in higher institutions of learning by administering the drug.

**Is it easy to administer the drug?**

It is easy because we have been trained to do it.

**Do you think it is a distraction from your work?**

No, it is not because it is going to help us for a very long time.

**Are you comfortable dispensing the drug?**

Very comfortable.

**Are there any other health interventions that target children in schools similar to this one?**

KEMRI and CDC are around doing a lot of work. I do not know what exactly they are doing, but they have been in local schools.

**Do you expect some children to miss the deworming?**

Some are likely to miss it. Even at the moment a few children did not come because they are sick.

**So are you going to take care of those when they come?**

Definitely, though we are not allowed to give them medicine when they are sick.

**Are there challenges that you have foreseen that might hamper the process?**

I don't foresee any challenges because children are psychologically prepared and they know that they need to eat first before taking the medicine. They also expect nausea, fatigue, and these kinds of effects. We have porridge so they are going to be fed before they take the drugs. Some rice and beans have also been prepared for the children, so we are ready.

**Are there any cases of parents from particular religious groupings like Roho Israel who have rejected the offer to have their children dewormed?**

Our area is mostly dominated by Catholics, and we don't have any problem with Catholicism. We do not have any reports of parents refusing to have their children dewormed in our school.

**Woman, primary school teacher**

**Were you trained to administer the deworming pill?**

No, but we have a teacher who was trained in 2013 and one who was trained this year.

**So you yourself are not going to be administering the pill?**

The other teacher attended training and sensitized the remaining teachers. Then all of the class teachers are responsible for administering the pill for the children in their classes.

**Is this going to be the first time you are doing this?**

No, this is the second time. I did it in 2013 here in this school.

**Do you think that deworming the children is helping them?**

Deworming has been helping very much, especially in terms of avoiding absenteeism among children. Initially there was chronic absenteeism, but since the

program started that has changed. When the drug is administered in school you can be sure the pupil has taken it, unlike if you give it to them to go and take at home.

**Which is your class?**

I am a class teacher for class two.

**Has there been an increase in class enrollment since the drug was last administered?**

The students I have in classes now are a new group. The ones we dewormed in 2013 moved to the next class so they do not affect my enrollment numbers.

**What approximate number of students used to miss class before the drug was administered and after?**

I'd have to check the register, but I think there has been some improvement because worms are an issue not only for the children but also for the adults. To encourage the children to take the pill, I took it myself before giving it to them. I did it in their presence so that they could see that the teacher had taken it and feel safe taking it too. The pill that really made them afraid was the one for bilharzias. It was combined with the normal deworming pill and it left them in such a poor state that some of the parents were unhappy with us teachers for having administered that drug to their children.

**Did the effects last too long and what were they?**

Yes, the effect was a drunken state, and it lasted too long. I personally went home when I was not myself. We administered the drug to the whole school around ten or ten-thirty in the morning because the children in ECD to class three could not come back in the afternoon. The children who did come back to school in the afternoon could not take lessons.

**Were they weak?**

Yes, they were weak, felt sleepy and couldn't concentrate in class.

**Do you think that notion that the drug was not good that was left with some of the parents at that time is going to affect the process this time around?**

This is not the first time we are administering this drug, but as of 2013 it was combined with the bilharzias drug. We used a pole to measure children's height to determine their dosage. Sometimes somebody is very weak, but the height makes him get more drugs. I was a victim; I went home in a stupor.

**Had you not provided food for them last time?**

We provided only porridge. Some students might have come to school without eating breakfast.



**Have energy levels in class changed since the drug was administered?**

Yes, children are very active, and as a teacher I can say the drug has contributed to this, but some parents don't know that. In fact, in this school we have children whose religion does not allow them to be dewormed.

**Do you have any students in your class who belong to a church where members are not allowed to take the drug?**

No, not in my class, but there is one in class four and another one in class six.

**As a teacher, are you comfortable administering pills to students?**

Yes, I am comfortable.

**When you were studying to be a teacher did you imagine that you were going to be administering pills to your students?**

No, I didn't think that I was going to be administering pills.

**Is it a distraction from your work or do you enjoy doing it?**

No, it is okay with me because we have been told it is a national program and we have to carry it out. If it is happening everywhere we cannot dismiss it.

**Apart from the deworming program are there any other health related programs that have come here?**

Yes, we had a group that came here to carry out the anti-jigger campaign. We also had another group sometime back that was doing an anti-malaria campaign. They provided medicine and shoes and mosquito nets.

**And were they the ones who did the work or did they train you to do it?**

No, they did it themselves.

**Do you think many children are going to be afraid of taking the pill tomorrow?**

I fear that many might be afraid to take the pill, especially based on past experiences.

**And what are you telling them regarding the fear they have?**

I talk to them and tell them that this time around the deworming is not going to be like it was the other year because we are going to give them food first.

**Are parents aware?**

I do not know if they are aware, but I know the board of management is aware.

**Hasn't there been a deliberate meeting to inform them?**

I think we have had only one parents meeting this term.

**Woman, 48 years old, mother of 12**

**How many of your children are in primary school?**

Six of them are in primary and one is in ECD.

**Have any of them missed school because of illness?**

One missed school because of backache. He fell down from a building and injured his spinal cord when he was in class four. He loved playing football.

**How did you hear about the deworming?**

My children gave me the report that they were going to be given medicine in school. I then went to confirm with the head teacher and decided to change my shift from night to day so that I could monitor the children.

**What do you do for a living?**

I am a security officer at a secondary school.

**Have your children been given the deworming drugs before?**

Yes, they were dewormed the last time the school dewormed children.

**Were there any changes in their health?**

Their health changed because before the deworming they weren't eating well but after the deworming they started eating well.

**What disease do you fear in your children's health?**

I fear malaria and also worms.

**Do you deworm your children?**

Not regularly. Sometimes I buy deworming drugs from the shops but that is once in a while.

**Do you think your children have worms?**

I think one of my young ones has worms, and I now want to see how he is after today's deworming.

**Did you get enough information regarding the deworming?**

Yes, I got enough information. I knew that the government was deworming children today because I went to the school to inquire about the deworming after my children told me about it.

**Do you think deworming your children is going to help them stay in school more and perform better in class?**

Yes, that is what I believe, and I hope it is true.

**Woman, 21 years old, mother of one**

**How old is your child?**

He is four years old.

**Who told you about the deworming day?**

I was told by some children from the school who are older than my son.

**Did you fear the drugs? What did you think about the drug?**

I just accepted the medicine because I know it is good for the children.

**Do you know whether your child has worms?**

No, I do not know whether he has worms or not, but it is good that he was dewormed so that if he had them he can be rid of them.

**Did he miss school this past month due to illness?**

He did not go to school for two days in February because I had not paid fees. He has also not gone to school in the past due to headaches and flu. There have been rashes appearing on his body of late too.

**Have you taken him to the hospital for it?**

No, I have not taken him to the hospital.

**Could the rashes be because of worms?**

I do not think they are because of worms, though he has ringworm.

**Do you think the drugs will make him healthier and stay in school?**

I think the drugs will make him healthier. I also think he will attend school more often now that he has been dewormed.

**Is he exposed to muddy water in the river?**

We have tap water, so we do not fetch our water from the river. Therefore he is not exposed to bilharzias from the river. But he could still be exposed to worms through water here at home.

**Did you get enough information about the deworming?**

Yes, I was satisfied by the information that I got from the children about deworming.

**Man, 35 years old, father**

**How old are your children?**

They are ten, seven, three, and two.

**What do you do for a living?**

I own a shop where I sell household items and a small hotel.

**How did you hear about the deworming?**

I heard about it on the radio from both Nam Lolwe FM and Victoria FM.

**What do you think about the deworming?**

It is good. It helps the children because the problem we have is getting the drugs. Now that they have been brought it here, the drugs are going to help the children.

**Did county health workers come to tell you about the deworming?**

Yes, they did. When they came I had already heard but they gave me more information.

**Did you get enough information on the deworming day?**

Yes, I got enough information. I was even given posters to put on my shop so I could explain to people who came to my shop what it was all about.

**Did the deworming drug help your children when they were given it last time?**

Yes, it helped the children when they were given it. The one for bilharzias was too strong, but otherwise I would love for them to do it more regularly.

**Were you afraid of the reaction the drug had on the children?**

No, I was not afraid because I knew it was something that was going to help them.

**Did the children's health improve after the deworming in 2013?**

After the 2013 deworming, the children's health improved. They went to school regularly and concentrated in their classes. Worms disturb children; children with them tend to eat too much and not get satisfied.

**Do you think your children have worms?**

There is one that I thought had worms, and after this interview I will confirm that and see if he is okay. He was sickly and weak.

**Where do you think these children get the worms from?**

I think they get the worms from the games they play. I even urge teachers in school to ensure that children wash their hands before they eat. As for bilharzias, when children go to the river they start fishing for mudfish and in the process contract it. So sanitation should be improved because if it is not the children will continue to be exposed. They have introduced a system where children carry their lunch to school. The government should empower schools to discourage diseases that occur from poor sanitation.

**Woman, 26 years old, mother of three**

*Interviewer notes: When I arrive at her home she wants to leave for work but offers to talk to me for a few minutes. She lives in a single iron-sheet roofed house whose walls are made of red mud and wooden poles. The house has a cracked and rough finish and it is agape where the wall meets the roof. The house has two rooms; one acts as the kitchen while the other is the bedroom. Very little furniture is in the house, and the few utensils are mostly plastic items. It is a humble household. She has a few goats that she tethers along the boundary of her farm where they can find a bit of green grass to graze on. She has tilled the two-acre piece of land in anticipation for the rains ahead of the planting season. She plans to plant maize and beans to feed her family and to sell.*

**What do you do for a living?**

I am a cook at a primary school.

**How did you know about the deworming program?**

The children came home to tell me about it. Since I am an employee of the school, I went to inquire more about it from the head teacher.

**Did you hear more about it from community health workers and the radio?**

I do not have a radio, and when the community health workers came by in the morning they did not find me at home.

**Have any of your children missed school because of illness this past month?**

One child missed school for one week due to a stomachache. I took him to the

hospital, and he was given medicine, but no blood sample was taken. He recovered well though.

**Do you think they have worms?**

No, but when I see them with ringworm, I tend to believe that they have worms.

**What are your thoughts on the deworming program?**

It is a good program because some people do not have the time and ability to give children the deworming pills. When deworming is done in schools it helps us as parents.

**When was the last time you gave deworming pills to your children?**

The last time I gave them deworming pills was in January, and I intend to give them deworming pills again after three months. I usually give them deworming pills after six months. Community health workers also usually come after six months to deworm children too.

**When you deworm your children do you see any change in health?**

The children become healthy. My children usually eat all the time, but after they are dewormed they do not.

**When they took deworming pills in school in 2013, was there any change in their performance?**

Yes, after they took the deworming tablets in 2013, their performance in class improved.

**Woman, 22 years old, mother of one**

**What do you do for a living?**

I have a business, a shop where I sell things like sugar, salt, and soap to the villagers.

**How did you know about the deworming that took place at school today?**

I was never told about the deworming by anybody. I didn't know about it until my child came home to tell me that he had been dewormed.

**What do you think about it?**

I heard that some parents complained the other time children were given the drugs.

**Didn't you hear about it anywhere else?**

I heard about it on the radio, but I didn't know that it would happen here.

**Didn't the school management inform the parents through a parents meeting?**

There was no meeting called in school. I heard some parents in the market saying that they accompanied their children to school for the drug.

**Have you heard of any children who were affected by or reacted badly with the drug?**

I haven't heard of any stories of children affected today, but I thought that my child was too young to be given the drug. I was surprised when he told me that he had been given it.

**Have you dewormed him before?**

I gave him the drugs in December last year. I had also suspected that he had worms and was planning to deworm him.

**How did you know that he had worms?**

There was a day he complained of a stomachache and even passed liquid stool.

**And did he miss school because of that?**

No, he did not stop going to school because of it.

**Do you think that the deworming will keep him from missing school and improve his performance?**

I can't say for sure whether it will change his performance, but I will be able to do so after more time.

**Woman, 26 years old, mother of two.**

**How many children do you have?**

I have two children, and I also take care of my niece who is twelve years old. My children are six and eight years old.

**What do you do for a living?**

I am a farmer. I plant maize, millet, peanuts and beans.

**Who told you about the deworming today?**

My children told me that they were given pills, but I was not there to see it, so I do not know whether they were given the pills.

**When did they tell you about the deworming?**

They told me yesterday. They say they were given drugs today. I didn't know what the drugs were for, but since they always deworm children in school I suspected that it was for deworming.

**How did you feel about it? Did you object?**

I accepted it and told them that if they were being given medicine then they should take it.

**Have you heard of children who were affected by the drugs in the past?**

I heard that it affected other children, but mine were not affected, so it did not disturb me.

**How do you feel about the deworming program?**

I am happy about it because it deworms, but if it is for something else then I won't be happy.

**Did you get enough information about the deworming program?**

I didn't get enough information. I would have preferred if they called parents and told us about the drugs instead of telling the children to go tell their parents.

**Did nobody else like the county health workers come to tell you about the deworming program?**

Nobody came to tell me, and I didn't hear about it on the radio because my radio is spoiled.

**Have your children ever missed school this term due to illness?**

Two of my children have missed school. One stayed for almost three days and the other for almost a week. That is the only time they missed school.

**Do you think they have worms?**

I don't know how to check whether a child has worms, so I don't know whether they had worms.

**What ailment in your children do you fear more?**

It is malaria that I fear most.

**Do your children complain of stomachaches a lot?**

They do not complain of stomachaches much. They mainly get malaria and flu.

**When they were given the deworming pills in the past, did their health improve?**



The pills made them healthy.

**Do you believe the deworming will help them stay in school more and improve their performance?**

I believe that it will help them stay in school more, avoid being absent, and perform well in class.

**Woman, 32 years old, mother of four**

**How old are your children?**

They are sixteen, fourteen, seven and two.

**What do you do for a living?**

I am a farmer, I grow maize beans and cassava.

**How did you hear about the deworming program?**

I was told about it by my children when they came home from school.

**Have any of your children missed school because of illness this past month?**

Yes, one of them missed school last month because of malaria.

**Which illnesses are you afraid of with regards to your children?**

It is malaria that scares me a lot.

**Has anybody come to talk to you about the deworming program?**

Nobody has come to talk to me about it.

**Do you feel that you got enough information about the deworming program?**

No, I didn't get enough information and wish that I had gotten more.

**Do you think deworming the children helps them? How?**

Yes, it helps the children to stay healthy and to avoid missing school because of stomachaches.

**Woman, 29 years old, mother of four**

*Interviewer notes: The interviewee's house is almost a kilometer from the tarmac road and almost three kilometers from the primary school her children attend. Teachers at the school gave me a few children including the interviewee's son who took me to their*

*house. Her son is among the children who refused to take the deworming pill, saying his parents told him not to. We follow the narrow path to her homestead, which we find empty except for two children riding a bicycle in the compound. Two jerry cans lie outside the only house in the compound. It sits on almost three acres of land. It is a large mud-walled and iron-sheeted roofed house like many others in the neighborhood. At the back of the house is a tilled piece of land, almost a quarter of an acre. At the edge of the piece of land a cow stands tethered but not grazing. It is dry. The other part of the land is not tilled but is equally bare. Close to the house is a small structure, a bathroom. An old mosquito net has been used as the wall and held together by a few dry twigs.*

*The house has two rooms, the sitting room and a bedroom to the left. Three wooden benches are arranged along the walls. I sit facing the door on the right side. Another door is an exit to the back of the house towards the tilled piece of land. Clothes are strewn all over the seats. Some are on the earthen floor. Chickens come in and out of the house as I interview. A cat and a dog come in too, but the dog is chased out by the interviewee.*

**Are all your children in school at the local primary school?**

No. The three elder ones go there, but the youngest has not started yet.

**Did you hear about the deworming program that took place in school yesterday?**

Yes, I was told by my eldest son.

**Didn't you get the information from anywhere else? Even the radio, or community health workers?**

I didn't get the information from anywhere else because I do not even have a radio and the community health workers did not come here.

**Did you tell your children not to take the drugs they were being given in school?**

I didn't tell them not to take the pills. My son just feared the drug. The other time my daughter felt dizzy and vomited so she feared it. Even her siblings feared it.

**And how was your daughter's health after taking the pill the last time?**

After the dizziness the girl's health changed for the better.

**Did her grades at school get better?**

I don't remember the grade she got, but she improved a great deal.

**So what are your thoughts about the program?**

I am happy with the deworming program, but the one where they measure the children's heights and give them pills is the one that I fear because it has bad side effects.

**Have any one of your children ever missed school because of illness?**

Two of my children failed to go to school in February. One failed to go to school for one week because of malaria.

**Have they complained of stomachaches of late?**

They have never complained of stomachaches.

**Do you think they have worms?**

I suspect that they have worms because they eat fruits and other foods that are not clean, even when at home.

**What ailments do you fear most in your children?**

Malaria and typhoid are the illnesses that really scare me.

**Do you think that the pills will improve their health if they take them this time around?**

Yes, the pills will help improve their health and performance.

**What do you do for a living?**

Farming. I plant maize, beans, and green grams.

**Did you get enough information?**

Community health workers did not do the right thing. They should have come and informed me about the deworming as I did not have enough information and I would not have had a problem with it. I want the children to take the pills tomorrow.

**Woman, 35 years old, mother of three**

**What do you do for a living?**

I am a farmer. I plant mainly maize and millet.

**How many children do you have?**

I have three children who are 8, 12 and 15 years old.

**Do they all go to school at the local primary school?**

No, one finished primary school last year and is now in secondary school, and two are in the local primary school now.

**Who told you about the deworming?**

The head teacher told me last week on Friday when approaching me about helping make food for the children.

**Have any of your children recently missed school because of being sick?**

One of them missed school for three days. He was complaining of a headache.

**Did you take him to the hospital?**

Yes, I did. The illness turned out to be malaria. He was sick for three consecutive days during which he missed school.

**Do you think your children have worms?**

Yes, I think they do have worms.

**How do you know that?**

One had ringworm. It had been disturbing him and was growing big, so I bought him medicine.

**Did he change after that?**

Yes, he got better, and the ringworm is slowly disappearing from his head.

**Which illness bothers you more that you think your children can catch?**

Malaria is the illness that I fear most, followed by worms. I fear worms because my children play with clay and even eat foods that are unwashed.

**Do your children often complain about stomachaches?**

Yes, they complain of stomach pains a lot.

**Did you get to hear about the deworming program from anyone else apart from the head teacher? Have you heard of *Nyamrerwa – Community Health Education Workers (CHEWS)*?**

No, the health education workers didn't come to my home, but they are there.

**Did you get enough information on the deworming program?**

Yes, I got enough information about the program from the head teacher.

**Do you think that deworming the children helps them in school?**

Yes. Before they are dewormed they are dull and passive, but after deworming they become active and fall ill less often.

**Did the children's health change after the deworming?**

Yes, they stopped complaining of stomachaches after they had been dewormed.

**After a while, did the stomachaches and the same complaints start again?**

Yes, the children started complaining of stomachaches again after a while because they were dewormed only once over a long period. If they were dewormed more regularly, that might change.

**Did the performance of your children in school change after they had been dewormed?**

It did not change much, but their health improved, especially with regard to the stomachaches.

**Woman, 57 years old**

*Interviewer notes: The interviewee takes care of her late brother's daughter who goes to school at the neighboring primary school.*

**Who told you about the deworming program?**

My child told me that they were told to take cups to school and that they were going to be given deworming pills.

**Did you hear of it from any other source like the radio?**

No, I didn't hear of it from any other source. I do not know whether the community health workers came by because I have been sick and was at the hospital.

**What do you think about the deworming program?**

I think it is a good thing if it only involves deworming.

**Has your niece ever missed school because of illness this past month?**

No, she has never stopped going to school because of illness.

**Do you think that she has worms?**

She appears healthy, but I couldn't say for sure that she couldn't have worms because maybe she doesn't show symptoms.

**Do you think that this deworming is going to help her stay in school and perform well?**

When a child is not healthy she can't learn well in school, so the deworming is going to help her concentrate better.

**Has she ever complained of stomachaches?**

She has never told me that she has stomach pains.

**Which ailment is the one you fear most that can affect your child?**

Malaria is a big problem for children here and it is the ailment I fear most.

**Did you fear that the deworming could affect your niece?**

I didn't see any effects on my child, and I do not have any quarrels with that.

**Did you get enough information about the deworming program?**

People have different ways of perceiving information. If parents were called to a meeting in school and told of the deworming rather than sent messages through the children, the information would have been better received by parents.

**What do you do for a living?**

I used to be a tailor, but then my health started failing. I now stay at home and rear chickens.

**Woman, 32 years old, mother of four**

**Are you married? Do you have children?**

Yes, I am married, and I do have four children.

**How old are your children?**

The oldest is 15, the middle ones are 13 and 10, and the last-born is 8 years old.

**What do you do for a living?**

I stay at home tilling the land and growing mainly maize and beans. Most of the crops are for consumption at home, but a small amount are for sale.

**Do all your children go to the local primary school?**

Yes, they all go to school there.

**So were they dewormed when the last deworming took place at the school?**

Yes, they were all dewormed at that time.

**Are you aware that children are going to be dewormed tomorrow?**

Yes, I am aware. I was told by the head teacher and by the children too. They told me that they have been told they will be dewormed.

**Have your children ever missed school this past month due to illness?**

None of them has missed school because of being ill this whole year.

**Do you know whether your children have worms? Do you think they have worms?**

I think they have worms.

**All of them?**

Yes, I think they all have worms.

**What health concern of your children bothers you a lot?**

Malaria is the most frightening illness that can attack my children.

**And which ailment do your children complain about often?**

It is malaria. Malaria is a rampant illness in this area.

**Have they ever complained about stomachaches?**

No, they haven't complained about stomachaches. However, they have ringworm on their heads, and some have their bellies distended.

**Have government health workers come to tell you about the deworming program?**

There are county government's workers called "*Nyamrerwa*" who have been going around saying that children will be dewormed.

**What do you think about the deworming program?**

I am happy about it. It is good for the children to be dewormed so that they can concentrate on school. When I saw the drug administered to my children last time, I didn't see anything wrong with it.

**Are you satisfied with the information that you have received regarding this program?**

Yes, I am satisfied with the information that I have received.

**Is there any information that you think was not available to you regarding the deworming pills?**

No.

**Man, 65 years old, father of nine**

**What happened to your son?**

After he was given the pills at school, I was called and told that the boy had fallen sick on the way home and could not walk.

**What did you do?**

I took my bicycle, went to him and found him sick.

**Describe how he was when you found him.**

When I found him he was dizzy. He looked tired and unable to walk. I took him on my bicycle and brought him home. Upon arriving he started vomiting.

**What did you think happened to him?**

I thought that it was the drugs he was given in school that affected him.

**Did you know that he was going to be given the drugs in school today?**

Yes, I knew about the drug. My son had told me that they would be given the drug in school, and I had told him not to take it.

**Why had you told him not to take it?**

Because I thought it was a research drug and that they were trying it on children.

**Did you get information about the drug from any other person apart from the child?**

No, I got the report from the boy alone, nobody else.

**Didn't you know that it was a deworming drug?**

I didn't know. How could I know when I am not a doctor?

**Was the boy given the drug when it was last administered?**

My daughter was given a deworming drug last time, and she also fell sick just like the boy. We thought it was malaria, and we took her to hospital.

**Were you given more medicine at the hospital?**

No, we weren't given any medication. We were told that the pills had reacted with her body.

**Were there any health differences in your daughter after she was treated for worms?**



Yes, there were changes in her health. She didn't complain of stomachaches for some time after that.

**Did your son ever miss school this past month due to illness?**

No, he has not missed school this term until today.

**Did you get enough information regarding this deworming exercise?**

No, I lacked information and did not know that they were deworming children. I thought they were testing drugs on children, so I told mine not to take it. When I was told that he had fallen sick because he had taken the drugs I was angry.

**Will you allow your son to take the drug the next time they come?**

I will allow him to take it when they come next time, but I need a written form stating what drug they are going to give my child so that we know and stay informed. I didn't have information.

**Did any county health worker come to your home to inform you about the deworming?**

No one came to my home to tell me about it. Only the child informed me about it.

**Didn't you hear about it over the radio?**

I do not have a radio.

**How many children do you have?**

I have nine children, but only two are currently in primary school.

**How about the second one who is in primary school? Did he also have the same complications?**

No, she did not go to school yesterday when they were being given the drug.

**What do you do for a living?**

I am a farmer. I grow bananas, maize, millet, beans, avocados and guavas.

**Woman, 32 years old, mother of three**

*Interviewer notes: Interviewee is a salonist at a nearby market. She helped prepare a meal of rice, beans, and porridge on the day of the deworming. Her daughter had complained of stomachaches during the past month and missed school for three days in February.*

**Tell me about your family.**

I have a husband and three children, two girls and one boy.

**Are they all at the local primary school?**

They were here, but the firstborn finished primary school last year and went to secondary.

**How old are you?**

I am 32 years old. My children are 15, 14, and 12 respectively.

**What do you do for a living?**

I am a salonist.

**Have your children ever missed school this year for being sick?**

One of my children, the youngest, missed school for around three days in February.

**What was the problem?**

She was complaining about a headache and a stomachache.

**Do you think it was because of worms?**

I thought it was either worms or typhoid, but when we went to the hospital it was found to be malaria and a little typhoid, so I was told to boil drinking water.

**Have you ever dewormed your children since the school deworming program started?**

No, I haven't dewormed them since then, but I saw a change after the program started. My last kid, his stomach sometimes used to look distended and swollen, but since that day he has been well. His stomach went back to normal. He also used to complain of stomachaches and when he relieved himself there were traces of mucus on his feces, but after the deworming I didn't see that again.

**What ailment do you fear most in your children?**

What I fear most are stomach pains and the swelling of the stomach that my son had. Nowadays I boil water, but I can't control the water they drink in school.

**Have you heard about the deworming of children that will be done tomorrow?**

Yes, I have heard about it. The head teacher told me about it last week on Friday because he wanted parents to volunteer to cook for the children on the deworming day, and I volunteered.

**Didn't you hear of it from any other source like the radio, health workers etc.?**

No. My child also told me of it, but that was after the head teacher had told me.

**How about the Community Health Education Workers? Didn't they come to your place?**

I have never seen them.

**Wasn't there a parents meeting organized by the school administration to inform you of the planned deworming?**

No, there hasn't been such a meeting.

**Are you happy about this plan?**

Yes, I am happy about it.

**I have heard that the other time when children were dewormed, some had serious reactions like dizziness and vomiting and fainting. Do you fear these?**

No, I am not afraid of these reactions because I know they only last for a few minutes before things go back to normal.

**Would you say you are satisfactorily informed about the deworming program or do you need more information on it?**

I would like to be more informed on this because I feel I do not have enough information as of now.

**Do you think deworming helps to alleviate absenteeism from school due to illness?**

Yes, I think it helps because it returns children to normal health.

**Does it help children's performance? Do you think it leads to better grades?**

Yes it helps because after deworming they don't fall ill often. Hence they attend class more and don't miss a thing being taught.

**Give me an example of your child. Did you see any changes in performance after the last deworming?**

She was ten years at that time and in class four. She had repeated a class, but after that she performed well and moved on to the next class.