

INDEPENDENT PROCESS  
MONITORING REPORT

Cross River State, Nigeria 2016

Evidence  
Action



Deworm the  
World Initiative

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## Introduction

Evidence Action's Deworm the World Initiative enables governments to eliminate the public health threat of worms through school-based mass deworming programs. One of the strategies being employed is the large-scale school-based mass drug administration (MDA) for soil transmitted helminthiases (STH) and schistosomiasis (SCH). In Cross River state, Evidence Action is supporting the State Ministry of Health (SMOH) and State Universal Basic Education Board (SUBEB) to launch a school-based deworming program. The objective of the program is to achieve high coverage of the at-risk school-age population in endemic Local Government Areas (LGA).

The first round of statewide school-based deworming in Cross River state was implemented in June 2016 in 11 endemic LGAs by SMOH with support from SUBEB. This activity targeted all children of school-age (5-14 years), with a 'mop-up' day planned to follow shortly after to treat the children who missed the initial deworming day. The deworming medicine (Mebendazole, for STH, and / or Praziquantel, for SCH) was administered to children by trained teachers in 1230 targeted schools.

Program monitoring is key to understanding how programs roll out and in particular implementation at the school-level. Independent monitoring is especially important to enable an objective assessment of key processes and outcomes, in order to understand specific program areas that are working as intended, and those in need of improvement. The resulting data provides an assessment of how closely the actual program activities match the established plans and guidelines.

This report details the independent process monitoring activities conducted by Infotrak Research and Consulting firm, for Evidence Action in Nigeria. Infotrak was selected through a competitive bidding process for their services. The aim of monitoring was to measure the roll-out of the program by observing and reviewing the quality of teacher trainings and deworming day activities. Contracting an independent third party intended to provide an unbiased picture of program results that can be used to inform future treatment rounds.

## Monitoring and Evaluation Design and Methodology

The June 2016 school-based MDA targeted all school-age children (SAC) aged 5-14 years living in 11 LGAs where MDA for STH and/or SCH is warranted in line with the World Health Organization (WHO) and/or NTD's unit of the Federal Ministry of Health, Nigeria's guidelines. Both enrolled and non-enrolled SAC were targeted for MDA. Endemic LGAs (implementation units) were determined based on the mapping results conducted by Federal Ministry of Health (FMOH) in collaboration with (SMOH) and (SUBEB) using the FMOH preventive chemotherapy (PCT-NTD) treatment protocol.

For the independent process monitoring, a stratified sampling method was used to select schools to be monitored. A list of all registered schools that cater for 5-14 year old children was provided by the state Ministry of Education (MoE) and used to plan the sample.

### Sampling

For this first deworming round in Cross River, two activities were monitored: teacher training and deworming day. A stratified sampling approach was used to select a random sample of activities to be monitored in each stratum with each LGA serving as a stratum. Twenty percent of the teacher trainings (16 sessions total) were randomly selected and 6% of schools (60 schools total) were selected for deworming day monitoring. The table below gives a more detailed overview of the sample sizes used.

**Table 1. Independent process monitoring activities and sample sizes**

Activity	Number of Activities	Number of samples selected	Sample Size Monitored
Teacher training	77	16	18
Head teacher interviews	1009	60	58
Teacher interviews (On deworming day)	N/A	60	55
Deworming day School observations	1009	60	58
Parents interviews (On deworming day)	N/A	60	48
Children interviews (On deworming day)	N/A	180	175

### Data Collection

For the data collection process, Infotrak hired a total of 60 independent monitors. Prior to the start of monitoring the MDA activities, the hired monitors were trained for three days on:

- Neglected tropical diseases (NTD) with particular reference to STH and schistosomiasis infection, prevalence and treatment.
- Detailed explanation on the process of teacher training and the actual MDA
- Roles and responsibilities of independent monitors.
- Providing instant feedback on critical issues within the program implementation.

Infotrak used a computer-assisted personal interview (CAPI) method for data collection. This method utilises tablets, which used Open Data Kit (ODK) Collect, an android based open-source application.

For quality control purposes the tablets identified the location from which the data was collected, the time the activity took place, the duration in minutes the monitor used to file the report.

### Teacher training

A total of 18 teacher training sessions were observed out of which 10 focused on STH and SCH treatment, 5 focused on SCH treatment only while 3 focused on STH treatment only. Of the trainings observed, 71% used the teacher training guides provided by the Cross River SMOH.

#### Detailed information coverage

In the monitored trainings, 59% of teachers were told to ensure that children eat well before deworming for SCH in order to reduce side effects of praziquantel (PZQ). Community sensitization was covered in 87% of the observed trainings while sessions on filling of reporting forms was covered in detail in 79% of the observed trainings. Topics least often included were community sensitization to parents (53%) and drug administration (54%) (Table 2).

**Table 2. Trainings where key topics were covered in detail**

Topics	Coverage Percentage
Community sensitization to students	87%
Reporting Forms	79%
Drugs & Dosage	73%
Worms	59%
Community Sensitization to children	56%
Drug Administration	54%
Community sensitization to parents	53%

#### Teachers' roles

During teacher training, teachers are informed on their role during the deworming activity at their school. Information on the following teacher's roles were covered in detail:

<b>83%</b>	<b>75%</b>	<b>67%</b>	<b>43%</b>
<b>Organize drug administration in schools</b>	<b>Disseminate health education messages for children and parents</b>	<b>Complete forms for registration and reporting</b>	<b>Mobilize non-enrolled school-age children</b>

It is worth noting that in 13 out of 14 (94%) of trainings where SCH was to be covered, steps of handling SCH side effects were covered in detail, while in 5 out of 7 (56%) training centers where STH was to be

covered, steps for handling STH side effects were covered in detail. While the program team (SMOH/SUBEB) should ensure that future trainings cover STH side effects more comprehensively, the high level of attention to the SCH drug is a sign of success since it is more likely to be associated with side effects.

### Material distribution

During the teacher trainings, materials (i.e., forms, poster, drugs etc.) were distributed to teachers. In 82% of the training sessions, reporting forms (treatment registers and summary forms) were distributed to all participants. In only 30% of training sessions, posters and banners (5 posters and 1 banner per school) were provided to the teachers. It is important for schools to have posters and banners in order to sensitize students and communities regarding Deworming Day. During the implementation round, there were shortfalls of necessary materials (training flip chart, posters and teacher handouts) at trainings due to shipment delays and a traffic accident on the delivery route.

Sufficient drugs were distributed to all participants in 97% of the trainings based on enrolled and non-enrolled population in the area. The population figures were derived from the program's planning data.

### Head teacher pre deworming-interview

A total of 58 schools were visited on Deworming Day and head teachers from all these schools were interviewed before deworming commenced. They were asked questions regarding their treatment plans for deworming, treatment knowledge, and activities related to teacher and community sensitization.

According to 64% of the head teachers, deworming was planned to happen outside the classroom. After deworming there were different mop-up plans in place to treat children that were not present during deworming. Of all head teachers, 52% planned to step up mobilization to communities after deworming, 21% planned to wait for the children and parents to come to the school, 5% planned to treat children in their houses and 3% planned to discontinue with treatment and submit the treatment report. This information shows a need to clearly communicate a unified plan for mop-up activities, in line with guidance from the state implementers.

### Non-enrolled children

On Deworming Day, enrolled as well as non-enrolled children are targeted for treatment. Head teachers were asked about their treatment plan for non-enrolled children and 40% indicated plans to treat them together with the enrolled children. Of all head teachers, 32% planned to treat them separately, at the same time or at a different time (**Table 4**). Separating enrolled from non-enrolled children can be

helpful in correctly recording drugs administered to non-enrolled children.

Other responses mentioned by teachers were that they only have enrolled children in the area; they were not instructed on how to handle non-enrolled children, they would treat the non-enrolled children when they come or had no plans for their treatment.

**Table 3. Treatment plan for non-enrolled children**

Treatment plan non-enrolled children	Percentage
Treat them together with the enrolled children at the same time	40%
Treat them separately from the enrolled children but at the same time	16%
Treat them separately from the enrolled children and at a different time	16%
Other	21%

For this round of deworming, 48% of teachers used town announcers and 45% spread messages through enrolled to non-enrolled children to mobilize non-enrolled children. Out of all head teachers interviewed, 29% mentioned that they would do nothing specific to target this population. Because a large percentage of teachers were not targeting non-enrolled children, coverage for this group was likely not maximized on Deworming Day. This is a key area to intensify future efforts.

### Treatment knowledge

During monitoring activities, head teachers were also asked about their knowledge regarding treatment of STH and SCH. **Table 4** and **Table 5** show a difference between knowledge on STH and SCH treatment. Head teachers have more knowledge regarding correct SCH drugs, dosage and age group than on STH treatment. Only 4 out of 10 (40%) of teachers interviewed in schools where STH was administered knew the correct drug for STH, while 35 out of 50 teachers (69%) from schools that administered PZQ knew the correct drug for the treatment of SCH. There is need to emphasize this specific area for trainers of teachers during teacher training to ensure proper dosage and administration.

**Table 4. Knowledge on STH treatment**

Knowledge STH treatment	Percentage
STH Drugs	40%
STH Dosage	48%
STH Age Groups	74%

**Table 5. Knowledge on SCH treatment**

Knowledge SCHtreatment	Percentage
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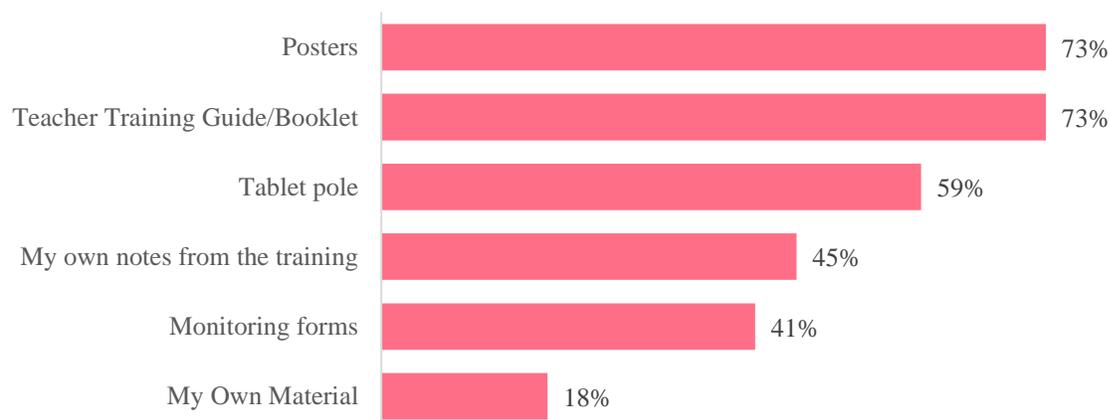
SCH Drugs	69%
SCH Dosage	71%
SCH Age Groups	86%

Out of 58 teachers, 80% mentioned *feeding children before treatment* as a measure to minimize the side effects of schistosomiasis treatment with Praziquantel. This is important knowledge as it can reduce the chances of any side effects from this treatment.

### Teacher sensitization

Of 58 schools planning to deworm, 48% of head teachers mentioned attending a training session themselves in preparation for deworming. 97% of head teachers indicated that teachers at their school received training in the 2 weeks prior to deworming. For teacher sensitization/training at school, the Posters and Teacher Training Guide were the most used type of material to conduct sensitization of other teachers (**Figure 1**).

**Figure 1. Materials used to conduct teacher sensitization**



### Community sensitization

Teachers were also instructed to engage in activities to sensitize the community on deworming. **Table 7** shows that *Encouraging Children to share Deworming Day Information with Parents* was the most used type of community sensitization activity. Another popular activity was displaying posters in the school, done by 48% of schools.

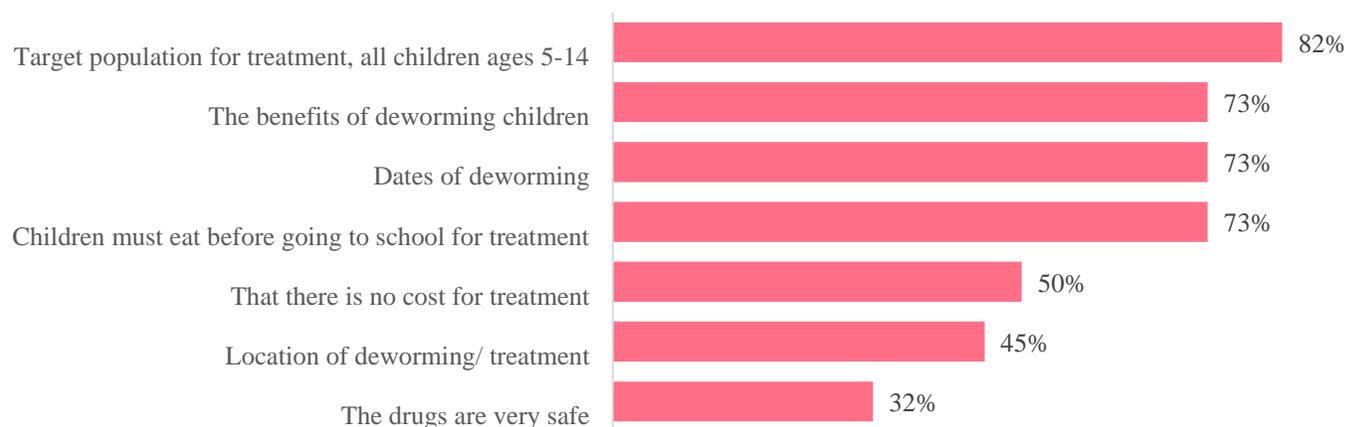
**Table 6. Community sensitization activities reported to be conducted by schools**

Community sensitization activities	Percentage
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Encourage Children to share Deworming Day Information with Parents	59%
Display Posters in the School	48%
Conduct Health Education in Class	43%
Discuss Deworming Day at School Meetings	43%
Encourage children to share Deworming Day information with siblings and friends	43%
None	3%

Messages most commonly shared with the community according to the head teachers, included information on target population of treatment, benefits of deworming, deworming dates, and feeding before treatment (**Figure 2**).

**Figure 2. Messages shared with the community**



### Deworming Day Observations

Monitoring activities of schools planning to deworm focused on checking the presence of materials, forms and drugs on Deworming Day. Besides the presence of materials, the Deworming Day procedures were observed which together give insight if deworming happened systematically.

Out of 58 schools monitored on deworming day, 55 of them (94%) had all materials (i.e., drugs, tablet poles, forms etc.) in place during deworming (**Table 8**).

**Table 7. Materials present at deworming station**

Materials	Percentage
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Tablet pole	100%
Water for drinking	93%
Cups for drinking	91%
PZQ 600 MG	96%
MEB500MG	100%
Treatment register	95%
Summary sheet	83%

Children to be treated were organized in different ways: 55% of children were treated by class, 36% were randomly standing in queue, 34% treated lowest class first, and in 26% of the cases children were organized and arranged in the queue by height.

Treating children by class provides an organized deworming process, whereby it is easier to verify compliance. The organization of children by height can support the measurement of the correct drug dosage of PZQ to children by the tablet pole.

### Treatment observations

On Deworming Day it is important that certain steps are followed in order to ensure a safe and successful deworming. One important part is that teachers check whether children swallow the tablets. 98% of the teachers were observed to check if the children were actually swallowing the tablets.

In 74% of schools, education messages were given prior to the treatment (**Table 9**). The benefits of deworming were discussed most by teachers, followed by the harmful effects of worms.

**Table 8. Education messages conveyed to children before treatment**

Education messages	Percentage
Benefits of deworming	74%
Harmful effects of worms	58%
How worms are transmitted	49%
Purpose of this activity/deworming	49%
Methods of STH and SCH prevention	35%
Orientation/instruction on how they will be treated	35%

Another way to determine if deworming happened systematically is the presence of two teachers and the proper registration of the treatment. The deworming treatment team should be comprised of two teachers, which happened in 93% of monitored schools during this round. In 97% of schools, teachers were observed to record treatment in the treatment register when tablets were administered and in 95% of schools teachers filled out all sections of the register.

## Treatment of Non-Enrolled children

Non-enrolled children were observed to be treated in 18 (34%) of the 58 schools monitored. During deworming nine of the 18 schools (50%) that treated non-enrolled children treated them together with the enrolled children at the same time, while the remaining nine did it on separate days. However, as shown in Table 9 below, the actual approaches undertaken by the 18 schools differed slightly from their planned approaches. There is need to emphasize inclusion of non-enrolled children for deworming during planning meetings and teacher training sessions.

**Table 9. Treatment approach for non-enrolled children: planned versus executed**

Treatment plan for non-enrolled children	Planned this approach	Executed this approach
Treat them together with the enrolled children at the same time	40%	50%
Treat them separately from the enrolled children but at the same time	16%	20%
Treat them separately from the enrolled children and at a different time	16%	30%
Other	21%	-

During Deworming Day, 75% of the schools treating non-enrolled children were observed to properly register non-enrolled children on the treatment register.

## Adverse Events

In 24 out of the 58 schools visited, the monitor cited children with side effects (abdominal pain, nausea, vomiting, etc) after taking the medicine. These schools were in Bekwarra, Biase, Obudu, Ogoja, Yakurr and Yala implying that only LGAs where PZQ was administered experienced side effects.

In 41% of schools, side effects were observed. Vomiting was the most observed side effect in 71% of the cases, followed by abdominal pain in 49% of the cases and 29% observed nausea occurring to children. The treatment that followed included giving glucose in 42% of the cases, paracetamol in 17% of the cases, and oral rehydration solution (ORS) in 13% of the cases.

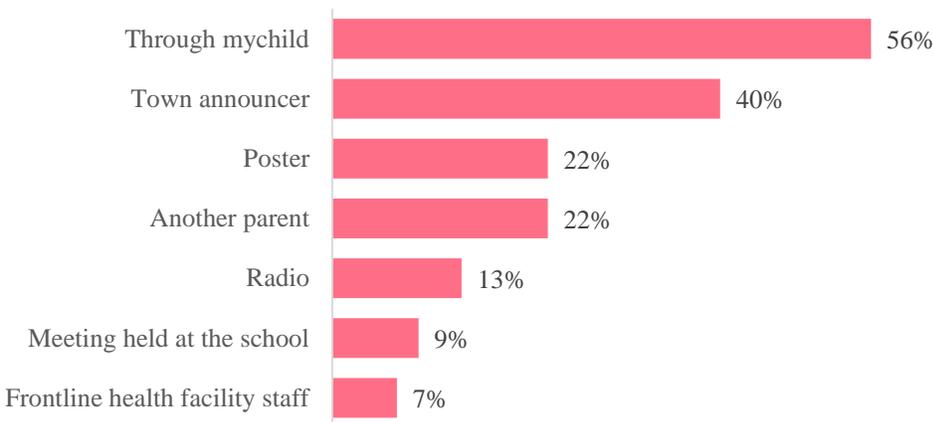
Overall, at 88% of the schools, the teams seemed properly trained and knowledgeable on adverse side effects and how to treat children. This implied that teachers in such schools were able to follow adverse effects management protocol as required.

## Deworming Day Parent Interviews

Out of 58 schools visited on deworming day, parents were available for interview in only 47 schools where one parent was interviewed from each school. Of the 47 parents, majority were aware of what their children were being treated for - worms, i.e. 93.6%. Only three of these parents weren't aware or couldn't tell.

Regarding information sources, 56% of the parents interviewed received information about Deworming Day from their children, followed by 40% from the town announcer, 22% through the poster and 22% through another parent (Figure 3).

**Figure 3. Information sources reported by parents**



Of 48 parents, 92% knew that their children were being treated for worms.

## Deworming knowledge

Parents were also asked about the different ways that children can get infected by worms. The majority, 64% of parents, mentioned swimming in contaminated water as a source for worms. Other sources mentioned by parents were eating with dirty hands (53%) and walking barefoot (51%). Of all interviewed parents, 62% reported that washing your hands before and after meals can prevent worms. Overall, 93% of parents mention that they do practice handwashing using clean water with either soap or ashes.

## Deworming Day Teacher interview

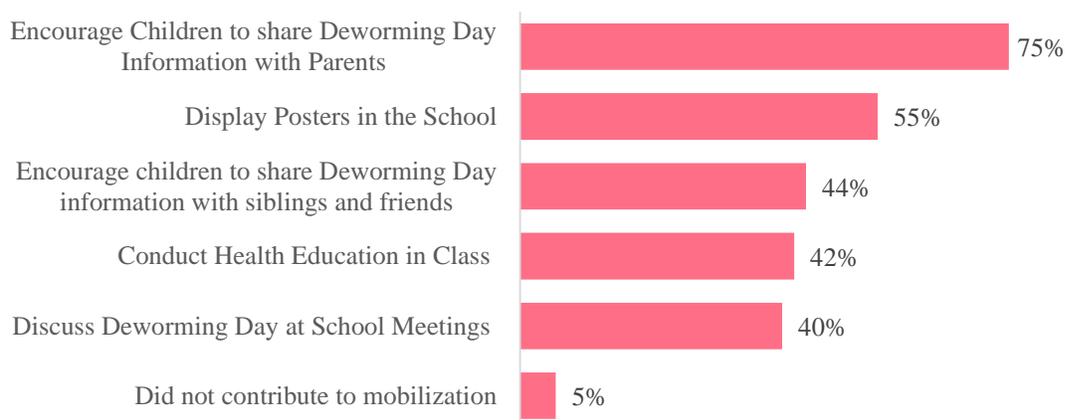
Besides head teachers, 55 teachers were asked about training prior to deworming, community sensitization activities and Severe Adverse Events (SAE) during deworming day.

Of the 55 teachers interviewed, 95% indicated that they had attended a training session in the last 2 weeks in preparation for this deworming campaign.

### Community sensitization

During trainings, teachers were asked to engage in community sensitization meetings to increase awareness of Deworming Day. One of the most used activities for community sensitization was *Encouraging Children to share Deworming Day Information with Parents* (**Figure 4**). This is in line with the response of head teacher regarding sensitization activities.

**Figure 4. Community sensitization activities conducted by teachers**



Besides talking to their students about deworming, teachers were asked about who else they communicated with about Deworming Day. Of all teachers, 76% communicated with parents, 47% with church members, 33% with community leaders, and 9% indicated having communicated with no one else.

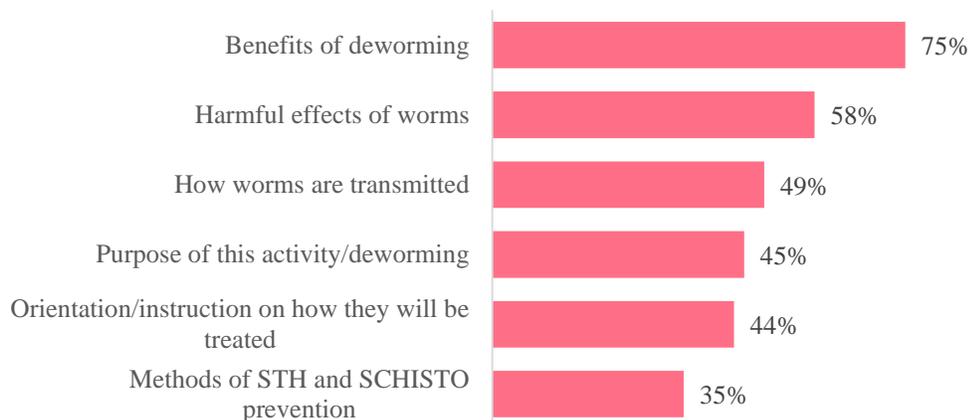
### Teacher's role

During deworming teachers were asked about their role in the deworming day activities. Of all teachers, 75% said their primary role during Deworming Day was to administer drugs.

**75%**  
**Administer  
Drugs**
**45%**  
**Record  
treatments**
**44%**  
**Organize  
Children**
**31%**  
**Supervise  
Children**
**16%**  
**Give  
Health  
Education**

Teachers also provided information to their students on deworming (**Figure 5**). The most shared message was the *Benefits of deworming*, followed by the *Harmful effects of Worms*.

**Figure 5. Messages shared with students on deworming**



### Deworming Day Children interview

During Deworming Day, a total of 175 children were interviewed about their knowledge regarding deworming, of which 154 were enrolled students and 21 non-enrolled students.

#### Enrolled students

Of those 154 enrolled students, 94% knew that they were being given tablets at school. All students knew what the tablets were for and 84% told their parents that they were being dewormed. Of those children treated for SCH, 98% had eaten a meal before treatment. This can reduce the occurrence of any side effects when treated for SCH.

Students had different information sources regarding Deworming Day. The majority of students, 74%, received information regarding Deworming Day through a class teacher or other teacher. Another major source of information was the assembly announcement, mentioned by 64% of students. Only 10% heard about deworming through other students or friends and 3% through their parents.

Students were also interviewed regarding their knowledge of deworming. Specifically, they were asked about ways to get infected by worms. **Table 11** shows that *Eating with a dirty hand* is mentioned most by students as way to get infected with worms.

**Table 10. Ways to be infected by worms mentioned by students**

Ways to be infected by worms	Percentage
Eating with dirty hand	47%
Swimming in contaminated water sources	40%
Playing on the ground	40%
Walking barefoot	39%
Eating unwashed fruits	36%

Of the interviewed enrolled students, 54% mentioned preventing worms by washing your hands before and after a meal, followed by 48% mentioning handwashing after using the toilet.

### Non-enrolled students

Of the 21 non-enrolled students interviewed, 85% knew that they were being given tablets at school. All students knew what the tablets were for and all told their parents they were being dewormed. Of those treated for SCH all reported to have eaten a snack or meal before treatment. This can reduce the occurrence of side effects when treated for SCH.

Students had different information sources regarding Deworming Day. Of all non-enrolled students, 71% received information regarding Deworming Day from their parents, 65% received information from friends and only 6% from a teacher. Because these children are not enrolled in schools, sensitization of parents is important in order to reach these children.

Students were also interviewed regarding their knowledge of ways to get infected. **Table 12** shows that *Eating with dirty hands* is mentioned most by enrolled children as a way to get infected with worms.

**Table 11. Ways to be infected by worms mentioned by students**

Ways to be infected by worms	Percentage
Eating with dirty hands	50%
Swimming in contaminated water sources	45%
Walking barefoot	45%
Playing on the ground	35%
Eating unwashed fruits	30%

Of the interviewed non-enrolled students, 45% mentioned that you can prevent worms by washing your hands before and after a meal and also 45% mentioning washing your hands after using the toilet.

### Head teacher post interview

After the completion of the deworming exercise in the monitored schools, 55 head teachers were interviewed regarding deworming day activities at their school. Head teachers reported that it takes an average of three days to complete deworming activities at their school. All head teachers had sufficient drugs and 98% indicated that

they had tablets left over. In 46% of the cases, they will keep the drugs for mop-up, 43% will return it to the LGA, 7% will distribute it to more students and 4% will distribute it to teachers. None of the head teachers reports that they will keep the drugs for next year. At the training, teachers were told to return all unused drugs back to their supervisors along with the treatment data for accountability and proper storage of drugs for future use.

## Lessons Learnt

Following the results of monitoring of Deworming Day in Cross River, there are some lessons to be learnt. Some activities happened as planned and others can be improved for the next round of deworming.

### What worked well

1. **SCH Knowledge** - Head teachers had correct knowledge on SCH drugs, dosage and target population age groups. They were consistently directed to ensure that children eat before taking PZQ, which may have led to lower incidence of side effects after treatment. In addition, 94% of the observed trainings covered the correct steps of handling side effects of SCH treatment in detail. These observations suggest that training about SCH was delivered at a high quality and according to plans.
2. **Treatment Observations** -During Deworming Day 98% of the teachers observed to check if the children were actually swallowing the tablets. This is an important step for successful deworming and decreases the likelihood that non-compliance was a widespread issue.
3. **Side Effects and Adverse Events** - Teachers were observed to correctly handle side effects after treatment, suggesting that there was sufficient focus on side effects during the training.
4. **Recording treatment** - the vast majority of observed teachers filled out the treatment registers completely when deworming treatment was administered, which is one of the most key components for producing reliable coverage figures.

### What needs to improve

1. **Distribution of materials**-In only 30% of the teacher training sessions were 5 posters and 1 banner per school distributed. These materials are important in order to sensitize the students and the community on Deworming Day. Some of these shortages were tied to procurement delays and last-minute changes of implementation timelines, which partners should guard against in future rounds.
2. **Mobilization of non-enrolled children**-Only 43% of trainings thoroughly covered the role of the teachers to mobilize non-enrolled school-age children. During Deworming Day only 34% of the targeted schools were observed to be treating non-enrolled.

If more emphasis is placed on mobilization of this target group, it may be possible for more non-enrolled children to be reached during future deworming rounds.

3. **STH knowledge** - Compared to the knowledge on SCH treatment, head teachers had less knowledge regarding STH drugs, dosage and target population. Knowledge retention regarding both SCH and STH treatment is important and both topics should be emphasized in teacher the training.

Evidence Action is hopeful that these observations will be used to improve program quality and we look forward to working with the government to integrate these recommendations into planning for future rounds of MDA.