

Evidence

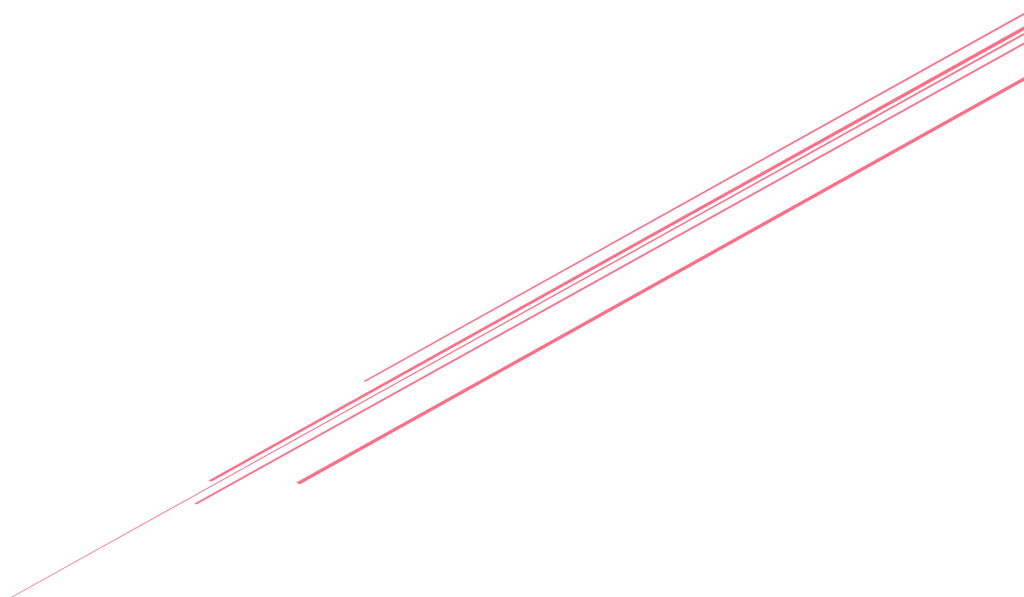
Action



Deworm the  
World Initiative

School-based Deworming in  
Ogun State, Nigeria  
Process Monitoring Report

June 2018



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The contribution of all other program stakeholders to the generation of this report including Infotrak Research and Consulting, are highly appreciated.

# Glossary

FLHF. Frontline health facility

FMOH. Federal Ministry of Health

LGA. Local government area

MDA. Mass drug administration

NTD. Neglected tropical disease

PC. Preventive chemotherapy

SAE. Severe adverse event

STH. Soil-transmitted helminths

WHO. World Health Organization

# 1.0 Executive Summary

In June 2018, Ogun state carried out its first round of school-based deworming for the year, targeting both enrolled and non-enrolled children, ages 5-14 years. Treatment was given in four local government areas (LGAs) with high endemicity for soil-transmitted helminths (STH). The state targeted 1,584 public and private primary and junior secondary schools for deworming.

To assess effectiveness of implementation and identify areas for improvement, Evidence Action designed data collection tools and a sampling method to observe and measure the quality of teacher training and deworming activities, and assess the accuracy of treatment data reported by schools. Through a competitive selection process, Evidence Action recruited an independent firm, Infotrak Research and Consulting, to collect data from a sample of 25 teacher trainings, 40 schools, and 40 local communities participating in school-based deworming.

Prior to deworming day, the program trained teachers to administer mebendazole, a safe and effective medicine, to treat STH infections. Among the 25 teacher training sessions, all sessions provided teacher training handouts. The majority of trainers also gave out treatment registers (96%), school summary forms (92%), and posters (92%) as required; however, the severe adverse event (SAE) protocol was handed out in only 52% of trainings.

In most observed trainings, trainers thoroughly covered various content related to drug administration, reporting forms, and health education. Most of the important topics were covered in all trainings, including: the drug and dosage to be used; targeted age group; benefits of deworming; STH transmission, prevention and morbidity; and treatment reporting forms. However, three key topics were covered in less than 70% of trainings: adverse event management protocols (48%), drug storage (64%), and the adverse event reporting form (48%).

On Deworming Day, teachers' adherence to key MDA procedures also varied. In 77% of schools observed, teachers provided health education messages to children prior to treatment. In 74% of schools, teachers asked if children were sick or taking medication before administering the drug, and the treatment register was used to record treatment in 92% of schools. In all schools, the correct dosage of mebendazole was given to each child.

Awareness on Deworming Day was higher among parents of enrolled children (89%) than those of non-enrolled children (63%). The most cited sources of information, in

both cases, were children (59% for enrolled parents and 46% for non-enrolled parents) and teachers (42% for enrolled parents and 34% for non-enrolled parents).

A data audit was conducted after treatment to assess the quality and consistency of reported figures. Results indicated that state data managers were unable to correctly record all elements of the school summary records into the state database, while only 34% of head teachers correctly summarized class register records into the school summary forms. Additional trainings, a review of data management practices at the state and school level, as well as the state adoption of school IDs are some state level recommendations to address these findings.

## 2.0 Introduction

Worm infections interfere with nutrient uptake, causing anemia, malnourishment, and impaired mental and physical development. These symptoms pose a serious threat to a child's health, education, and economic potential. Infected children are often too sick or tired to concentrate in school, or to attend at all. Parasitic worms pose a massive threat to human capital, hindering schooling and economic development in parts of the world that can least afford it. School-age children harbor the highest intensity of infection from STH and schistosomiasis, and therefore the World Health Organization (WHO) and Nigeria's Federal Ministry of Health (FMoH) recommend large-scale school-based deworming to control these diseases. Evidence Action provides technical support to several Nigerian state governments working to eliminate the public health threat of worms through school-based deworming.

In June, the first round of statewide school-based deworming for 2018 took place in four LGAs in Ogun state having high endemicity for STH. The Nigeria FMoH NTD program's treatment strategy indicates LGAs with over 50% STH prevalence are highly endemic and treatment is recommended twice a year. Enrolled and non-enrolled children ages 5-14 years received deworming drugs in both public and private primary and junior secondary schools. Teachers were trained to properly administer the safe and effective deworming drug, mebendazole.

Evidence Action designed data collection tools and a sampling method to observe, review, and measure the quality and success of teacher trainings, community mobilization, sensitization, and Deworming Day activities. Infotrak was chosen through a competitive selection process to collect the data, which Evidence Action then cleaned, entered, and analyzed. The findings are presented in this report.

## 3.0 Methodology

Infotrak recruited a total of 42 monitors and five supervisors, using pre-defined criteria, to monitor a random sample of 25 teacher training sessions and 40 schools where deworming took place. Monitors were rigorously trained by Evidence Action for three days from June 4-6, 2018. The training covered an overview of the NTD program with emphasis on school-based deworming; the basics of conducting a survey/administering a questionnaire; paper and electronic survey tools; field logistics; and data collection protocols. All participants took a pre and post-training test to ensure they fully understood their roles, and to determine the level of knowledge attained during training. Only participants who scored at least 70% in the post-test were selected for the monitoring exercise.

Prior to Deworming Day, teachers from all 1,584 targeted schools received a one-day training on MDA conducted by the LGA team (education secretaries, frontline health facility (FLHF) staff, NTD coordinators), who had been trained by the state-level master trainers. To assess the quality of teacher training and deworming, Evidence Action used stratified sampling to randomly select 25 of the 57 teacher training sessions, and 40 of the 1,584 targeted schools, for observation by independent monitors. The sample size was determined to ensure a 90% confidence level and a 10% margin of error.<sup>1</sup> Although 40 schools were targeted, only 39 were visited as one monitor could not locate the school within the community and could not reach a supervisor in time.

Parents residing around the selected schools were interviewed one day prior to deworming to gauge their level of awareness of the program. Monitors interviewed 209 parents: 117 parents of enrolled children and 92 parents of non-enrolled children.

On Deworming Day, monitors interviewed teachers regarding their plans for deworming<sup>2</sup>, their treatment knowledge, and any sensitization activities that were carried out in schools and local communities. Monitors then observed the drug administration process to verify that the required procedures were followed. After treatment, monitors aimed to randomly select and interview one parent, one teacher, two enrolled children, and one non-enrolled child. In total, the monitors interviewed 25 parents (present during deworming), 39 teachers, and 84 students (six non-enrolled

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<sup>1</sup> A confidence interval of 90% calculates such that if the same population is sampled on several occasions and interval estimates are made on each occasion the resulting intervals would cover the true population parameter in approximately 90% of cases.

<sup>2</sup> Due to a sampling error, the same schools were visited pre-MDA and during MDA. This will be corrected in future rounds to reduce the potential for observation bias.

and 78 enrolled) on Deworming Day. Due to the low number of non-enrolled children present on Deworming Day, monitors only interviewed six individuals from this group.

Finally, five days after deworming, monitors visited a different set of schools to carry out a data audit by collecting data from the class treatment register and school summary forms, and comparing it to data received at the state level to assess for accuracy.

**Table 1. Methodology for the process monitoring review**

Monitoring activity	Total population	Target sample size	Actual sample size
Total number of teacher training sessions	57	25	25
Total number of schools treated	1,584	40	39 <sup>3</sup>
Pre Deworming Day interviews			
Parents interviewed		240	209
Head teachers interviewed		40	39
Deworming Day interviews			
Teachers interviewed	–	40	39
Parents interviewed	-	40	25
Enrolled children interviewed	-	80	78
Non-enrolled children interviewed	-	40	6
Data audit	1,584	40	40

## 4.0 Results

### 4.1 Review of teacher training

#### 4.1.1. Attendance during trainings

The monitors visited 25 teacher trainings during the monitoring period. In 24 (96%) observed trainings, an attendance sheet was available. The average attendance was 61% of expected attendees across all trainings. Delayed communication about the training was the main reason provided for absences.

#### 4.1.2 Access to training materials

Teacher handouts were distributed in all trainings while school summary forms, treatment registers, and school posters were distributed in at least 23 of the 25

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<sup>3</sup> One school was not visited as the monitor couldn't locate the school and the IM supervisor was unreachable within the activity timeframe

trainings (Figure 1). The availability of teacher handouts is critical in preparing for deworming. On Deworming Day, 77% of interviewed teachers said they used it as a guide while organizing and conducting treatment. The SAE management protocol was the least distributed material (52%) during the training sessions, but given its importance in guiding teachers to properly handle drug side effects or treatment complications, the state team should work to ensure it is available in all trainings of future treatment rounds (figure 1).

**Figure 1. Materials given to teachers during the teacher training sessions (n=25)**



### 4.1.3 Training topics covered

Seven topics were meant to be covered in the teacher trainings. These include information on the type of worms treated, transmission of worms, target population for treatment, drugs and materials used for deworming, types of side effects and management of SAEs, recording and reporting forms, roles and responsibilities of the various actors on Deworming Day, and community sensitization. Results of training monitoring across these topics are presented below.

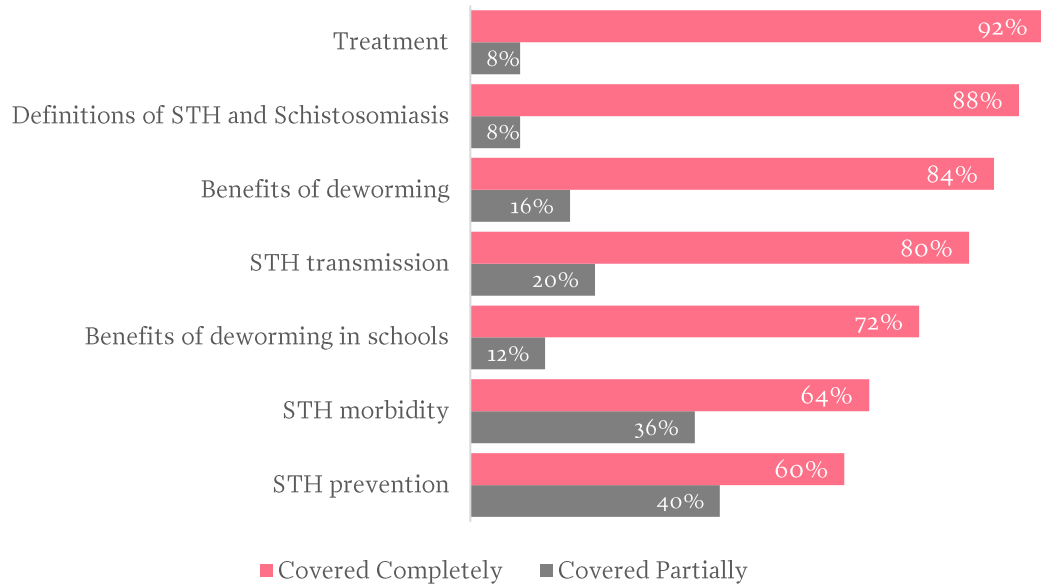
#### 4.1.3.1 Messages on health education

Figure 2 shows that in all of the 25 monitored trainings, all messages related to health education were covered to some extent. However, the benefits of deworming in schools were not covered in four (16%) trainings. Treatment instructions were completely<sup>4</sup> covered in 92% of the trainings while STH prevention was completely covered in 60% of the monitored trainings.

**Figure 2. Level of detail in covering health education messages across teacher trainings (n=25)**

<sup>4</sup> *Completely* indicates that all key messages were taught by the trainer as observed by the monitor

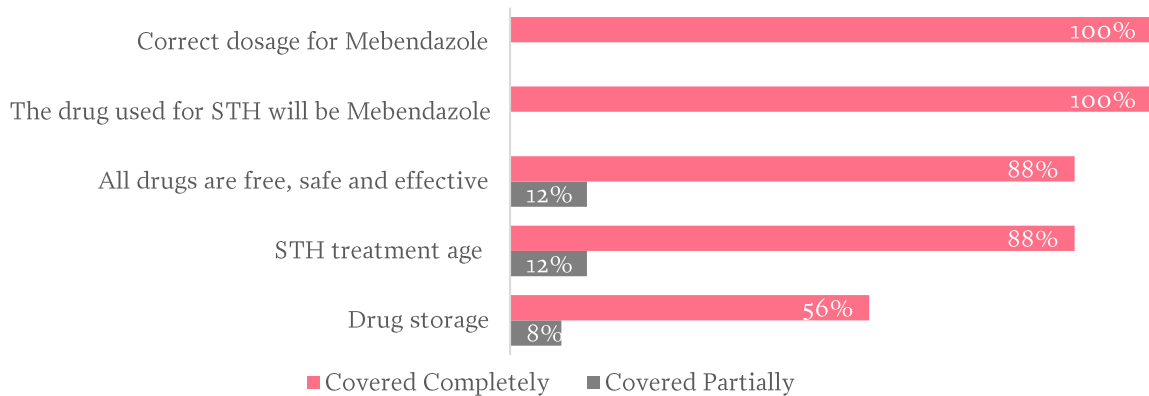




#### 4.1.3.2 Messages on drug administration

Messages on the correct STH drug and dosage were completely covered in all the trainings (figure 3). This is consistent with the Deworming Day observations where all monitors noted a single mebendazole tablet being given to each child. The main gap in messaging within this topic was related to drug storage, which was not covered in nine (36%) of the trainings. The state team should emphasize the importance of including this message in future rounds.

**Figure 3. Level of detail in covering drug administration messages across teacher trainings (n=25)**

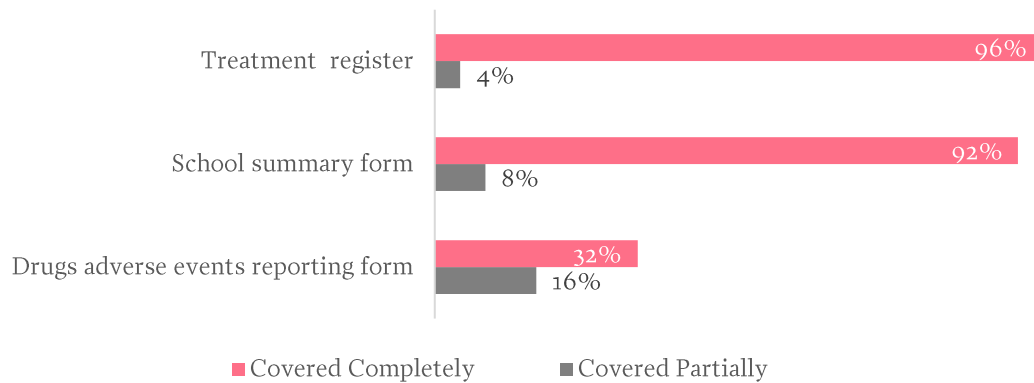


#### 4.1.3.3 Messages on recording and reporting forms

Messages on treatment forms and school summary forms were covered in all the trainings, with treatment registers completely covered in 96% of the trainings (Figure 4). Messages on the SAE protocol were only covered in 48% of the trainings, with only

32% of these including all details. The poor coverage of the SAE messages is probably attributable to the fact that the flip chart, the main teaching aid used by trainers, does not include an SAE section, increasing chances of skipping some detail. Teacher trainers are provided with a separate material to be used for the session on SAE management. The program team has an opportunity to fill this gap by updating the training flip chart so trainers are less likely to skip the important content for SAE management.

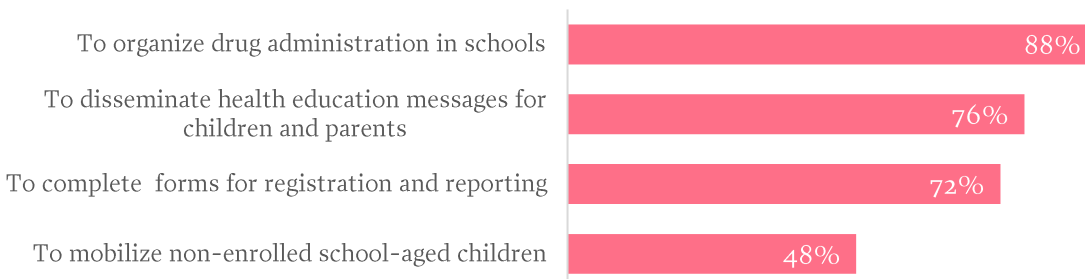
**Figure 4. Level of detail in covering reporting form messages across teacher trainings (n=25)**



#### 4.1.3.4 Roles and responsibilities

The trainers also covered the roles of different personnel in deworming, including NTD coordinators, education secretaries, FLHF staff, and teachers. Organizing drug administration in schools was the role most frequently covered (88%) for teachers across all trainings, while the mobilizing non-enrolled children was only covered in 48% of the trainings (figure 6).

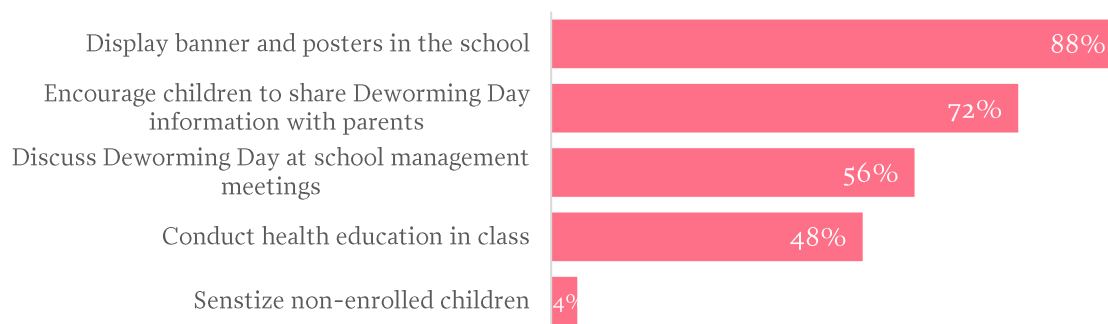
**Figure 6. Teachers' roles in deworming, as covered during training sessions (n=25)**



During trainings, teachers were also taught their role in community sensitization. Most trainings (88%) emphasized that teachers should display banners and posters in schools, while only 4% of trainings indicated the need to sensitize non-enrolled

children (figure 7). Fewer than half (48%) of the observed trainers noted that teachers should provide health education for students in their class. These are two important roles that trainers should highlight for teachers in the future.

**Figure 7. Teachers’ roles in community sensitization, as covered during training sessions (n=25)**



FLHF staff’s role in managing side effects was detailed in the majority (68%) of the trainings, but in 20% of trainings, trainers did not inform teachers of the role played by FLHF staff in the deworming program (Table 2).

The roles of NTD coordinators and educational secretaries were covered to some extent in just over half of observed trainings (52%), though the specific information provided to trainees varied. As seen in Table 2, three of their key responsibilities were only covered in roughly a third of observed trainings.

**Table 2. Trainer explanation of the role of health and education staff in the deworming program (n=25)**

Role of FLHF staff on the deworming day	Percentage
To manage side effects	68%
To manage, refer, and report children with adverse effects	56%
Role not covered	20%
Role of the NTDs coordinator and educational secretary in the deworming program	Percentage
To distribute appropriate quantities of drugs to each school	36%
To compile a report about the treatment coverage in the LGA	36%
To receive unused drugs from the schools at the end of the treatment period	32%
Role not covered	48%

#### 4.1.4 Training methods used

Trainers adopted several teaching methods in conveying content to the participants. Overall, lecture-based presentations were most common, and were seen in 88% of trainings, followed by group discussions in 64%. About 16% of trainers gave demonstrations, and only two administered group work.

The monitors reported that 92% of trainers administered a pre-test, and 88% gave a post-test to assess knowledge transfer. Pre-tests were administered in 23 trainings to 1,195 participants and post-tests were administered in 22 trainings to 1,424 participants. The analysis of pre and post-test scores showed an average pre-test score of 52%, and post-test average of 65%. This suggests a 13% knowledge increase attributable to the training but also shows significant room for improvement, as teachers should be able to demonstrate a stronger grasp on the program before acting as an ambassador in communities and ultimately providing treatment to children.

## 4.2 Deworming day assessment

### 4.2.1 Preparedness for Deworming Day

Monitors visited 39 randomly sampled schools on Deworming Day to assess MDA procedures and interview the deworming team (i.e., two or more teachers assigned to oversee the MDA; often a head teacher and a health teacher) to assess their knowledge and preparedness to deliver the MDA.

All (100%) head teachers indicated that at least one of their teachers had attended the deworming training. Only 22 (56%) of the schools had a plan to deworm non-enrolled school-age children. Most head teachers indicated that non-enrolled children were either not informed or would not be likely to come to school even if they were informed of the deworming program (table 3). On Deworming Day, only six (15%) of 39 monitored schools had at least one non-enrolled child present for deworming.

**Table 3. Head teachers’ reasons for not treating non-enrolled children (n=14)**

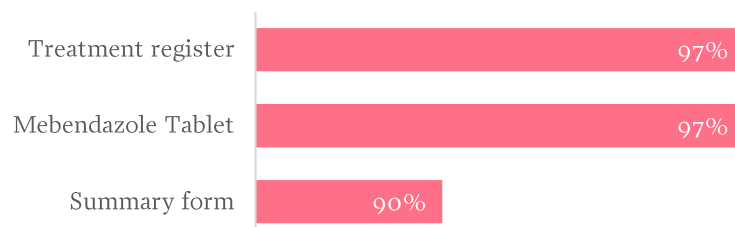
Reason for not deworming non-enrolled children	Percentage
Non-enrolled children will not accept to come	43%
Non-enrolled children were never informed	43%
The management is against deworming non-enrolled children <sup>5</sup>	14%

<sup>5</sup> A concern conveyed by monitors is that some schools do not want to take responsibility for children that are not registered. This has subsequently alienated some non-enrolled children from the deworming exercise.

### 4.2.2 Materials observed for deworming

On Deworming Day, monitors found that most (97%) schools monitored had treatment registers and the mebendazole tablets available (figure 8).

**Figure 8. Materials observed at schools on Deworming Day (n =39)**



### 4.2.3 Drug administration procedures

Monitors observed whether deworming teams adhered to key drug administration procedures (table 4). The findings indicate that all teachers knew the correct mebendazole dosage, with 92% requesting the child to chew the tablet. Monitors observed teachers using the treatment register, pre-recording names from the class register prior to deworming, and filling out all required elements in 92%, 87%, and 77% of visited schools, respectively. This suggests that training content on reporting forms was well-internalized. However, there are improvements required in other areas; for instance, handwashing prior to treatment was observed in only 28% (11 of 39) of schools visited.

**Table 4. MDA procedures observed by monitors during deworming (n=39)**

MDA procedure	Percentage
Teachers knew the correct dosage for mebendazole (1 tablet)	100%
Deworming team comprised of two teachers	92%
Teachers used treatment register to record treatment	92%
Teacher asked child to chew the mebendazole tablet	92%
The teacher had transferred the names from the class register to treatment register prior to deworming	87%
All sections of treatment register were completely filled out	77%
Teachers gave health education messages to children prior to treatment	77%
Teachers noted student absence for possible future treatment	77%
Teacher asked if child was sick or under medication before administering medicine	74%
Teachers properly disposed of spoilt tablets (n=24) <sup>6</sup>	60%

<sup>6</sup> Percentage derived from monitors that observed any spoilt tablets in schools.

Teachers ensured children washed their hands prior to treatment	28%
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#### 4.2.6 Managing side effects

On Deworming Day, monitors reported that majority (72%) of headmasters indicated that FLHF staff would manage side effects following treatment, while 23% said that the teacher would do so. On Deworming Day, monitors observed side effects in only three of the 39 schools visited. Vomiting was observed in three schools, with nausea and abdominal discomfort seen in one school each. None of the cases required a hospital referral, and were managed once the child was isolated and requested to lay down.

#### 4.2.7 Head teacher post-deworming interview

Upon completion of deworming, all interviewed head teachers described the Deworming Day as having been a success. Ninety-seven percent (97%) said they had sufficient drugs to carry out deworming. The one school that was short of mebendazole reached out to the LGA NTD Coordinator, who provided the required supply to complete deworming. At the end of the exercise, ninety percent (90%) reported having extra tablets left over. Of the teachers with leftover drugs, 80% planned to keep the tablets for mop-up, while 20% planned to return them to the LGA as per program strategy. The state's program strategy is to first conduct a mop-up and then return drugs to the LGA within five days; the program team should ensure that both aspects of this strategy are clearly communicated in future rounds of teacher training.

### 4.3 Community sensitization

A day before deworming, monitors visited 39 schools to interview head teachers about the activities they had undertaken to sensitize the community about the upcoming deworming exercise. They then proceeded to interview community members as well; monitors spoke with 209 parents (of non-enrolled and enrolled children) about their knowledge and preparedness for Deworming Day.

#### 4.3.1 Sensitization reported by parents

Sixty-seven percent (67%) of the 209 parents indicated that a member of the school had reached out to the children in the community to sensitize them on Deworming Day. The majority indicated that this was either a teacher (56%) or child (53%). The FLHF was mentioned by 10% of parents.

#### 4.3.2 Parents' knowledge on Deworming

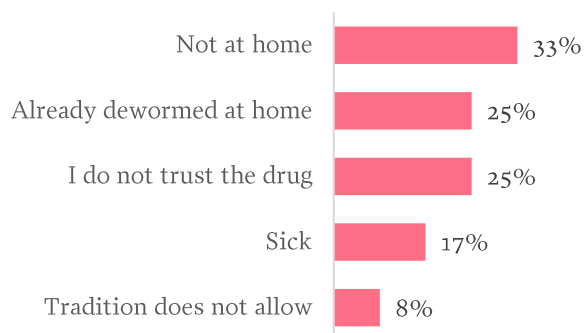
A total of 209 parents were interviewed, including 117 (56%) enrolled and 92 (44%) non-enrolled parents on key aspects of Deworming Day including the date of deworming, target age-group for deworming, and the type of worms being treated.

While knowledge of the date of deworming was high (78%), this was more common among parents of enrolled children (89%) compared to those of non-enrolled children (63%). Seventy-four percent (74%) of parents of enrolled children knew that deworming targeted ages 5-14, compared to 66% of parents of non-enrolled children. Only 56% of parents knew the type of worms treated; this knowledge was also higher among parents of enrolled (59%) children than those of non-enrolled children (49%).

### 4.3.3 Parents' reasons for not sending children for deworming

The majority (98%) of parents indicated that they would send at least one of their children for deworming, including 100% of parents of enrolled children and 91% of parents of non-enrolled children. Only 6% of parents indicated that they would not send any of their children for deworming. The major reason for not sending children for deworming was either that they were not at home (33%) or that parents did not trust the drug (25%) (Figure 9).

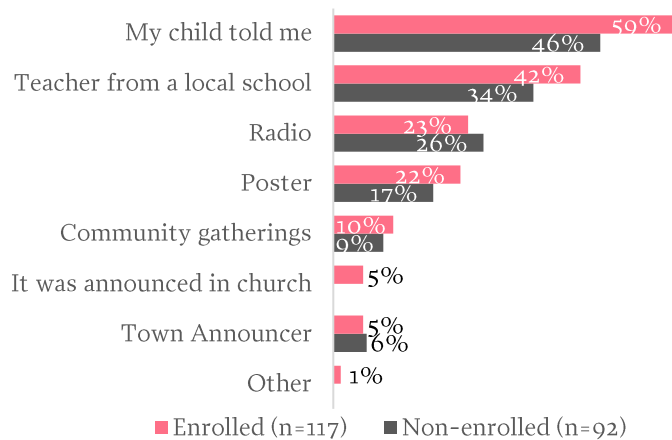
Figure 9. Reasons for not sending children for deworming (n=13)



### 4.3.4 Medium used for community sensitization

Parents were asked how they receive health messages and information within the community, as well as how they received deworming-specific information. The majority (59%) indicated that they receive health information through “word of mouth”. This is consistent with how parents heard about deworming (figure 10); either through being informed by their child (59%) or a schoolteacher (40%). Across all mediums, there was no significant difference in responses of either enrolled or non-enrolled parents.

Figure 10. Medium used to pass deworming information to enrolled and non-enrolled parents (n=209)



## 4.4 School hygiene facilities

School sanitation is a major factor in preventing intestinal worms. Monitors therefore observed the presence and usability of toilets and handwashing facilities within the schools. About 90% (35 of 39) of schools were found to have a toilet structure, with the ‘pour-flush’ structure being the most common (60%). In almost all (94%) of these schools, the toilets were regularly used by students.

However, only 18 (44%) of schools had handwashing facilities. This is consistent with the finding that only 28% of monitored schools were conducting handwashing prior to deworming, and highlights a need to improve the availability of handwashing materials and the expectation for hygiene within the schools.

## 4.5 Data audit results

During the MDA, deworming teams use a class treatment register to record the details of children treated and drugs used. Data is summarized by head teachers and entered in the school summary form. One copy of the school summary form is returned to the school’s zonal education office, a second copy is sent to the LGA office, and a third copy to the state office. The state enters data from the school summary forms into an electronic database and prepares a summary report for the national NTD program. Evidence Action used data collected by the independent monitors to check the accuracy of the report through a data audit in a sample of 40 schools. Evidence Action compared the data in the class treatment registers with data in the school summary forms in the 40 schools, and then compared their school summary forms with their data in the state database.



### 4.5.1 Class Treatment Register vs. School Summary Form

The data audit assessed seven components from the class treatment register and school summary forms: the number of enrolled children treated for STH (in total and disaggregated by gender), the number of non-enrolled children treated for STH (in total and disaggregated by gender), and the number of mebendazole tablets used.

In comparing these elements, error rates were derived to estimate the proportion of schools where the absolute percentage difference between a data element in the class treatment register versus the school summary form was greater than 10%. The median indicates the percentage difference for half of the schools when the absolute percentage differences between the treatment registers and school summary forms are arranged in ascending order.

The overall findings indicate that only 34% of schools summarized all elements in their summary forms within a 10% range of their corresponding class register values, implying that about 64% of schools under/over reported at least one data element by more than a 10% margin. Error rates were higher for data elements on enrolled children (33% to 41%) compared to non-enrolled children (5% to 6%), indicating that head teachers summarized elements pertaining to non-enrolled children better than those on enrolled children (Table 5).

The median was generally low (0% to 2%) across the various data elements, meaning that over half of the schools were able to match the elements in the school summary information within a 2% range of that in the class level register. Overall, given the fact that only 1 in 3 of the schools were able to summarize all elements in the class treatment form within a 10% range of the corresponding school summary form entries, the program thus needs to focus on strengthening the data management knowledge of the head teachers. To this end, future trainings should lay practical emphasis on the form recording and reporting topic.

**Table 5. Data variances in class registers and school summary forms**

Data elements (n=40)	Error rate	Median <sup>7</sup>
Treated for STH - Male	41%	2%
Treated for STH - Female	36%	0%
Treated for STH - Total	33%	1%

<sup>7</sup> The median represents the middle value in the range of the percentage difference between the treatment registers and the school summary forms. The percentage differences between the treatment register and summary form in all schools are arranged from lowest to highest and the mid-value is selected as the median.

Non-enrolled treated for STH - Male	6%	0%
Non-enrolled treated for STH - Female	6%	0%
Non-enrolled treated for STH - Total	5%	0%
Number of mebendazole tablets used	33%	2%

### 4.5.2 School Summary Form vs. State Electronic Database

Evidence Action also compared data in school summary forms with data in the state’s electronic database. Across all data elements, none of school summary forms’ data matched within a 10% range with the corresponding state database entry. Error rates were high across all data elements (79% to 94%; Table 6).

The high median across data elements (range of 72% to 253%) indicates that for over half of the schools, there is a difference as great as two and a half times between the figure recorded in the school summary forms and that of the state database.

With consideration given to the total treatment figures, these findings indicate that the figure shared by the state for the total enrolled children treated is nearly twice above or below that as summarized by the head teachers.

However, it should be noted that the present design of the school summary forms leaves room for error in comparison of records, given that school names rather than unique identifiers are used to match and compare data. There are no state-issued ID numbers for schools, which could ease matching of records at state level.

**Table 6. Difference between data in school summary forms and state database**

Data elements (n=40)	Error rate (+/- 10)	Median
Treated for STH - Male	91%	160%
Treated for STH - Female	94%	133%
Treated for STH - Total	94%	180%
Non-enrolled Treated for STH - Male	79%	100%
Non-enrolled Treated for STH - Female	82%	100%
Non-enrolled Treated for STH -Total	94%	72%
Number of mebendazole used	90%	253%

### 4.5.3 Data audit conclusions

The data audit findings indicate that state data managers were unable to correctly enter all data elements from the school summary forms into the state database for any of the schools, while only 34% of head teachers accurately transferred the class register records into the school summary form. This, coupled with the generally high error rates and median figures both at school and state level, points to a need for better data management practices and trainings at both state and school level.

Further, the state should consider developing unique school ID numbers, not only for the monitoring exercise, but also to enable easier data tracking and referencing of schools for other purposes within the state. Given the opportunity, Evidence Action can also support the state team to consider and implement a suitable approach to improve the accuracy and quality of data in the next round of treatment.

## 5.0 Lessons Learned

### What worked well

1. Key training materials including teacher handouts, school summary forms, treatment registers, and school posters were distributed in at least 23 of 25 of trainings observed. This suggests that the distribution cascade is functioning effectively and that most schools in the state were prepared and well-organized for deworming day.
2. Adherence to key MDA procedures was noticeably high across the 39 schools monitored on Deworming Day. Aside from handwashing, where compliance was only observed in 28% of observed schools and would have been difficult in many schools due to non-availability of handwashing facilities, adherence to all other key procedures ranged from 60% to 100%.
3. The efforts in community sensitization were successful, with 98% of parents (both of enrolled and non-enrolled children) indicating that they would send at least one child for deworming. Seventy-eight percent (78%) of parents knew the date of deworming, while 72% could recount the targeted age group of 5-14 years. This signals relatively strong community demand for deworming but can be further developed in future rounds, with additional focus on instilling an understanding of STH prevention methods.

## What needs to improve

1. The overall attendance at teacher training was 61% of the planned figure, with delayed communication cited as the major reason for participants' absentia. Given the importance of teachers receiving training before conducting the MDA, before the next round, the state team should more strongly emphasize that timely communication of training dates is key.
2. While cases of side effects were fortunately few (only three registered), there is a need to improve preparation for managing side effects and SAEs. Only about half of the training sessions monitored distributed the SAE management protocol and completely covered the key information to be shared during training. State master trainers need to highlight the importance of proper preparations for the management of side effects and SAEs during training of teacher trainers and lay further emphasis by including a role play or practical activity for side effect and SAE management in the training flip chart.
3. Following their training, teachers' post-test scores increased by an average of 13%. While this attests to the positive effect of trainings, the average post-test score was still relatively low (65%). Overall knowledge retention could be improved by employing additional methods beyond the lecture-based approach. For instance, demonstrations and group work were only noted in 16% and 8% of observed trainings respectively; role play should also be recommended to trainers as an effective teaching approach.
4. Handwashing practices were noticeably poor. Only 28% of children were seen washing their hands prior to treatment, which is not helped by the fact that only 44% of schools had handwashing facilities. The state team should consider opportunities to leverage other programs or partnerships with public and private groups working on relevant WASH activities in the state.
5. Most (86%) head teachers indicated that non-enrolled children were either not informed or would likely not come for deworming at their schools; only a few mentioned that the management is against deworming non-enrolled children. This is aligned with supervisory feedback that head teachers' reluctance to take responsibility for children not enrolled in their schools is a factor in the low turnout of non-enrolled children. It is advised that the MoE holds meetings with heads of primary and junior secondary schools to advocate for treatment of non-enrolled children in their schools.
6. The data audit indicated that state data managers were unable to correctly record school summary data in the state database, while only 34% of head teachers correctly summarized class registers in the school summary forms. It is advised that trainers at all levels (i.e., master training, LGA training, and teacher training)

place additional focus on data management practices. To provide a level of data quality assurance, the state should consider adopting unique school ID numbers.

## 5.3 Conclusion

The monitoring exercise set out to assess the quality of the deworming program's training cascade, MDA, and data recording and reporting practices. The findings highlight several areas of success as well as aspects in need of improvement. Generally, material distribution, training topic coverage, and community sensitization were performed with good results. Aspects requiring improvement include stronger advocacy at school level for treatment of non-enrolled children, better data management practices at both school and state level, and the need to adopt unique school ID numbers. Evidence Action is committed to working with the state team to continue driving programmatic improvements that will ultimately contribute to eliminating worms as a public health problem for Ogun state's children.