

Deworm the World Initiative - Pakistan

A comprehensive report from the second wave of School-Based Deworming implementation in Islamabad Capital Territory (ICT), Pakistan

April 2019

Prepared by: Evidence Action

For: Islamabad Capital Territory, Interactive Research & Development, Indus Health Network

Partners



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Glossary

AEO	Area Education Officer
BECS	Basic Education Community Schools
NCHD	National Commission for Human Development
FDE	Federal Directorate of Education
ICT	Islamabad Capital Territory
IHN	Indus Health Network
IRD	Interactive Research & Development
MDA	Mass Drug Administration
SBDP	School-Based Deworming Program
STH	Soil-Transmitted Helminths

1.0 Executive Summary

An estimated 570,000 school-age children (5-15 years old) in Pakistan's Islamabad Capital Territory are at-risk of infection by soil-transmitted helminths. In January 2019, Pakistan's Islamabad Capital Territory (ICT) conducted its first round of school-based deworming targeting all 181,390 children enrolled at public schools, all 29,360 children not enrolled at school, and 32,030 children enrolled at 140 private schools. Due to the small number of private schools that participated in the January deworming campaign, a second wave of deworming was implemented in April 2019 specifically targeting children from private schools across ICT. This second wave of deworming targeted 253,762 children aged 5-15 years old at 981 schools (19 public and 962 private schools). Of the 253,762 children targeted, 228,097 were in private schools while 25,665 were in public schools. Non-enrolled and out of school children were not targeted in the second wave of deworming. In order to train teachers about the roles they would play during the deworming campaign, representative teachers from all 981 schools were invited to training sessions approximately 1 to 2 weeks prior to "Deworming Day".

To assess effectiveness of implementation, adherence to implementation protocol, training quality and supply chain effectiveness in order to inform quality of implementation and areas of improvement, the technical assistance partnership of Evidence Action and Interactive Research and Development (IRD) contracted an independent survey firm (Gallup Pakistan) to conduct independent monitoring of activities during implementation.

Interviewing head teachers on Deworming Day revealed that 46% of the 981 schools participating in the deworming campaign sent at least one teacher to the training. From monitoring attendance records at the training sessions, only 60% of the invited teachers were in attendance, with 83% on time (arriving prior to training start).

In general, it was observed that 82% of trainings distributed all key training materials (reporting forms, posters, drugs and banners) to the teachers in attendance to take back to their schools. However, observations on Deworming Day revealed that only 43% of schools had posters and banners available.

All seven planned topics to be covered received coverage in at least 76% of the trainings, with topics on the target population, recording and reporting of forms covered in all (100%) monitored trainings. Post-training interviews with participants indicated high proportions of attendees (at least 80%) knowledgeable as regards to the key messages related to topics on health education and the target population.

Teachers (42%) and children (40%) were the primary sources of Deworming Day information cited by the parents. However, the reach of these together with other modes only reached 73% of parents, with only half (56%) of those knowledgeable indicating that they would be sending at least one of their children for deworming. It is suggested that key elements such as the target age-group and the purpose of the deworming as treating worms be emphasized during subsequent treatment rounds.

Visiting schools on Deworming Day revealed that only 63% of targeted schools conducted deworming. Of the schools that were conducting deworming, observational monitoring revealed that the correct dosage of mebendazole was administered at 100% of schools, and 90% of schools utilized the treatment forms (Form 1A, Form 1B).. However, interviews conducted with teachers prior to drug administration revealed that 27% were not aware of the drug to be administered. Further, 39% of teachers had not made prior transfers of names from the class register to Form 1A, a gap which could have increased their Deworming Day workload. To this end, teachers that attend the trainings should be encouraged to share the information they acquire.

2.0 Background

Parasitic worm infections, such as soil-transmitted helminthiasis (STH), interfere with children's nutrient uptake, causing anemia, malnourishment, and impaired mental and physical development¹. These conditions 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 school at all. The World Health Organization (WHO) estimates that over 1.5 billion people are infected globally with STH, with over 860 million children worldwide in need of treatment². A national STH prevalence survey conducted in 2016

¹ <https://www.who.int/news-room/fact-sheets/detail/soil-transmitted-helminth-infections>

² http://apps.who.int/neglected_diseases/ntddata/sth/sth.html

found that over 16 million school-age children (5-15 years) in Pakistan are at risk of STH and require regular treatment, with an estimated 570,000 at-risk school-age children reported in Islamabad Capital Territory (ICT).

Following a series of consultative meetings, a technical assistance partnership of Interactive Research & Development (IRD), Indus Health Network (IHN) and Evidence Action was established with the aim of providing comprehensive technical assistance to the ICT administration and federal government to plan, implement and monitor a school-based deworming program.

The goal of school-based deworming is to eliminate worms as a public health problem, and therefore, control the morbidity of STH within school-age children (SAC) living in identified at-risk areas necessitating treatment. The first mass drug administration (MDA) campaign of ICT's school-based deworming program was conducted in January 2019 targeting, 181,390 children enrolled at all ICT's public schools, all 29,360 children not enrolled at school, and 32,030 children enrolled at 140 private schools. Due to the poor participation of private schools in this campaign, government stakeholders specifically requested for a second wave. In the second wave 962 private schools and 19 public schools were targeted, with an aim of deworming of 253,762 children (228,097 children from private schools and 25,665 from public schools).

To identify opportunities for program improvements, Process Monitoring was conducted by a selected firm (Gallup Pakistan) in an effort to assess the effectiveness of implementation, adherence to implementation protocol, and supply chain effectiveness. Data from a sample of 16 teacher trainings, 49 schools on Deworming Day, and 147 parents participating in the MDA was collected.

3.0 Methodology

Process monitoring and coverage validation was conducted for the first wave of deworming by an independent firm (Gallup Pakistan), selected through a competitive bidding process. For the second wave, Gallup was retained to conduct process monitoring (coverage validation was not conducted for the second wave). Gallup engaged 55% of the monitors that had been trained during the first wave and arranged two half days training for all monitors, with technical support from Evidence Action and IRD.

To assess the quality of teacher training, as well as the implementation of deworming, Evidence Action randomly selected 16 of the 20 teacher training sessions, and 60 of the 981 targeted schools for observation by independent monitors. The samples were distributed across the different education sectors for representation and were calculated to ensure a 90% confidence in the data and allowing up to 10% chances of error³.

Parents residing in areas around the selected schools were interviewed on Deworming Day to gauge their level of awareness of the program. At each of the 60 visited schools, monitors targeted 3 parents (180 parents in total) for such interviews, 2 parents of children enrolled at the school and 1 parent of a non-enrolled child (in total, 120 parents of enrolled children were targeted for interviews, and 60 parents of non-enrolled children).

On Deworming Day, monitors interviewed head teachers and teachers regarding their plans for deworming, their treatment knowledge, and any sensitization activities they had carried out in schools and local communities. Monitors then observed the drug administration process to verify that the required deworming procedures were followed. After treatment, monitors randomly selected and interviewed one teacher and three enrolled children.

Table 1: Targeted and actual sample sizes

Monitoring activity	Total population/ number	Target sample size	Actual sample size
Teacher training sessions	20	16	17 ⁴
Schools targeted for monitoring on Deworming Day	981	60	49 ⁵
Parents to non-enrolled children interviewed on Deworming Day		60	49
Parents to enrolled children interviewed on Deworming Day	-	120	98
Deworming Day Interviews			
Enrolled children interviewed	-	180	147

³ 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.

⁴ An extra training session was monitored by Gallup Pakistan exceeding the target of 16 teacher training sessions.

⁵ Field work challenges were encountered in 25 out of 60 schools. Of these, 14 were replaced and monitored while the other 11 were replaced but didn't conduct deworming even following replacement. This explains why samples on Deworming Day were not met.

Head teachers interviewed		60	49
Teachers interviewed	-	60	49

4.0 Results

4.1 Review of teacher training

Monitors were dispatched to observe a sample of teachers' training to measure the delivery and effectiveness of teacher training sessions. These trainings were facilitated by master trainers, who had received a prior training facilitated by Evidence Action and IRD. Prior to the start of the teacher training sessions, the monitors held interviews with the trainers to gauge their preparedness to conduct the training sessions.

The findings indicate that 16 (94%) of 17 trainers interviewed prior to the start of the trainings had attended a training within 15 days of the teacher training session, with all in attendance indicating that the training made them sufficiently prepared to conduct the day's sessions. The teacher trainings lasted a day, with each training on average having at least two trainers. At least one official from the education sector was present in all trainings. Trainers from the Health sector were present in 2 of the trainings. Trainers indicated using a mix of methods including Short Message Services – SMS (65%), phone calls (53%) and official memos (24%) to invite participants for the trainings. While key materials (training booklets, reporting forms, drugs, posters and banners) were distributed to all trainers, only 15 (88%) of the trainers indicated that the availed materials were sufficient. Stationery was also provided to 13 (76%) of the trainers.

Following the interviews with trainers, the independent monitors made observations aimed at assessing the teacher training sessions. These form the content of the following sections.

4.1.1. Attendance during trainings

From the 17 randomly selected and monitored teacher trainings, the use of an attendance register was noted across all (100%) trainings visited. In terms of school representation in trainings, the Deworming

Day interviews with head teachers indicated that 46% of interviewed head teachers either attended or sent a teacher to the trainings, potentially implying that 46% of schools were represented in the trainings.

The average attendance rate was 60% (an average of 23 from an average expected 39 attendees), with 83% of those in attendance on time for the teacher training sessions. Emphasis in future rounds should be geared towards ensuring high and timely attendance of the training sessions.

4.1.2 Access to training materials

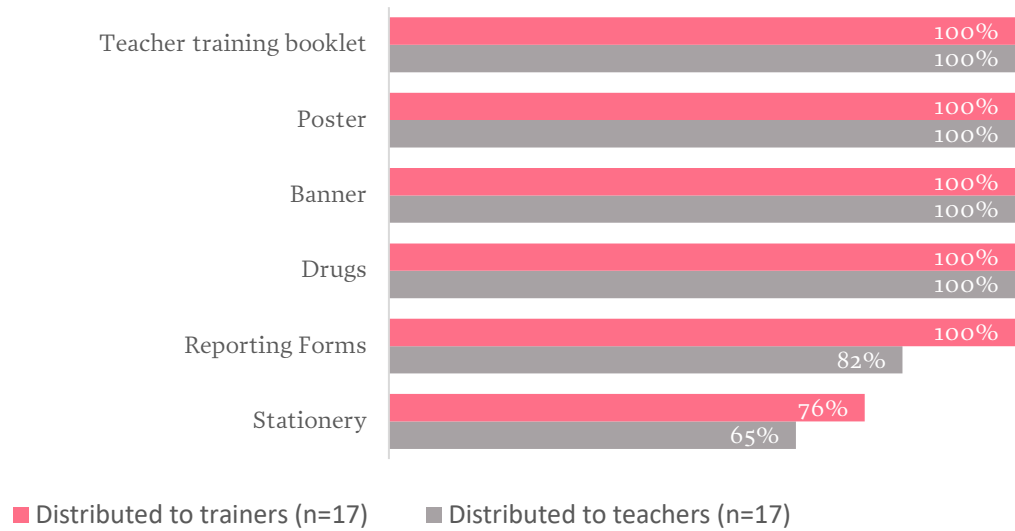
From the master trainer sessions, all trainers reported receiving the necessary key materials (training booklets, monitoring forms, drugs, posters and banners) to aid in conducting teachers' training and be passed onto teachers as they conduct the teacher training sessions.

From monitor observations, the teacher training booklet, a critical resource while conducting teacher trainings, posters, banners, drugs as received in the master trainings were distributed in all teacher trainings while reporting forms were distributed in 82% of the trainings (**Figure 1**). Additionally, stationery was availed to all participants in 11 (65%) of trainings.

Drugs were distributed at 100% of the training sessions. Drugs were provided to teachers in different forms: at 100% of training sessions, sealed original containers were distributed, and to account for schools with small student populations, some sessions distributed unsealed original containers (24%) or bags (24%).

Deductively, distribution of key materials during trainings was commendable.

Figure 1: Materials distributed during master and teacher trainings (n=17)



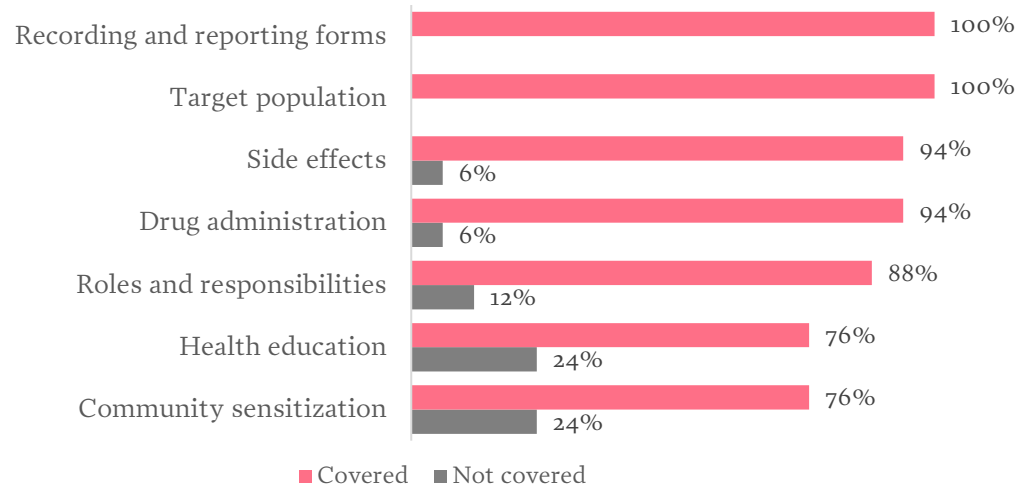
4.1.3 Topic coverage

Training sessions were also monitored to assess training topic coverage during the teacher trainings, with trainers required to cover a total of seven topics. These included the target population, health education, drug administration, side effects, recording and reporting forms, the roles and responsibilities of the various actors on Deworming Day and community sensitization.

All the seven topics were covered in at least 76% of the trainings monitored with topics on reporting and recording forms as well as the target population being covered in all (100%) trainings (**Figure 2**).

While most of the messages were centered on conducting the deworming, 24% of trainers didn't cover any role related to community sensitization.

Figure 2: Coverage of topics during trainings (n=17)



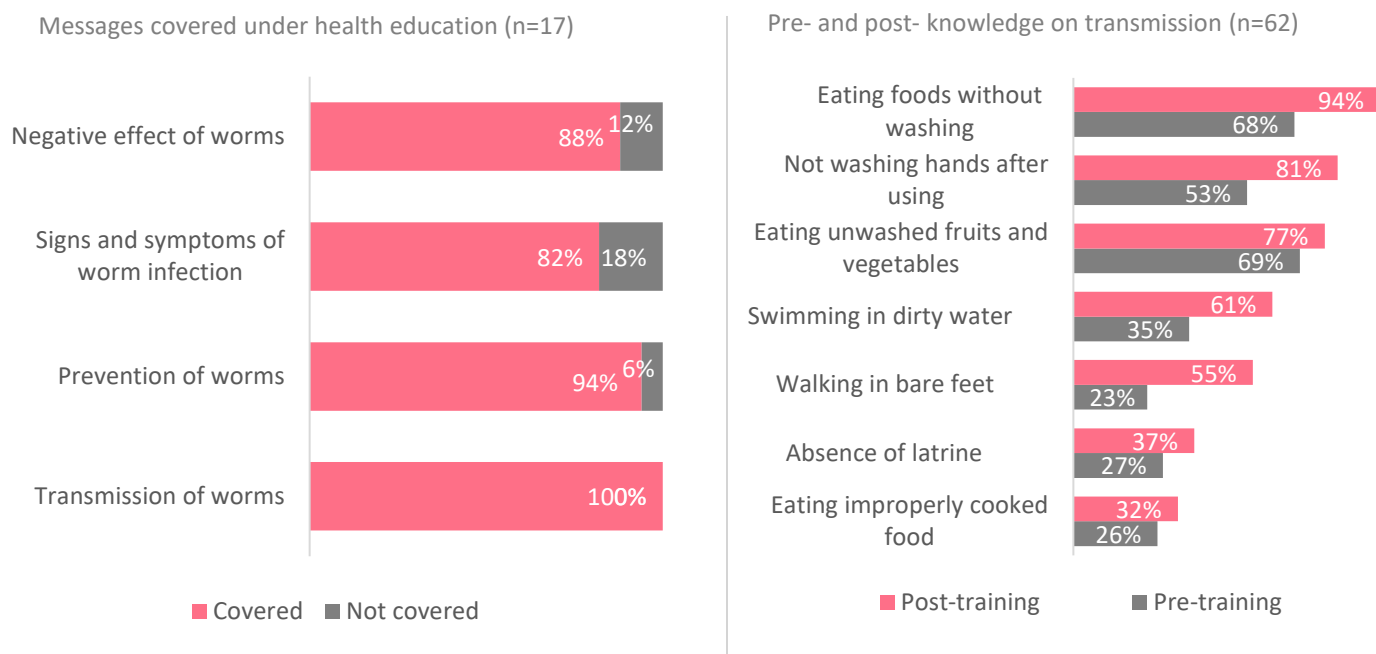
To gauge the effectiveness of the teacher training sessions in terms of knowledge transfer, a sample of 62 participants spread across the training venues was selected for both pre- and post-test interviews. It should be noted that the same set of participants for the pre- undertook the post-test interviews. For the majority of the aforementioned topics, monitors assessed coverage of individual messages as well as gauged participants' pre- and post-training knowledge levels as a proxy for determining the effectiveness of the training sessions.

The findings are presented below: -

4.1.3.1 Health Education

Four messages were covered under the topic of health education. From monitor observations, only the message on transmission of worms was covered in all (100%) trainings monitored (**Figure 3**).

Figure 3: Health education topic coverage and participants' pre- and post-knowledge on transmission (n=17)



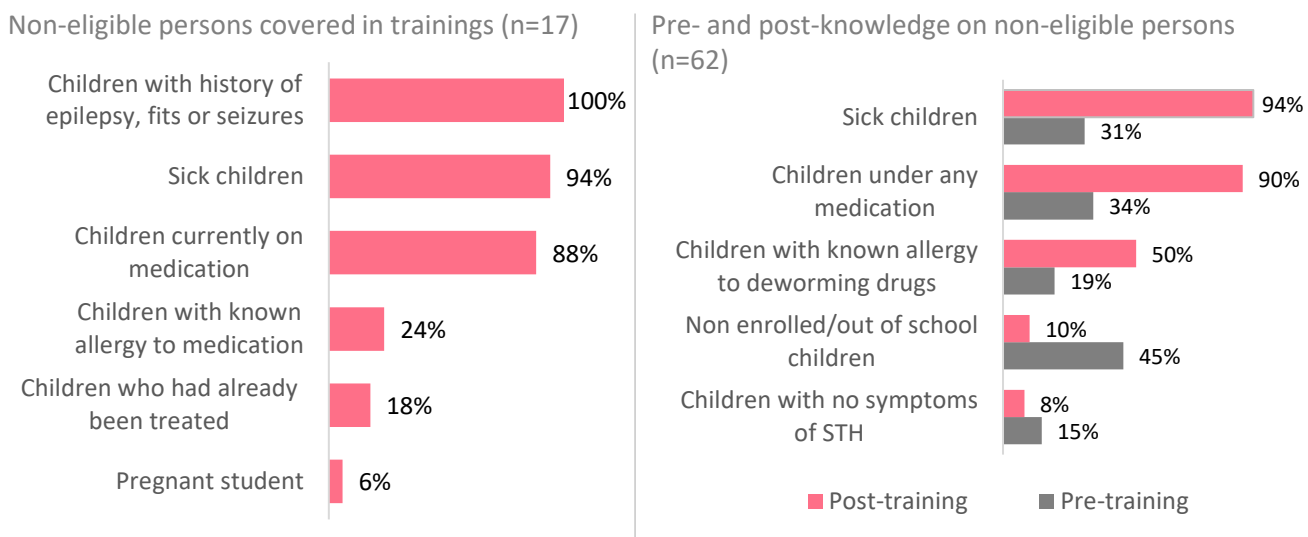
Post-training interviews with participants revealed that all (100%) those interviewed could cite at least one way a person gets infected with worms. Not washing hands after using the toilet, eating food with unwashed hands and walking barefoot were the most cited means of worm infection in the interviews conducted.

4.1.3.2 Target Population

Proper identification of the target group is critical in meeting the program target of treating all eligible at-risk persons. All trainers highlighted that both the enrolled and non-enrolled children; aged 5-15 years formed the target group for this deworming round. The ICT deworming date was also echoed in all trainings monitored.

Equally critical to program success is the identification of the non-eligible individuals. The highest mentions were noted for children with a history of epilepsy, fits or seizures as well as sick children on Deworming Day (**Figure 4**).

Figure 4: Non-eligible persons covered in trainings and participants' pre- and post-training knowledge



During post-training interviews, monitors noted considerable increases in the proportion of participants citing sick children (increase of 63%) as well as those under medication as non-eligible for the medicines (increase of 56%). Also noteworthy are the drops in the proportions of teachers indicating that they would not provide drugs to children not enrolled in school or those without STH symptoms.

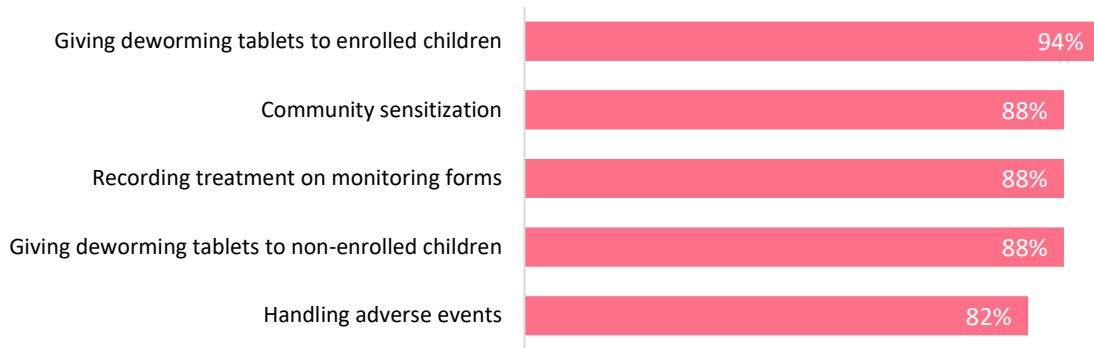
However, 50% of teachers are still likely to provide deworming drugs to children with known allergies. The program should focus on addressing this in future trainings.

4.1.3.3 Roles and Responsibilities

The success of the MDA hinges on proper identification of the contribution of various actors and the roles they play in the exercise. The roles of teachers and health officers (Medical Officers/Union Council Medical Officers) were covered by trainers in 78% and 88% of trainings monitored respectively.

From monitor observations, messages centered on teacher roles received good coverage (at least 82%), with the provision of tablets to enrolled children (94%) receiving most of the mentions (**Figure 5**). Deductively, the high coverage of roles imply that this topic was well handled.

Figure 5: Teacher roles and responsibilities covered by trainers in teacher trainings (n=17)

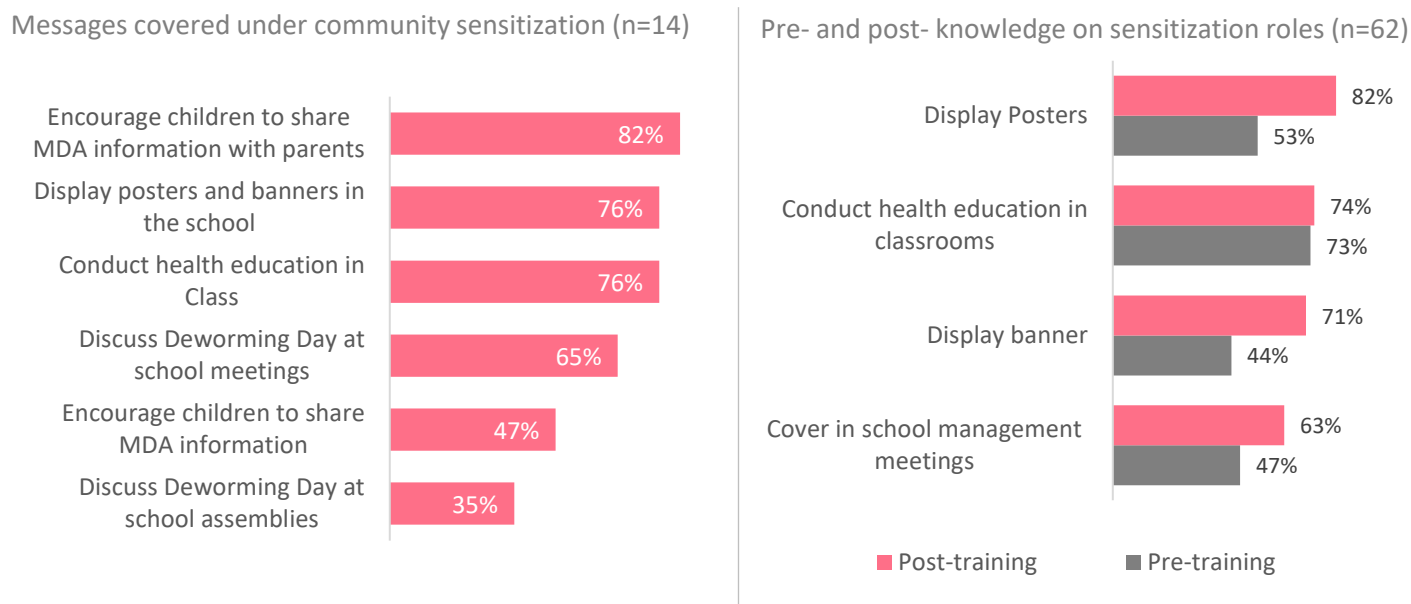


4.1.3.4 Community Sensitization

Community awareness of the MDA is pivotal to the achievement of the target therapeutic coverage of at least 75% of the at-risk population. Monitors noted that 88% of trainings indicated to teachers that community sensitization was an activity they had to conduct. In terms of actual roles, encouraging children to share MDA information with parents (82%), displaying posters and banners at schools (76%), and conducting health education in class (76%) were the most mentioned. However, worth noting is that only 35% of the monitored trainings covered the teacher role on discussion of Deworming Day at school assemblies. Given that school assemblies present a large platform for sharing deworming information, trainers should be encouraged to make use of it to convey deworming information. - **Figure**

6.

Figure 6: Teacher sensitization roles and participants' pre- and post-knowledge



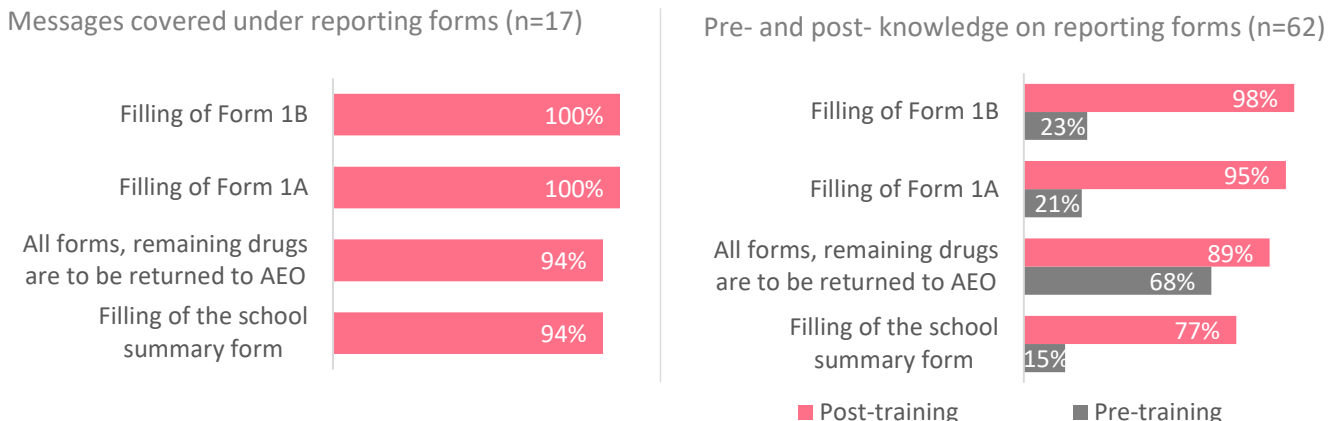
During post-training interviews, monitors noted an increase in the proportion of participants knowledgeable in all messages covered in the community sensitization topic, with up-to 29% more (from 44%) teachers identifying the display of posters as one of their roles (Figure 6). The most cited key messages that teachers indicated they would share with the community as revealed from post-training interviews were the target age-group (90%), that drugs are free (82%) and the date of deworming (75%).

4.1.3.5 Recording and reporting forms

During MDA, teachers are required to fill out three forms including Form 1A (to record treatment of the enrolled children), Form 1B (to record treatment of the non-enrolled) and the school summary form. Adequate preparation in this area is essential to MDA success. Trainers are also required to inform teachers that all forms as well as any remaining drugs post-MDA are to be returned to the Area Education Officer (AEO) and Directorate of Basic Education Community Schools (BECS).

Based on monitor observations, all trainings covered the filling of forms 1A and 1B. A high proportion of trainers (94%) also highlighted the need to return all forms, remaining drugs to the AEO (Figure 7).

Figure 7: Messages covered under reporting forms and participants' pre- and post-training interview



From post-training interviews, the proportion of teachers knowledgeable as regards the correct target group for use of forms 1B and 1A was notably high at 98% and 95%, increases of 75% and 74% respectively, from those noted in the pre-training interviews.

During post-deworming interviews with head teachers, monitors noted that 18% of respondents were not knowledgeable as regards which forms (Form 1A and 1B) would feed into the school summary form. Further findings during the Deworming Day indicated that the majority of head teachers (86%) did not know who they would give the summary forms post-deworming (Area Education Officer). This needs to be looked into in future trainings to ensure that the cascade process is well covered to those actively involved in this activity.

4.1.3.6 Drug Administration

Based on monitors' observations, messages on drug administration generally received excellent coverage (**Table 2**). Aside from the message on drug storage that was only covered in only 53% of trainings monitored, all other messages were covered in all trainings monitored.

Table 2: Messages on drug administration covered in teacher trainings (n=17)

	Percent
STH drug is Mebendazole	100%
One Mebendazole Tablet to be given to each child	100%
Names of all enrolled children need to be copied from the class register on to class level summary.	100%
Complete class level summary form as the child is treated	100%

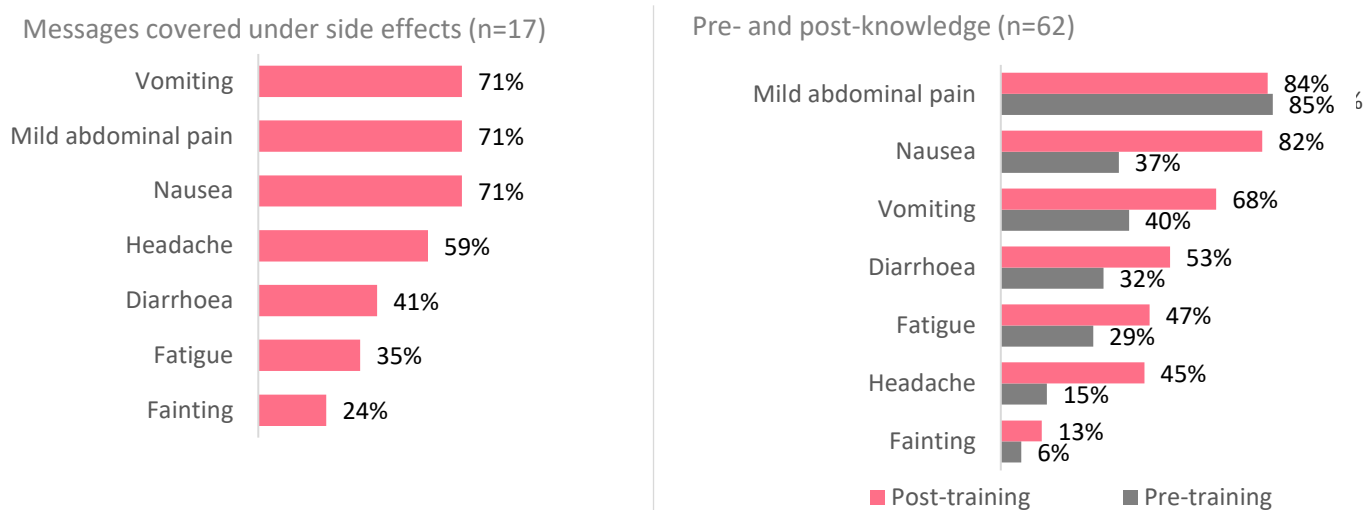
For non-enrolled children use Form 1B to record treatment	100%
Check child’s mouth to make sure that each child chews and swallows the tablet	94%
Under the program, all drugs are free, safe and effective	76%
Drugs must be stored in a clean, safe, dry and cool location	53%

4.1.3.7 Side Effects

Side effects are potential outcomes of any treatment that may or may not be directly related to the treatment being provided. To ensure that teachers were effectively equipped to handle any such cases, trainers were required to provide information on possible side effects and how to handle them.

Vomiting, mild abdominal pain and nausea were covered in 71% of the trainings, while fainting was only covered in only 4 (24%) of trainings monitored – the lowest among all side effects considered (**Figure 8**).

Figure 8: Messages on side effects and participants’ pre- and post-knowledge on side effects considered normal



The proportion of participants that could cite at least one side effect rose from 85% in pre-training interviews to 98% in the post-training, with mild abdominal pain (84%) and nausea (82%) being the most cited side effects in post-training interviews.

In terms of managing any children with any SAEs, majority of teachers in post-training interviews cited taking the child to an open and shaded area to allow the children lie down (65%) as well as giving reassurance to any affected child that their symptoms will likely pass quickly (63%) as precautions they

would take. The proportion of teachers citing the aforementioned precautionary measures increased by 36% and 32% from the proportions noted in pre-training interviews respectively. In the event of any serious or persistent adverse effect lasting more than 2 hours, 81% of participants from the post-training interviews cited that they would take the children to the nearest health facility (a 4% increase in proportion of respondents), a finding in line with the recommended practice in the event of any such cases.

4.1.4 Training Feedback

In a bid to improve future trainings, monitors sought feedback from participants as regards the overall training rating as well as potential areas for improvement.

On a 1-5 scale (1 implying so bad, 5 implying very good), both the overall training as well as the trainers were given a 4.5 rating. Conclusively, it can be said that the trainings were very good. General recommendations as regards improving the training sessions included increasing the frequency of trainings and campaigns towards eliminating worms (38%), having a well-organized training as well as trainers observing punctuality (15%), and ensuring the training venue accommodates the number of participants (8).

During Q&A sessions during/after presentation of training topics by trainers, majority of participants asked questions as regards SAEs (59%), drug administration (47%) and how to fill out monitoring forms (47%).

4.2 Community Sensitization

Community sensitization prior to conducting the Deworming Day is an evidenced key ingredient for MDA success. On Deworming Day, monitors held interviews with 98 and 49 parents of enrolled and non-enrolled children. Key to this interview was to gauge awareness of the upcoming MDA, as well as their sources of information for the MDA. At the end of the interviews, monitors also sought to determine what proportion of parents would be sending their children for deworming as a proxy for the effectiveness of the sensitization efforts.

4.2.1 Parent Demographics

By gender, the majority of the respondents were female (64%). In terms of primary occupation, majority of parents indicated that they were stay-at-home parents (44%), followed by those with small businesses (22%). These proportions (primary occupation) were similar across both sets of enrolled and non-enrolled parents. Both sets of parents also had an average of 2 children in the target group (5-15 years). The average age of children in the households was 9 years.

Only 24% of parents reported that they had not achieved any level of schooling, with a higher proportion among the parents of the non-enrolled (33%) as compared to 19% among those for enrolled children. Majority of parents of enrolled children (29%) indicated that they had achieved a secondary school level of education.

4.2.2 Parents knowledge on deworming

Only 73% of parents interviewed on Deworming Day were aware of deworming happening within their communities, with this proportion higher among parents of the enrolled children (83%) as compared to their non-enrolled counterparts (55%).

Monitors posed further questions to parents that were aware of the upcoming MDA as regards their knowledge of the date of deworming, target age group and what the treatment was for. This information is embedded in the various sensitization sources.

Among parents who were aware of deworming day (73% of parents), 88% knew the correct deworming date, albeit slightly higher among the parents of the enrolled children (93%) compared to only 75% among those for the non-enrolled children.

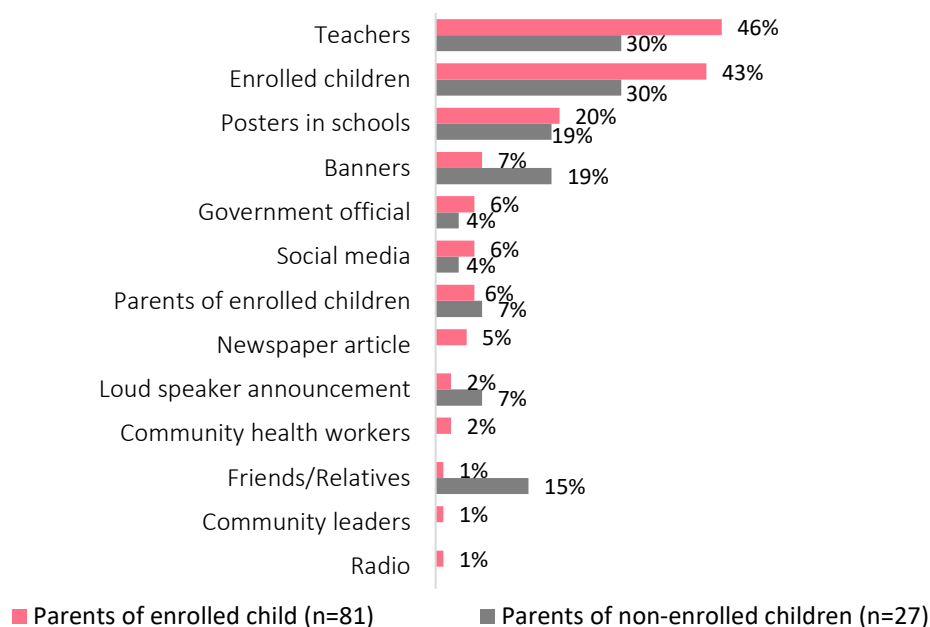
On the other hand, parental knowledge of the purpose of medicines as treating worms was low (overall proportion at 73%, 76% for parents of enrolled children and 63% for parents of non-enrolled children). Even lower was the proportion of parents knowledgeable as regards the target age-group of 5-15 years, noted to stand at 68%, with 70% of the parents of enrolled children and 59% for the non-enrolled children. Emphasizing these aspects (deworming date and purpose of deworming) in equal voice with the date is critical for program success.

4.2.3 Sources of Deworming Day information

Of the parents that reported hearing about deworming, most cited receiving this information from either a teacher (42%) or an enrolled child (40%). These, together with the poster (19%) remained the dominant sources of information when this statistic was disaggregated across parents of enrolled and non-enrolled children - **Figure 9**.

These modes together with social media (30%) also topped the parents' preferred means of receiving information on future deworming activities. Subsequent sensitization plans should leverage these findings, as they are in line with the parents' preferred means of receiving future deworming information.

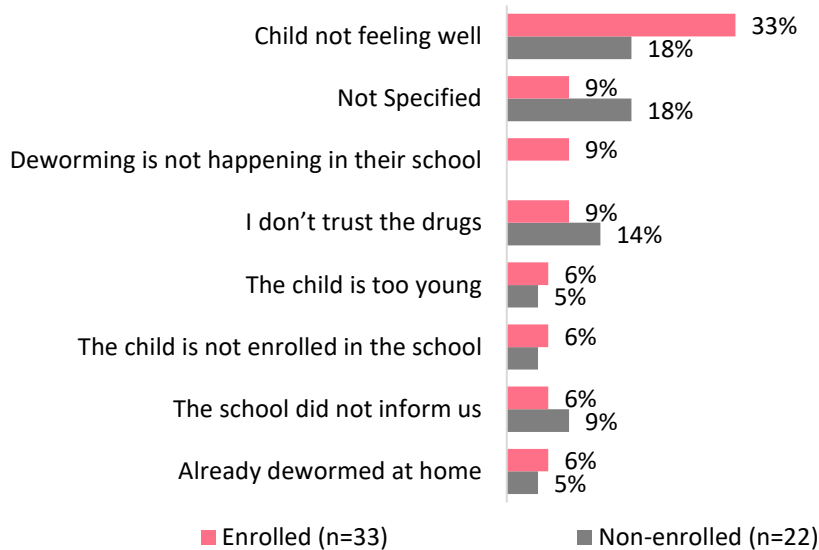
Figure 9: Medium of sensitization as cited by both sets of parents



4.3.4 Parents' reasons for not sending children for deworming

Only fifty-six percent of parents (56%) interviewed by monitors indicated that they would send at least one of their children for deworming, with this proportion at only 65% for the parents of the enrolled children and 38% for the non-enrolled children. Majority of the parents (33% for enrolled and 18% for the unenrolled) that indicated that they would not be sending any of their children for deworming indicated that the children were unwell (**Figure 10**).

Figure 10: Reasons cited by parents for not sending children for deworming (n=55)



4.3 Deworming Day assessment

A sample of 60 schools were randomly-selected for monitoring on Deworming Day. The purpose of these visits was to assess if deworming was being conducted at the schools, and if so, to assess the knowledge and capacity of teachers to administer tablets and observe if the proper procedures were being followed. Of the 60 randomly-selected schools, monitors visits revealed that seven did not exist at the given location, and 18 were not conducting deworming. This meant that of the original random selection of 60 schools, monitors managed to visit only 53 schools, conducting full observational monitoring at only 35 schools. In order to conduct full observational monitoring at the targeted number (60) of schools, the monitors replaced 25 schools with alternate schools nearby. Of these 25 replacement schools, 11 were not conducting deworming, so full observational monitoring was only possible at 14 schools. In total, monitors managed to visit a total of 78 schools; at all 78 schools, monitors managed to observe whether deworming was/was not being conducted, but full observational monitoring was possible only at 49 schools.. During the training sessions, monitors noted that only 24% of trainers informed teachers as regards the possibility of being visited by monitors; a rather low proportion given the possible bearing this step has towards ensuring that monitors gain a smooth entry into the schools.

Further findings also indicated that while non-enrolled were not targeted in this wave of implementation, 59% of schools had made plans to deworm any non-enrolled children present on Deworming Day, with non-enrolled children noted in 29% of schools monitored.

4.3.1 Knowledge of deworming information

Ninety-five percent (92%) of head teachers interviewed on Deworming Day indicated that either they (63%) or another teacher (29%) had attended a training session in preparation for Deworming Day within 15 days of the MDA. A follow-up interview with the teachers also revealed that 96% of them had either attended the training or been sensitized within the school on how to administer deworming drugs.

Ninety-three percent (94%) of head teachers interviewed knew the correct age group for STH treatment to be between 5-15 years as was the proportion of teachers (100%) knowledgeable on the same. Knowledge of the correct drug for treatment being mebendazole was low and similar (73%) among teachers and head teachers, while knowledge of the correct drug dosage was lower among teachers (84%) compared to head teachers (94%). The 27% gap in knowledge of the correct drug for teachers should be flagged, given they are primarily concerned with the administration of the drugs. Encouraging teachers in attendance of the trainings to share all aspects as regards the administration of drugs.

4.3.2 Adherence to MDA procedures

To provide quality assurance of the MDA administration, monitors observed whether deworming teams adhered to key drug administration steps. Results show high levels of compliance with the recommended practices as passed on during the trainings (**Table 3**). About half of the teachers set up a central deworming stations (51%) or dewormed children within the classrooms (45%). In terms of manning the deworming stations, schools adopted various approaches, with a few selected teachers rounding the entire school (43%), a single teacher conducting the activity in 28% of the schools, one or more teacher manning a centralized area (22%). Deworming during assembly (2%) and sending medicines to the homes (2%) made up the other proportions.

All the teachers knew the correct mebendazole dosage (100%), while 9 in 10 teachers (90%)s used the correct forms to record treatments. The small proportion of schools that had a designated teacher to

treat non-enrolled children probably owes from the fact that non-enrolled as well as out of school children were not targeted in this wave of implementation. In spite of this, it is positive to note that non-enrolled children were treated in all (29%) of schools where they were noted.

Trainers in subsequent trainings should emphasize the importance of prior of transferring names from the class register to Form 1A, as non-compliance was noted in 39% of schools.

Table 3: MDA procedures observed by monitors during drug administration (n=49)

MDA practice	Percent
The child was given one mebendazole tablet	100%
The teacher used Forms 1A and 1B to record treatments	90%
The teacher marked Form 1A and Form 1B as treatment was being administered	84%
Spoilt drugs (those that fell on the floor, were spat out as well as had water spills) were thrown away (n =10)	80%
The teacher had transferred names from the class register to Form 1A	61%
There was a designated teacher to treat the non-enrolled children	29%

4.3.3 Management of side effects

Monitors conducted interviews with medical officers and/or Union Council Medical Officers (UCMO) to determine if they encountered any calls for assistance as regards helping teachers with management of severe adverse effects.

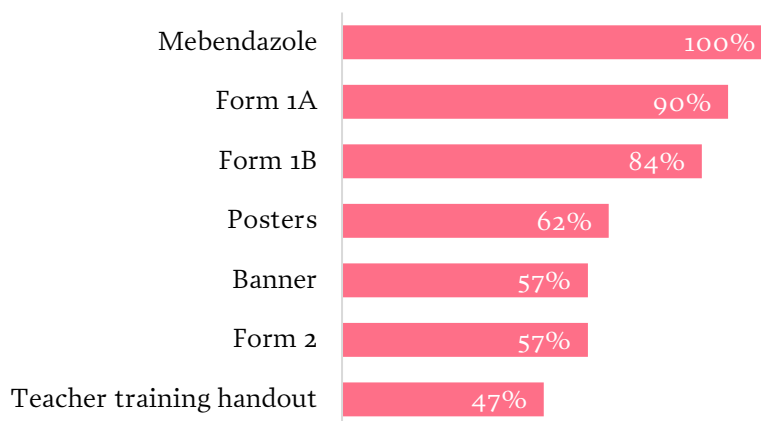
Of the 15 randomly selected medical officers, only one reported observing an incidence of severe adverse effect. For the child in question, a number of symptoms that were observed included fainting, dizziness, high blood pressure and continuous vomiting. The gravity of this incident further underlines the already highlighted need for trainers to comprehensively cover all side effects during trainings, as well as share contacts of the medical officers able to professionally aid in the event of any observed occurrence, given that only 65% of trainers adhered to this. However, all cases were duly resolved by the officers.

4.3.4 Material and Drug sufficiency

The availability of key materials for deworming is one of the backbones for a successful MDA. Availability of drugs and the primary monitoring forms (Form 1A and 1B) was generally high (**Figure 11**).

On the other hand, posters and banners, in spite distribution in all trainings were not displayed in 4 (8%) of schools monitored on Deworming Day. The same findings apply to the teacher training handout, which was distributed in all trainings monitored, but available in only 47% of schools. On the premise of this, the importance of availing materials on Deworming Day needs to be emphasized in trainings as it has a bearing on the quality of Deworming Day.

Figure 11: Materials available for MDA as reported by head teachers (n=49)



From interviewing head teachers at the schools prior to the drug administration process, 100% of school had drugs available (confirmed by direct observation by the monitors); follow-up interviews with the head teachers after the process of drug administration at the schools revealed that the vast majority of schools (98%) has sufficient drugs to deworm all children present. Neither the school that did not have any drugs nor the one indicating a deficiency indicated that there was a plan to address the shortages noted..

4.3.5 Water, Sanitation and Hygiene

During school visits, monitors also took note of school structures, and the presence of latrines and handwashing facilities within the schools. In terms of school structures, the majority of schools had their roofs made of concrete (96%), which was also the main material used on the school building walls (98%).

Most of school floors were made of concrete (94%) while 6% of floors had tiles based on observations made by monitors. Only one school lacked a hand washing facility. All (100%) schools also had latrines. Most schools on average had 4 latrines for boys and 4 for girls. Among these, the pit latrine with slab was most common (86%), distantly followed by that without a slab (15%).

5.0 Conclusion

What worked well

1. The overall execution of the trainings was commendable. The fact that the majority of participants were on time (86%), key materials were available in majority (at least 86%) of the trainings underlines the commitment of the different stakeholders towards achieving a successful MDA.
2. A large proportion of teachers (at least 80%) during post-training interviews were knowledgeable as regards key messages related to topics on health education, target population, and community sensitization which points to the efficacy of the methods used by trainers.
3. Adherence to key MDA procedures was noticeably high (at least 80%), with the correct dosage provided to all children, correct form used for treatment in 90% of schools - all pointing to a successful Deworming Day.
4. The single incidence of a SAE noted during window of MDA monitoring was well managed, a positive which needs to be carried to subsequent rounds of deworming.

What needs to improve

1. On the basis of attendance records, only 60% of expected teachers, representative of 46% of schools, attended the training sessions. Given the importance of the trainings, the resources that go into the planning as well as execution of this, efforts in the next round should be channeled towards addressing this gap.

2. Thirty seven percent (37%) of schools did not conduct deworming activities. Given the resources that go into planning for the Deworming Day, the program should consider addressing any underlying factors, starting with the low school representation at trainings.
3. There was a breakdown of the supply of some key materials to schools on Deworming Day. While all materials, aside from reporting forms (distributed in 82%) were distributed in all trainings, banners and posters, as well as the teacher training handout were not available in 43% and 53% of schools respectively. The importance of having materials by the bearers needs to be emphasized at every subsequent training.
4. The topics on roles and responsibilities, and side effects indicate a need for a balanced approach in covering all messages. Under teacher roles, trainers were generally more biased towards discussing roles on drug administration, than the equally important community sensitization. Equally noteworthy was the fact that 86% of head teachers did not know who to give monitoring forms post-deworming.
5. Sensitization efforts reached only 73% of parents, with only half of the parents (56%) indicating that they would be sending their children for deworming. While the program leveraged the modes preferred by parents for receiving deworming information that is children and teachers, emphasis should be laid towards encouraging them emphasize key messages on the target population and the purpose of the MDA that performed poorly.