



Process Monitoring and Coverage Validation of
Schools and *Anganwadi*-based
National Deworming Day
in Telangana

REPORT
August 2016

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EXECUTIVE SUMMARY

India, with an estimated 223 million¹ children living with soil-transmitted helminths (STH) (almost one quarter of global burden), launched National Deworming Day (NDD) in February 2015 to deworm all children between 1-19 years. The program is aimed at the supervised administration of albendazole tablets to all preschool and school-age, in *anganwadis* and schools, including unregistered (1-5 years) and out-of-school (6-19 years) children.

Telangana observed the second round of NDD in eight² out of ten districts on August 10, 2016 followed by Mop-Up Day on August 17, 2016. Evidence Action's Deworm the World Initiative, as the technical assistance partner, engaged an independent research agency to conduct process monitoring on NDD and Mop-Up Day to assess the preparedness of *anganwadis* and schools to implement the NDD program and to perform a coverage validation to evaluate the accuracy of the reporting data and coverage estimates following the NDD round.

Findings from the process monitoring highlighted that 90% of schools and 99% of the *anganwadis* observed deworming, with approximately 93% of schools and *anganwadis* having received sufficient tablets and 64% of schools and 75% of *anganwadis* having received program posters/banners. However, integrated distribution of NDD kits³ and training participation was found to be low to moderate. Coverage validation data revealed that 52% of schools and 53% of *anganwadis* followed correct protocols for recording the number of children dewormed. A substantial proportion of *anganwadi* workers did not have a list of unregistered (63%) and out-of-school children (75%). Despite substantial compliance to recording protocols, findings exhibited an inflation of 50% (verification factor of 0.66) for enrolled school-age children and 28% inflation (verification factor of 0.78) for preschool-age children dewormed at *anganwadis*. Nevertheless, interviews indicated that 97% of all enrolled children received a deworming tablet.

The monitoring of NDD highlights opportunities to strengthen and improve the quality and coverage of the program by ensuring the timely communication of training dates to schools and *anganwadis*. Other opportunities include updating the contact database of functionaries across stakeholder departments to facilitate timely information dissemination on the program, strengthening integrated distribution of the NDD kit with the timely procurement of drugs and IEC reporting materials, enhancing the engagement of ASHAs, and increasing the engagement of private schools.

¹ Soil transmitted helminths, Number of children (Pre-SAC and SAC) requiring Preventive Chemotherapy for Soil transmitted helminths, WHO (2014) http://apps.who.int/neglected_diseases/ntddata/sth/sth.html

² Nalgonda and Medak districts observed LF MDA, therefore NDD August round not observed in these two districts

³ Integrated distribution of NDD kits including deworming drugs, banner/poster and handout-reporting forms and provided to schools and AWC during the trainings at block or PHC level.

1. MONITORING AND EVALUATION

1.1 Monitoring Background

Understanding the program’s reach and quality is a key component for a successful NDD round. Evidence Action worked intensively with Telangana’s Departments of Health, Education, and Women & Child Development to assess the quality of program planning and implementation, identify gaps, and develop recommendations for improvements in future NDD rounds. Preparing systems to undertake deworming, adhering to the prescribed processes, and ensuring accurate coverage reporting are key components of the supervision process. Three processes of monitoring and evaluation are included in each NDD program round: (1) process monitoring, (2) coverage reporting, and (3) coverage validation.

1.2 Process Monitoring, Recording and Reporting Process, and Coverage Validation

Process monitoring assesses the preparedness of schools, *anganwadis*, and health systems to implement NDD and the extent to which they have followed recommended processes to ensure a high quality program. Evidence Action assessed program preparedness during the pre-NDD phase and selected independent monitors who observed the processes on NDD and Mop-Up Day. Evidence Action conducted process monitoring in two ways: a) telephone monitoring and b) physical verification by visiting schools/*anganwadis* and training venues.

Recording and reporting process is an important means to assess the estimated number of program beneficiaries. With close support from Evidence Action’s team, the Department of Health collected and compiled the coverage report for NDD within the reporting timelines. The functionary trainings included sessions on reporting protocols, cascades, and timelines (refer to **Figure: A** below), and were shared with districts through state directives. For recording deworming at schools and *anganwadis*, a single tick mark (✓) was required to be marked next to a child’s name in the attendance register if they were dewormed on NDD, and a double-tick mark (✓✓) if the child was dewormed on Mop-Up Day. Headmasters and *anganwadi* workers compiled the number of dewormed children from attendance registers, filled out the summary reporting format, and submitted it to the next level.

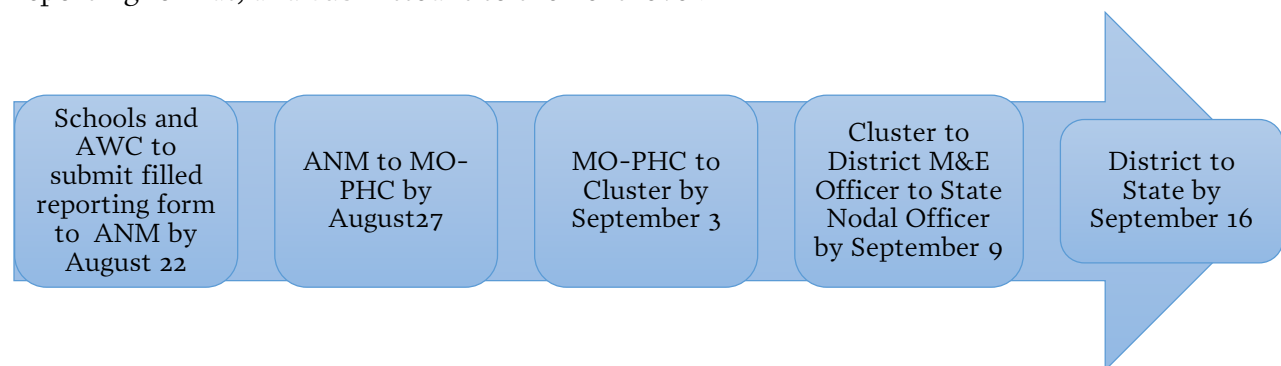


Figure A: Reporting Cascade and Timelines

Coverage validation is an ex-post check of the accuracy of the reporting data and coverage estimates. Coverage validation data was gathered through interviews with headmasters/*anganwadi* workers and three students (in three different randomly selected classes) in each school, and by checking all registers and reporting forms. These activities provided a framework to validate coverage reported by schools and *anganwadis* and to calculate the level of inaccuracy in reported data by comparing the recounted numbers.

1.3 Sampling and Sample Size

Independent monitoring was conducted in seven⁴ of eight implementing districts. Evidence Action hired Karvy Insights Limited, an experienced independent research agency that provided 100 monitors. A two-stage probability sampling procedure was adopted to select schools and *anganwadis* for independent monitoring (**Table A**). Four hundred and nine schools and 205 *anganwadis* were covered during process monitoring on NDD and Mop-Up Day, and 498 schools and 500 *anganwadis* were covered during coverage validation.

Table A: Target and coverage of schools and *anganwadis* during independent monitoring

Indicators	Process Monitoring		Coverage Validation	
	Target	Achieved	Target	Achieved
Total number of districts	7	7	7	7
Total number of cluster/ <i>mandals</i>	79	79	79	79
Total number of schools	400	409	500	498
Total no. of children interviewed in schools	NA	NA	1500	1359
Total number of <i>anganwadis</i>	200	205	500	500

1.4 Independent Monitoring Formats

To ensure comprehensive coverage and triangulation of data, three formats were administered—one combined tool for process monitoring at schools and *anganwadis* on NDD and Mop-Up Day; and one for each school and *anganwadi* for coverage validation. Evidence Action designed and finalized formats with approvals from Telangana’s Department of Health. The formats were then translated into the regional language, checked to ensure that the language was concise and easy to understand, and loaded onto tablet PCs.

1.5 Authorization from Government

Evidence Action conducted independent monitoring with approval from the state government. The monitors carried a copy of the state’s approval letter to the schools and *anganwadis*, explained the process of monitoring and coverage validation, and requested participation from the school and *anganwadi* staff.

1.6 Training of Trainers and Independent Monitors

A two-phase training program was organized with Evidence Action, providing a one-day comprehensive training to 15 master trainers of Karvy Insights in Hyderabad on August 6, 2016, followed by the master trainers conducting a two-day training of 120 monitors (including buffer monitors) during August 7-8, 2016. The training included a brief orientation on NDD, the importance of independent monitoring, and details regarding monitoring formats. At the end of the training, all participants were tested on comprehension and their ability to work in the field.

1.7 Field Implementation

Each monitor was allotted two schools and one *anganwadi* for process monitoring on each day. Subsequently, they were allotted five schools and five *anganwadis* for coverage validation.

⁴ Since Mahabubnagar conducted NDD on August 25, 2016 followed by mop-up day on, it was not included in the process monitoring and coverage validation

Monitors were provided a tablet PC, charger, printed copy of monitoring formats, and albendazole tablets for demonstration. The details of sample schools were shared with them one day before fieldwork commenced to ensure compliance. During coverage validation, if a school was closed or not traceable, monitors were asked to cover the next school on their list and return to the first school at another time on a subsequent day. If the school was non-traceable or closed consistently after attempting three visits, a new school was substituted for the old one. In the absence of reporting forms, the calculation of the verification factor is restricted to the sample where the copy was found for verification.

1.8 Data Processing and Analysis

The survey agency provided data to Evidence Action in the agreed upon format. Evidence Action reviewed all the data sets and shared feedback to the agency for any inconsistencies observed. All the analysis was performed using Stata version 13/14 and Excel 2013.

1.9 Quality Control

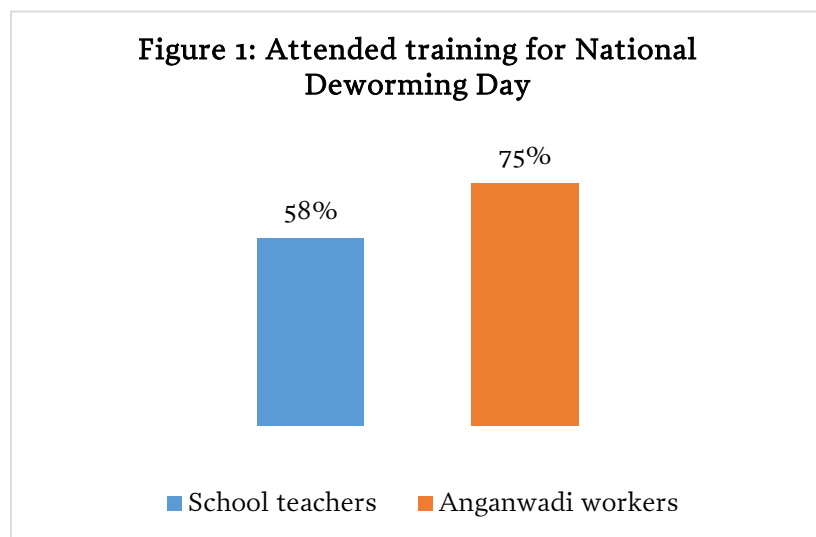
Appropriate quality control measures were taken to ensure data collected was accurate and comprehensive. Selected schools and *anganwadis* were contacted over the phone to verify monitoring visits. In all cases, school and *anganwadi* staff were asked to sign a participation form with an official stamp, verifying that the school or *anganwadi* was actually visited. Further, monitors also clicked the photographs of schools and *anganwadis* visited during process monitoring and coverage validation.

2. KEY FINDINGS

Key results from independent monitoring are provided below in sub headings, with further details shared in annexures.

2.1 Training

For effective implementation of the program, teachers and *anganwadi* workers are trained prior to NDD. Independent monitoring data shows that 58% of schools and 75% of *anganwadi* workers had received training for the current NDD round (**Figure 1**). Amongst those who did not attend training, thirteen percent of teachers/headmasters and 28% of *anganwadi* workers did not do so because they had attended training during the past NDD round.



All school teachers and *anganwadi* workers are expected to attend the training regardless of training in previous rounds. Only 54% of trained teachers provided training to other teachers in their schools. Approximately 35% of schools and 28% of *anganwadis* reported that they did not receive an SMS about deworming (**Table: PM 1**). Only 37% of private schools reported receiving NDD training. Lack of information about the training date and time was the main reason for the majority of private schools (80%) not attending the training (**Table: PM6**).

2.2 Integrated Distribution of NDD Materials Including Drugs

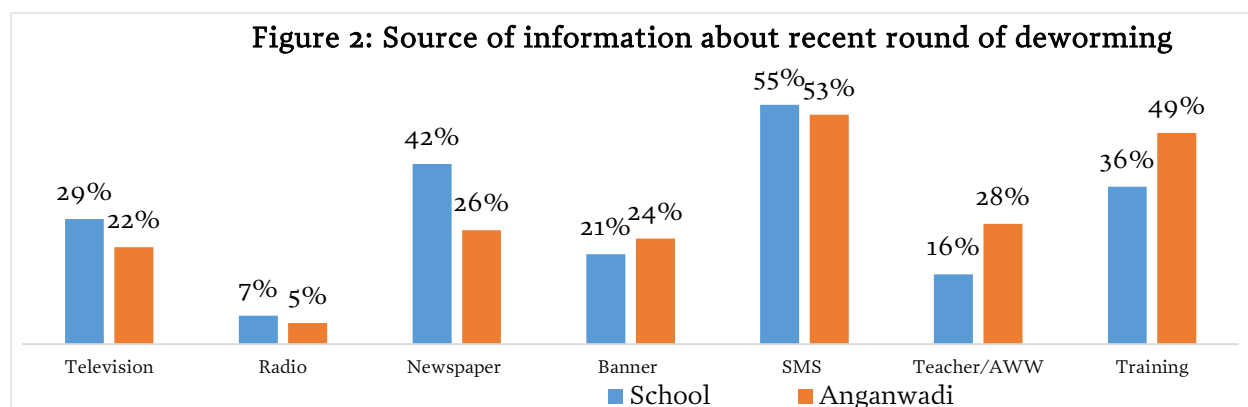
The NDD guidelines mandate integrated distribution of a NDD kit, IEC materials, training materials, and deworming tablets to schools and *anganwadi* centers at block/cluster level training.⁵ It is important to integrate distribution of all NDD materials to ensure timely and cost effective delivery of materials as separate integration would increase time and cost. Despite the well-defined distribution cascade plan for integrating NDD kits, findings showed that only 29% of schools and 33% of *anganwadis* in the state had an integrated distribution of materials. This indicates that in a large number of schools and *anganwadis*, drugs and IEC materials were distributed separately. As a result, significant distribution of materials happened individually in trainings (**Table:PM3**).

Around 84% of schools and 92% of *anganwadis* received tablets for deworming, while 64% of schools and 75% of *anganwadis* received posters/banners (**Table: PM3**). Moreover, 93% of schools and *anganwadis* reported having received sufficient drugs for deworming (**Table: PM2**). About 66% of schools and 73% of *anganwadis* received handouts/reporting forms. Around 51% of schools and 56% of *anganwadis* received adverse events management protocol training (**Table: PM 3**).

Among private schools, around 70% received tablets for deworming; eighty-five percent of which received tablets during training. Amongst those who received tablets, 90% reported to have received a sufficient quantity. Fifty-two percent of private schools covered during process monitoring received banners/posters for deworming, 90% of which reported receiving them in training. Moreover, 57% of private schools reported receiving handouts/reporting forms, 85% of which received them during training (**Table: PM6**).

2.3 Source of Information about Recent Round of NDD

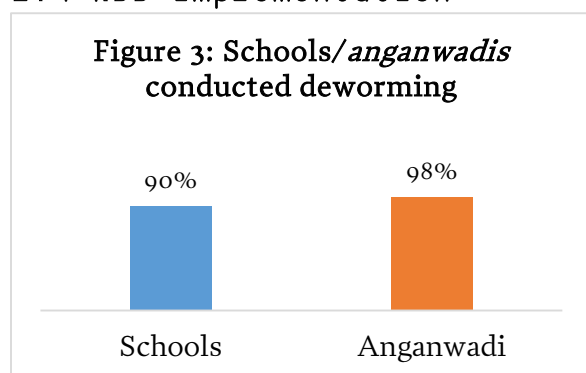
As depicted below, SMS was the major source⁶ of information; fifty-five percent of schools and 53% of *anganwadis* reported receiving information on NDD via SMS (**Figure 2**). Approximately 42% of schools and 26% of *anganwadis* also reported receiving information about NDD through newspapers. The radio was the least effective source of information about NDD for this round, as only 7% of schools and 5% of *anganwadis* reported hearing about NDD through the radio. Newspaper (41%) was the primary source of information for private schools, followed by SMS (39%).



⁵National Deworming Day, operational Guidelines 2016, Ministry of Health and Family Welfare, Government of India http://nrhm.gov.in/images/pdf/NDD-2016/Guidelines/Draft_NDD_2016_Operational_Guidelines.pdf

⁶ Major source of information is the medium most reported by school teachers/headmaster and *anganwadi* workers

2.4 NDD Implementation



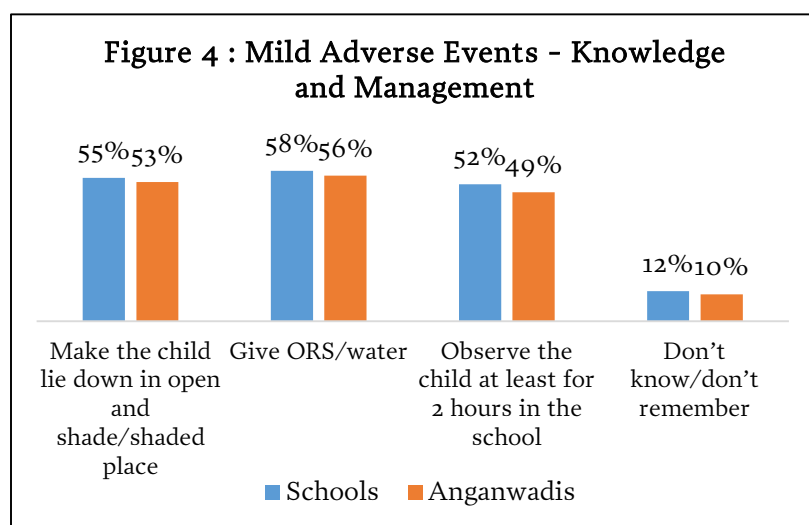
Process monitoring data shows that around 85% of schools and 94% of *anganwadis* reported conducting deworming on the day of the monitoring visit. Monitors were able to observe ongoing deworming activity in 56% of schools and 69% of *anganwadis* respectively (**Table: PM4**). Further, coverage validation demonstrated that 90% of schools and 98% of *anganwadis* had dewormed children during NDD or Mop-Up Day (**Figure 3**).

2.5 Adverse Events - Knowledge and Management

Interviews with headmasters and teachers revealed a high degree of awareness regarding potential adverse events due to deworming and a high level of understanding regarding the appropriate protocols to follow in the case of such events. Vomiting was listed as a symptom by 79% of principals and 82% of *anganwadi* workers, followed by abdominal pain which was listed by 60% of principals and *anganwadi* workers. Around 36% of school staff and 28% of *anganwadi* workers recognized fatigue as a symptom (**Table: PM5**). Further, 55% of teachers and 53% of *anganwadi* workers knew to have a child lie down in an open, shaded place in case of any symptoms. Further, the majority of schools (58%) and *anganwadis* (56%) knew to give children displaying symptoms ORS/water and to observe for two hours (Figure 4). Further, 71% of schools and 75% of *anganwadis* reported the need to call a PHC doctor if symptoms persisted (**Table: PM5**). Around three percent of schools and less than a percent of *anganwadis* reported any cases of adverse events (**Table: CV1**).

2.6 Recording Protocol

Coverage validation data demonstrated that 52% of schools and 53% of *anganwadis* followed appropriate recording protocols. For the analysis, information on the recording protocol was



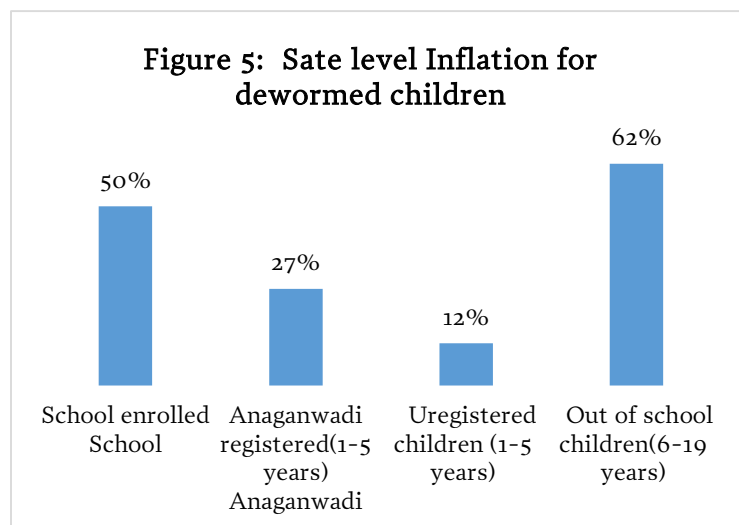
gathered from each school and *anganwadi* regardless of the availability of reporting forms at the site. Around ten percent of schools and 24% *anganwadis* followed partial protocols (marking down different symbols or making a list of dewormed children), however, thirty-eight percent of schools and 23% of *anganwadis* did not follow any protocol to keep records of dewormed children (**Table: Cv2**). As recommended in the NDD guidelines, teachers and *anganwadi* workers were

supposed to retain a copy of reporting forms; however, twenty-five percent of headmasters and 21% of *anganwadi* workers were not aware of this requirement. Further, it was observed during coverage validation that reporting forms were available in only 36% of schools/*anganwadis*.

ASHA workers (ASHAs) have a critical role to play in the success of the NDD program. As part of the community mobilization and awareness campaign, ASHAs conduct village meetings with parents, work to mobilize out-of-school children, and disseminate information through local platforms such as *gram panchayats* and VHSNC meetings to ensure greater coverage. After NDD, AWWs prepare a list of children who have missed the dose due to absence or sickness and share the list with ASHAs. ASHAs then work to inform parents to have their children be present to take the missed albendazole dose on Mop-Up Day. Further, as per NDD guidelines, ASHAs are required to prepare a list of the children not attending schools and *anganwadis* and submit it to *anganwadi* workers. However, findings suggest that lists of out-of-school (6-19 years) and unregistered (1-5 years) children were available only in 36% of ASHAs and 24% of *anganwadis* respectively (Table: Cv 1).

2.7 Coverage Validation

Verification factors⁷ are common indicators for Neglected Tropical Disease control programs around the world. It compares the aggregated number of ticks in school/*anganwadi* registers (indicating that children were dewormed) to the coverage reports submitted by schools/*anganwadis* to the state. Thus, the verification factor was estimated on the basis of the availability of a copy of reporting forms at schools and *anganwadis*. The state level verification factor for enrolled school-age children was 0.66, indicating that on average, for every 100 dewormed children



reported by the school; sixty-six were verified through available documents. This corresponds to an overall 50% inflation of reporting in schools, meaning that reported numbers appear to be approximately 50% higher than the numbers recorded in school attendance registers. Similarly, overall state level verification factors for children dewormed at *anganwadis* was 0.78 with an inflation of 28%. However, category wise verification factors for registered (1-5 years), unregistered (1-5 years), and out-of-school (6-19

years) children were 0.78, 0.89, and 0.61 with corresponding inflations of 27%, 27%, and 12% respectively (Figure 5).

Further, attempts were also made to understand NDD coverage in schools and *anganwadis*. As per the state government coverage report, 96% of enrolled school-age children and preschool-age children in *anganwadis* were dewormed in the current round of NDD. Findings from school coverage validation data suggests that on average, we could verify 66% of the total dewormed numbers reported by schools. Applying this verification factor on government reported school

⁷A verification factor of 1 means the schools reported the exact same figures that they recorded on deworming day. A verification factor less than 1 indicates over-reporting, while a verification factor greater than 1 indicates under-reporting.

coverage, we found that 59% of children could have been dewormed in schools. The verification factors are based on only those schools and *anganwadis* where a copy of reporting forms was available for verification. Therefore, adjusted coverage in schools and *anganwadis* based on verification factors needs to be interpreted with caution.

Since school coverage validation covers information on attendance on NDD and Mop-Up Day, and common attendance on both these days along with interviews of children, an alternate method was also used to estimate the coverage in the school. We estimated NDD treatment coverage in schools considering maximum attendance of children on NDD dates. The coverage estimate based on attendance data provides a more robust estimate compared to adjusted coverage based on verification factors, as maximum attendance is calculated from all the schools covered during coverage validation. Coverage validation data showed that 90% of schools conducted deworming on NDD and Mop-Up Day and a maximum of 90% of the total enrolled school children were in attendance. Moreover, 99% of children interviewed reported having received the albendazole and 87% of them reported having consumed it under supervision. Based on these factors, a total of 70% of children could have been dewormed in the schools. This indicates that NDD coverage lies somewhere between 64-70 percent in schools in Telangana, below the WHO threshold of 75% coverage.

In the case of *anganwadis*, data suggests that on average, we could verify 78% of total dewormed numbers reported by *anganwadi* workers. Applying this verification factor on government reported coverage (96%) in *anganwadis*, it is estimated that approximately 75% of children could have been dewormed in the *anganwadis*. Further, unlike schools, as child interviews were not conducted during coverage validation in *anganwadis*, we could not imply the alternate method of estimating the coverage at *anganwadis* (**Table: CV2**).

3. RECOMMENDATIONS

The monitoring exercise conducted during Telangana's NDD round in August 2016 identifies gaps and opportunities to improve and strengthen future rounds. As a fixed-day approach, NDD requires intensive coordinated efforts between all stakeholders to align all program components for successful program implementation and to prevent gaps and delays. The following are the key recommendations for program improvements that emerged out of the monitoring and evaluation.

1. Training is critical for the successful implementation of a high coverage, high quality program. Focused efforts are required to improve training attendance by advanced planning of sessions and timely communication of training dates and venues to schools and *anganwadis*. The education department may send directives to districts to ensure increased participation of teachers in training in the upcoming rounds. Emphasis should be placed on improving training quality by administering quality assurance tools such as training monitoring and sending training reinforcement messages (SMSs), particularly on awareness about worm infections, its prevention, dose administration, and adverse event managements. School teachers who attend training must be mandated to impart adequate training to other teachers in the school.
2. As a significant number of school headmasters and *anganwadi* workers did not receive deworming related SMSs, and as schools and *anganwadis* reported this as an effective mode of receiving information, efforts are required to regularly update the contact database of functionaries across all stakeholder departments. This will facilitate

comprehensive, effective, and timely dissemination of information to functionaries. For future rounds, all stakeholder departments should follow systematic mechanisms to restructure the database as per the new administrative allotment of 31 districts.

3. There is a need for improvement of integrated distribution as evident from monitoring data. Efforts can be taken to integrate the handover of the distribution cascade (NDD kits) to the teachers/ headmasters and *anganwadi* workers with training efforts. Distribution could be further strengthened through efficient planning for timely drug procurement, advance printing of NDD materials, and timely sharing of training schedules at the block level. Reinforcing integrated distribution during video conferences and SMS alerts will also be helpful in facilitating integrated distribution.
4. Greater emphasis should be placed on generating community awareness and mobilizing children to achieve even higher coverage. As a substantial proportion of *anganwadi* centers did not have a list of unregistered and out-of-school children, greater involvement of ASHAs in mobilizing out-of-school children and spreading awareness on deworming benefits is required. This could be further strengthened by highlighting the role of ASHAs in the joint directive; encouraging their participation in training, issuing reminders via SMS, and directly sharing information on the incentives of deworming.
5. As findings demonstrate low performance of private schools on monitoring indicators, more attention should be given to encourage the participation of private schools in training, drug logistics facilitation, IEC distribution, and adverse events management learnings. The engagement of district collectors will be key to private school performance and directives from the senior bureaucratic leadership will play a role in facilitating these efforts.
6. Coverage validation data suggests that a greater emphasis on recording protocols during the training is likely to improve the quality of coverage data in the next round. Training and reinforcement messages shared through SMS need to increase focus on the importance of correct reporting protocols and maintaining accurate and comprehensive documentation. Practical sessions on recording protocol for teachers and *anganwadi* workers should be scheduled during trainings.
7. Most of the *anganwadi* centers did not possess lists of out-of-school and unregistered children. Efforts are required to engage ASHAs to proactively prepare these lists in their communities and to then share them with *anganwadis*. More engagement of ASHAs and AWWs should be encouraged, as they are responsible for conducting community meetings, mobilizing children, and conducting health education activities.
8. Despite the directives, copies of the reporting form were not available in a large proportion of schools and *anganwadis*, which affects the evaluation of reported coverage data. Along with providing two copies of reporting forms during training, trainers should ensure that teachers/headmasters and *anganwadi* workers understand the directive to maintain a copy of reporting forms.

4. WAY FORWARD

Program monitoring of the second round of NDD in Telangana has given useful insights for opportunities to increase coverage in future rounds, while identifying gaps in current program planning and implementation. As mandated in the NDD operational guidelines, efforts will be coordinated to support all the stakeholders in the program planning phase. Efficient planning, strategies for integrated distribution, and supervision and emphasis on recording and reporting protocol are instrumental in further escalating program coverage. Further attention needs to be directed on scaling NDD in private schools. Emphasis should be placed on improving training quality by organizing practical sessions on recording protocol for schools and *anganwadis* to facilitate correct data documentation and management and to improve the accuracy of coverage data. ASHAs and *anganwadi* workers must be further engaged and encouraged to conduct community meetings, mobilize children, and conduct health education activities.

ANNEXURE

Table PM1: Training, awareness and source of information about National Deworming Day among respondents (teacher/headmaster/*anganwadi* worker), August 2016

Indicators	School			<i>Anganwadi</i>		
	D ⁸	N ⁹	%	D	N	%
Attended training for current round of NDD	409	236	57.7	205	154	75.1
Reasons for not attending official training						
Location was too far away	173	8	4.6	51	1	2.0
Did not know the date/timings/venue	173	124	71.7	51	31	60.8
Busy in other official/personal work	173	13	7.5	51	6	11.8
Attended deworming training in the past	173	23	13.3	51	14	27.5
Not necessary	173	7	4.1	51	5	9.8
No incentives/no financial support	173	18	10.4	51	2	3.9
Trained teacher provided training to						
All other teachers	236	128	54.2	NA	NA	NA
Few teachers	236	50	21.2	NA	NA	NA
No (himself/herself only teacher)	236	38	16.1	NA	NA	NA
No, did not train other teachers	236	20	8.5	NA	NA	NA
Awareness about the ways a child can get worm infection	409	332	81.2	205	174	84.9
Different ways a child can get worm infection						
Not using sanitary latrine	332	219	66.0	174	103	59.2
Having unclean surroundings	332	264	79.5	174	135	77.6
Consume vegetables and fruits without washing	332	223	67.2	174	103	59.2
Having uncovered food and drinking dirty water	332	224	67.5	174	107	61.5
Having long and dirty nails	332	226	68.1	174	116	66.7
Moving in bare feet	332	192	57.8	174	92	52.9
Having food without washing hands	332	235	70.8	174	118	67.8
Not washing hands after using toilets	332	196	59.0	174	94	54.0
Awareness about all the possible ways a child can get worm infection¹⁰	409	82	20.1	205	35	17.1
Perceive that health education should be provided to children	409	353	86.3	205	174	84.9
Knowledge about correct dose of albendazole tablet						
1-2 years of children	NA	NA	NA	205	194	94.6
6-19 years of children	409	401	98.0	205	200	97.6
Awareness about non-administration of albendazole tablet to sick child						
Will give albendazole tablet to the child	409	34	8.3	205	14	6.8
Will not give the albendazole tablet to the child	409	375	91.7	205	191	93.1

⁸ Denominator for the indicator

⁹ Numerator for the indicator

¹⁰ Includes those who were aware that a child can get worm infection if she/he does not use sanitary latrine, have unclean surroundings, consume vegetable and fruits without washing, have uncovered food and drinking dirty water, have long and dirty nails, moves in bare fee, have food without washing hands and not washing hands after using toilets.

Awareness about consuming albendazole tablet						
Chew before swallowing	409	374	91.4	205	195	95.1
Swallow it directly	409	35	8.6	205	10	4.9
Awareness about consuming albendazole in school/<i>anganwadi</i>						
Awareness about the last date for submitting the reporting form	409	113	27.6	205	53	25.9
Aware that completed reporting form should be submitted to ANM	409	316	77.3	205	150	73.2
Awareness to retain a copy of the reporting form post submission	409	311	76.0	205	161	78.5
Source of information about current NDD round						
Television	409	118	28.9	205	46	22.4
Radio	409	27	6.6	205	10	4.9
Newspaper	409	170	41.6	205	54	26.3
Banner	409	85	20.8	205	50	24.4
SMS	409	226	55.3	205	109	53.2
Other school/teacher/ <i>anganwadi</i> worker	409	65	16.1	205	55	27.8
Training	409	149	36.4	205	100	48.8
Receive SMS for current NDD round	409	267	65.3	205	148	72.2

Table PM2: Deworming activity, availability of albendazole tablet and list of unregistered out-of-school children, August 2016

Indicators	School			<i>Anganwadi</i>		
	D	N	%	D	N	%
Albendazole tablet administered on the day of visit						
Yes, ongoing	409	118	28.9	205	77	37.6
Yes, already done	409	116	28.4	205	71	34.6
Yes, after sometime	409	89	21.8	205	34	16.6
No, will not administer today	409	86	21.0	205	23	11.2
Schools/ <i>anganwadis</i> conducted deworming on either of the day	409	349	85.3	205	193	94.2
Schools/ <i>anganwadis</i> conducted deworming on NDD ¹¹	187	149	79.7	94	88	93.6
Schools/ <i>anganwadis</i> conducted deworming on mop-up day ¹²	222	174	78.4	111	93	84.7
Reasons for not conducting deworming						
No information	86	35	40.7	23	3	13.0
Albendazole tablet not received	86	22	25.6	23	8	34.8
Apprehension of adverse events	86	0	0.0	23	1	4.4
Already dewormed all children on deworming day ¹³	86	26	30.2	23	12	47.8
Others ¹⁴	86	3	3.5	23	0	0.0

¹¹ Based on the samples visited on National Deworming Day.

¹² Based on the samples visited on Mop-Up Day.

¹³ Based on the samples that did not conduct deworming on Mop-Up Day.

¹⁴ School administer the albendazole tablet to children a day before holiday, children/student absent, postponed due to festival.

<i>Anganwadis</i> having list of unregistered/out-of-school children	NA	NA	NA	205	103	50.2
Out-of-school children given albendazole tablet	NA	NA	NA	182	137	75.3
Unregistered children given albendazole tablet	NA	NA	NA	182	159	87.4
Sufficient quantity of albendazole tablet ¹⁵	345	319	92.5	188	175	93.1

Table PM3: Integrated distribution of albendazole tablets and IEC materials, August 2016

Items	Schools				Received (N=205)	<i>Anganwadi</i>		
	Received (N=409)	D*	Received in training	Verified		D*	Received in training	Verified
Albendazole tablet	84.4 (345)	345	87.0 (300)	98.6 (340)	91.7 (188)	188	90.4 (170)	98.4 (185)
Poster/banner	63.6 (260)	260	85.8 (223)	96.5 (251)	74.6 (153)	153	90.2 (138)	98.0 (150)
Handouts/reporting form	65.8 (269)	269	83.6 (225)	93.7 (252)	72.7 (149)	149	89.3 (133)	94.6 (141)
Adverse event reporting form	50.6 (207)	207	68.6 (142)	83.6 (173)	55.6 (114)	114	75.4 (86)	79.0(90)
Received all material	41.6 (170)	170	70.6 (120)	84.7 (144)	46.8 (96)	96	70.8 (68)	77.1 (74)
Integrated distribution¹⁶	29.3 (120)				33.2 (68)			

Note: The denominator for item “Received” is 409 for schools and 205 for anganwadis.

Numerators for “Received in training” and “Verified” are given in parentheses.

*Indicates common denominator for “Received in training” and “Verified”

Table PM4: Implementation of deworming activity and observation of monitor's, August 2016

Indicators	Schools			<i>Anganwadi</i>		
	D	N	%	D	N	%
Deworming activity was taking place	409	228	55.8	205	142	69.3
Albendazole tablet were administered by						
Teacher/headmaster	118	83	70.3	77	14	18.2
<i>Anganwadi</i> worker	118	4	3.4	77	54	70.1
ASHA	118	13	11.0	77	8	10.4
ANM	118	18	15.3	77	1	1.3
Followed any recording protocol	234	190	81.2	148	130	87.8
Protocol followed						
Putting single/double tick	190	151	79.5	130	92	70.8
Put different symbols	190	18	9.5	130	21	16.2

¹⁵ This indicator is based on the sample that received albendazole tablet.

¹⁶ Integrated distribution of NDD kits includes albendazole tablet, banner/poster and handout-reporting forms and provided to schools and AWC during the trainings at block or PHC level

Prepare the separate list for dewormed	190	21	11.1	130	17	13.1
Visibility of poster/banner during NDD/MUD	260	214	82.3	153	132	86.3

Table PM5: Adverse event knowledge and management among respondents, August 2016

Indicators	Schools			<i>Anganwadi</i>		
	D	N	%	D	N	%
Opinion of occurrence of an adverse event after taking albendazole tablet	409	130	31.8	205	69	33.7
Opinion of occurrence of possible adverse events						
Mild abdominal pain	130	78	60.0	69	41	59.4
Nausea	130	56	43.1	69	29	42.0
Vomiting	130	103	79.2	69	57	82.6
Diarrhea	130	38	29.2	69	23	33.3
Fatigue	130	36	27.7	69	19	27.5
All possible adverse event ¹⁷	409	6	1.5	205	5	2.4
Awareness about mild adverse event management						
Make the child lie down in open and shade/shaded place	409	224	54.8	205	109	53.2
Give ORS/water	409	235	57.5	205	114	55.6
Observe the child at least for 2 hours in the school	409	214	52.3	205	101	49.3
Don't know/don't remember	409	47	11.5	205	21	10.2
Awareness about sever adverse event management						
Call PHC or emergency number	409	291	71.2	205	154	75.1
Take the child to the hospital /call doctor to school	409	258	63.1	205	126	61.5
Don't know/don't remember	409	25	6.1	205	10	4.9
Occurrence of cases of any adverse event	234	35	15.0	148	12	8.1
Available contact numbers of the nearest ANM or MO-PHC	409	334	81.7	205	198	96.6

Table PM6: Selected Indicators of Process Monitoring in Private Schools, August 2016

Indicators ¹⁸	D	N	%
Attended training for current round of NDD	97	36	37.1
Received albendazole tablet	97	68	70.1
Sufficient quantity of albendazole tablet	68	61	89.7
Received poster/banner	97	50	51.6
Received handouts/ reporting form	97	55	56.7

¹⁷ Includes those who have knowledge that a mild abdominal pain and nausea and vomiting and diarrhea and fatigue can be reported by a child after taking albendazole tablet.

¹⁸ These indicators are based on small samples, therefore, precautions should be taken while interpreting the results as these are not representative of all private schools in the state.

Received SMS for current NDD round	97	42	43.3
Albendazole administered to children	97	58	59.8
Reasons for not conducting deworming			
No information	39	22	56.4
Albendazole tablet not received	39	8	20.5
Already dewormed all children on deworming day ¹⁹	39	7	17.9
Others ²⁰	39	2	5.1
Albendazole tablet administered to children by teacher/headmaster²¹	13	6	46.2
Perceive that health education should be provided to children	97	72	74.2
Knowledge about correct dose of albendazole tablet	97	94	96.9
Awareness about non-administration of albendazole tablet to sick child	97	89	85.6
Opinion of occurrence of an adverse event after taking albendazole tablet	97	29	29.9
Opinion of occurrence of possible adverse events			
Mild abdominal pain	29	14	48.3
Nausea	29	9	31.0
Vomiting	29	24	82.8
Diarrhea	29	8	27.6
Fatigue	29	8	27.6
Occurrence of cases of any adverse event	41	31	75.6
Awareness about mild adverse event management			
Let the child rest in an open and shaded place	97	39	40.2
Provide clean water to drink/ORS	97	46	47.4
Contact the ANM/nearby PHC	97	44	45.4
Available contact numbers of the nearest ANM or MO-PHC	97	64	66.0
Followed correct reporting protocol	30	23	76.7

¹⁹ Based on the samples that did not conduct deworming on mop-up day.

²⁰ School administer the albendazole tablet to children a day before holiday, children/student absent, postponed due to festival

²¹ This indicator is based on samples where deworming was ongoing.

Table CV1: Findings from School and *Anganwadi* Coverage Validation Data

Indicators ²²	School			<i>Anganwadi</i>		
	D	N	%	D	N	%
Conducted deworming ²³	498	447	89.7	500	492	98.3
Day of albendazole administration²⁴						
National Deworming Day	453	426	94.1	492	469	95.4
Mop-up day	453	297	65.5	492	281	57.1
Between NDD and mop-up day	453	39	8.5	492	53	10.7
Reasons for not conducting deworming						
No information	45	29	64.2	8	6	76.0
Drugs not received	45	14	30.8	8	1	11.8
Apprehension of adverse events	45	2	4.9	8	1	12.3
Albendazole left after deworming	453	255	56.2	492	272	55.3
Number of albendazole left						
Less than 50	265	198	75.0	258	232	90.0
50-100	265	36	13.6	258	23	8.8
More than 100	265	30	10.1	258	3	1.2
Copy of reporting form was available for verification	453	164	36.1	492	175	35.5
Reasons for non-availability of copy of reporting form						
Did not received	272	48	17.8	333	39	11.7
Submitted to ANM	272	211	77.5	333	275	82.5
Unable to locate	272	13	4.7	333	19	5.8
<i>Anganwadis</i> having list of unregistered children	NA	NA	NA	492	179	36.4
<i>Anganwadis</i> having list of out-of-school children	NA	NA	NA	492	118	24.1
Reported cases of adverse event	453	12	2.7	492	5	

²² Weighted percentage and numbers are presented against each indicator in all the coverage validation tables. In some indicators denominators may vary because of this.

²³ Schools and anganwadis that conducted deworming on during NDD or Mop-Up Day

²⁴ Total percentage may add to more than 100 as multiple responses are allowed.

Table CV2: Recording protocol, verification, inflation and attendance in schools and *anganwadis*

Indicators	School			<i>Anganwadis</i>		
	D	N	%	D	N	%
Followed correct²⁵ recording protocol	453	234	51.6	492	263	53.4
Followed partial²⁶ recording protocol	453	46	10.1	492	118	24.0
Followed no²⁷ recording protocol	453	174	38.4	492	111	22.6
State level verification factor²⁸	41,841	27,897	0.66	25,069	19,720	0.78
<i>Anganwadi</i> registered children	NA	NA	NA	19,743	15,608	0.79
<i>Anganwadi</i> unregistered children	NA	NA	NA	2,919	2,625	0.89
Out-of-school children	NA	NA	NA	2,406	1,486	0.61
State level inflation rate²⁹	27,897	13,944	49.9	19,720	5,349	27.1
<i>Anganwadi</i> registered children	NA	NA	NA	15,608	4,134	26.5
<i>Anganwadi</i> unregistered children	NA	NA	NA	2,625	294	11.8
Out-of-school children	NA	NA	NA	1,486	920	61.9
Attendance on pre-NDD³⁰	1,12,181	93,791	83.6	NA	NA	NA
Attendance on NDD	1,12,181	93,112	83.0	NA	NA	NA
Attendance on mop-up day	1,12,181	88,733	79.1	NA	NA	NA
Children who attended on both NDD and mop-up day	1,12,181	79,920	71.2	NA	NA	NA
Maximum attendance of children on Deworming Day and mop-up Day	1,12,181	1,01,925	90.9	NA	NA	NA

²⁵ Correct recording protocol includes schools where all the classes put single tick(✓) on NDD and double tick (✓✓) on mop-up day to record the information of dewormed children.

²⁶ Partial recording protocol includes schools where all the classes did not follow correct protocol, put different symbols and prepared separate list to record the information of dewormed children.

²⁷ No protocol includes all those schools where none of the classes followed any protocol to record the information of dewormed children.

²⁸ Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=181) and *anganwadis* (n=159) where deworming was conducted and copy of reporting form was available for verification.

²⁹ Proportion of over reported dewormed children against total verified children in schools and *anganwadis*.

³⁰ This is attendance of previous day of NDD.

School level inflation rate for schools and <i>anganwadis</i> that followed the correct recording protocol	24,123	25,214	4.5	NA	NA	NA
Estimated NDD coverage ³¹	64-70			75		

Table CV3: Indicators based on interview of children during coverage validation

Indicators	D	N	%
Children received deworming tablets	1,359	1,342	98.8
Children consumed tablet	1,344	1,338	99.6
Children aware about the deworming tablets	1,344	1,262	93.9
Source of information about NDD round			
Teacher/school	1,273	1,255	98.6
Television	1,273	102	8
Radio	1,273	55	4.3
Newspaper	1,273	219	17.2
Poster/Banner	1,273	356	27.9
Parents/siblings	1,273	94	7.4
Friends/neighbors	1,273	73	5.8
Way children consumed the tablet			
-Chewed tablet before swallowing	1,339	1,203	89.8
-Swallowed tablet directly	1,339	136	10.2
Supervised administration of tablets	1,339	1,159	86.6

Note: Three children were interviewed from all those schools (453) who reported to observe deworming during NDD and mop-up day out of total 498 schools visited during coverage validation.

³¹ Coverage was estimated by implying state level verification factor on government reported coverage for schools and AWC. To provide additional insight, school coverage was also estimated on the basis of NDD implementation status, attendance and supervised administration in the school. We assume that same level of documentation and accuracy in coverage data reporting is prevalent in the schools and AWCs where copy of reporting form was not available for verification. Further, estimated coverage based on attendance data in schools include attendance on NDD and Mop-Up Day.