



Process Monitoring and Coverage Validation of
Schools and *Anganwadis* based National Deworming
Day in Tripura

REPORT
August 2016

Table of Contents

EXECUTIVE SUMMARY	3
1. MONITORING AND EVALUATION	4
1.1 Monitoring Background	4
1.2 Process Monitoring, Recording and Reporting Process, and Coverage Validation	4
1.3 Sampling and Sample Size	5
1.4 Independent Monitoring Formats	5
1.5 Authorization from Government	5
1.7 Field Implementation	5
1.8 Data Processing and Analysis	6
1.9 Quality Control	6
2. KEY FINDINGS	6
2.1 Training	6
2.2 Integrated Distribution of NDD Materials Including Drugs	6
2.3 Source of Information about Recent NDD Round	7
2.4 NDD Implementation	7
2.5 Adverse Events - Knowledge and Management	8
2.6 Recording Protocol	8
2.7 Coverage Validation	9
3. RECOMMENDATIONS	10
4. WAY FORWARD	11
Annexure	12

EXECUTIVE SUMMARY

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

Tripura observed the third round of NDD in all eight districts on **August 10, 2016** followed by Mop-Up Day on **August 18, 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, followed by coverage validation to evaluate the accuracy of the reporting data and coverage estimates post deworming.

Findings from process monitoring highlighted that 96% of schools and 98% of the *anganwadis* observed deworming, with approximately, 95% of schools and 92% of *anganwadis* receiving sufficient tablets for deworming, equally large numbers of schools and *anganwadis* received NDD posters/banners (94% of schools and 97% of *anganwadis*). An established best practice of the NDD is integrated distribution of program materials with drugs (NDD kits) at the implementer level of trainings. NDD kits² were reported to be shared in 58% of schools and 57% of *anganwadis* at trainings, which was reported to be attended by 94% of schools and 96% of *anganwadis*. Coverage validation data revealed that 69% of schools and 67% of *anganwadis* followed correct protocols for recording the number of children dewormed, while around 21% of schools and 13% of *anganwadis* did not adhere to any recording protocol. Despite substantial compliance with recording protocols, findings exhibited an inflation of 39% (verification factor of 0.71) for enrolled school-age children and 17% (verification factor of 0.85) for preschool-age children at *anganwadis*. Nevertheless, interviews indicated that 99% of all enrolled children received a deworming tablet.

The findings from NDD's independent monitoring highlights opportunities to strengthen future rounds and take learnings for other programs, as applicable. The program quality and coverage can be improved upon by emphasizing key messages at trainings; including awareness about worm infection, its prevention, drug dosage and administration, and adverse events management. The database of functionaries across all stakeholder departments needs to be regularly updated to ensure timely information dissemination. Other efforts need to focus on integration of NDD kits at trainings, inclusion of private schools at all levels of program planning and implementation, and adherence to the recording protocol, and proper data documentation and management.

¹Soil transmitted helminths, Number of children (Pre-SAC and SAC) requiring Preventive Chemotherapy for Soil transmitted helminths, WHO (2015) http://apps.who.int/neglected_diseases/ntddata/sth/sth.html

² 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 program reach and quality is a key component for a successful National Deworming Day (NDD) round. In order to fulfil this need, Evidence Action worked intensively with Tripura’s health, education, and women and child development departments 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 deworming processes, and ensuring accurate coverage reporting are key components of the supervision process. Three processes of monitoring and evaluation are included in each deworming 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-deworming 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, and a crucial component to measuring program achievement. With close support from Evidence Action, the Department of Health collected and compiled the coverage report for NDD within the reporting timelines. The reporting protocols, including the reporting cascade and timelines (refer to **Figure: A** below), were shared with all districts through the state’s directives. In order to improve the accuracy of coverage reporting, every participating school and *anganwadi* was instructed to follow a recording protocol for deworming. For recording deworming at schools and *anganwadis*, a single tick mark (✓) was required to be included next to a child’s name in the attendance register if they received albendazole on NDD, and a double-tick mark (✓✓) if they received deworming 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.

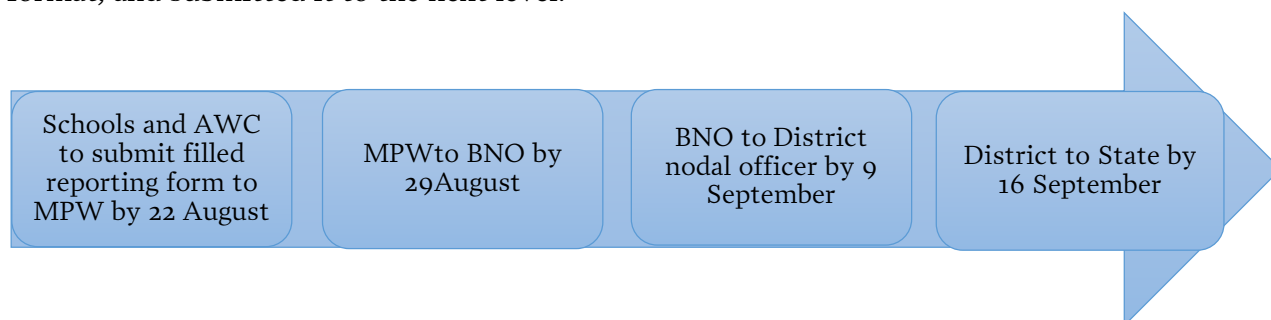


Figure A: Reporting cascade and timelines

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/AWWs 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 all eight districts of Tripura. To do this, Evidence Action hired “Sigma Research and Consulting Pvt. Ltd” an independent research agency that provided 80 monitors. A two-stage probability sampling procedure was adopted to select schools and *anganwadis* for independent monitoring (Table A). Selected monitors covered 320 schools and 160 *anganwadis* during process monitoring on NDD and Mop-Up Day, and 400 schools and 400 *anganwadis* for 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	8	8	8	8
Total number of blocks	40	40	40	40
Total number of schools	320	320	400	400
Total no. of children interviewed in schools	NA	NA	1200	1,176
Total number of <i>anganwadis</i>	160	160	400	400

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 Tripura’s Department of Health. The formats were translated into the regional language, checked to ensure 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. Each monitor carried a copy of the letter explaining the process of monitoring and coverage validation, and requesting participation from school and *anganwadi* staff.

1.7 Field Implementation

Each monitor was allotted two schools and one *anganwadi* for process monitoring on each day. Subsequently, each monitor was allotted five schools and five *anganwadis* for coverage validation. Monitors were provided a tablet PC, charger, printed copy of monitoring formats, and albendazole tablets for demonstration during data collection. The details of sample schools were shared with them one day before the commencement of fieldwork to ensure compliance. During coverage validation, if a school was closed or non-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 an agreed upon format. Evidence Action reviewed all the data sets and shared the feedback to the agency for any inconsistency observed. All the analysis was performed using Stata version 13/14 and Excel 2013.

1.9 Quality Control

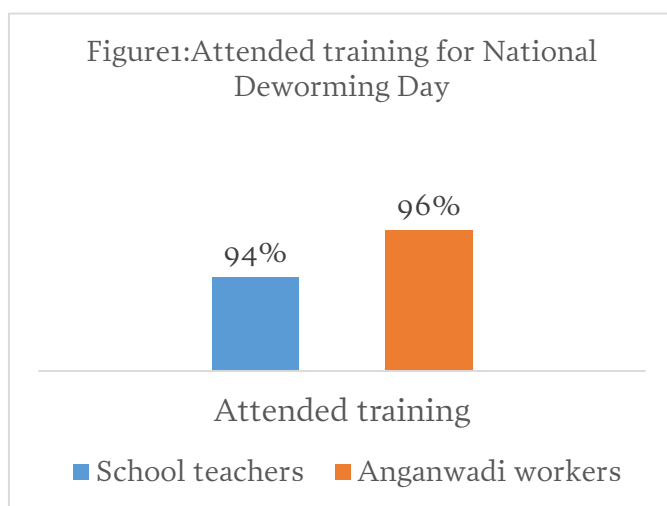
Appropriate quality control measures were taken to ensure data collected was accurate and comprehensive. Selected schools and *anganwadis* were contacted over the phone, to confirm that they had participated in monitoring and validation, including the visits made by Evidence Action staff to select schools to spot check the monitoring processes and to verify monitoring visits. In all cases, school and *anganwadi* staff were asked to sign a participation form and provide 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, with details in annexures.

2.1 Training

For effective implementation of the program, teachers and *anganwadi* workers are trained prior to NDD. Independent monitoring data showed 94% of schools and 96% of *anganwadi* workers



received training for the current NDD round (Figure 1). All school teachers and *anganwadi* workers are expected to attend the training regardless of training in previous rounds. Around half of the school teachers and *anganwadi* workers who did not attend training, reported lack of awareness regarding the date and location of training. Around 68% of trained teachers provided training to other teachers in their schools. Approximately 48% of schools and 67% of *anganwadis* reported that they did not receive an SMS about the deworming schedule (Table: PM 1). All the private schools covered in the sample reported to

attend the training for NDD, however, like other schools, only half of them received any SMSs (Table: PM6).

2.2 Integrated Distribution of NDD Materials Including Drugs

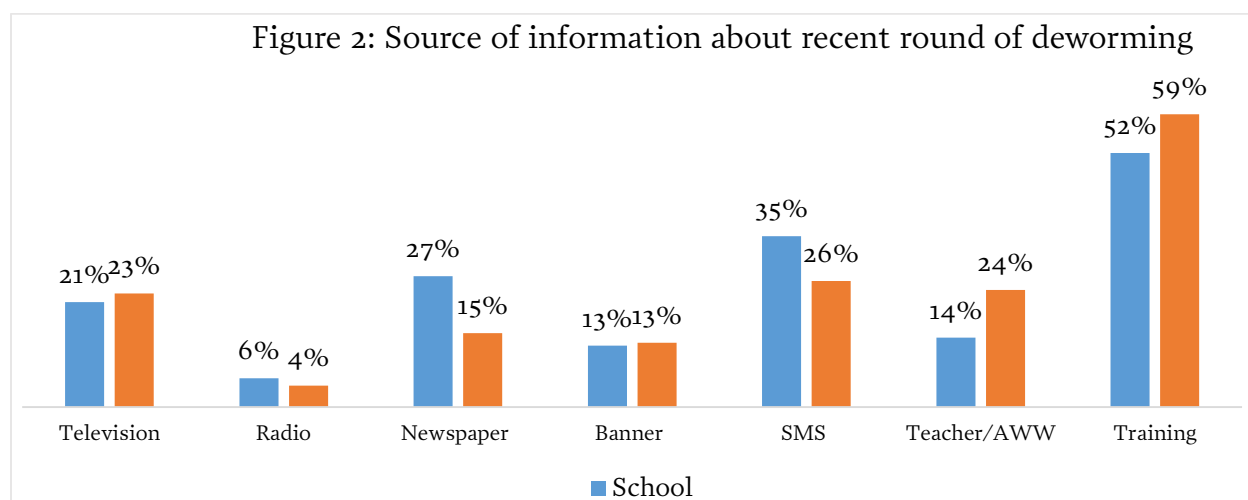
As per NDD guidelines, integrated distribution is a key strategy for providing all necessary IEC and training materials along with deworming tablets to schools and *anganwadi* centers at block level training.³ It is important to integrate distribution of all NDD materials to ensure timely and

³National 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

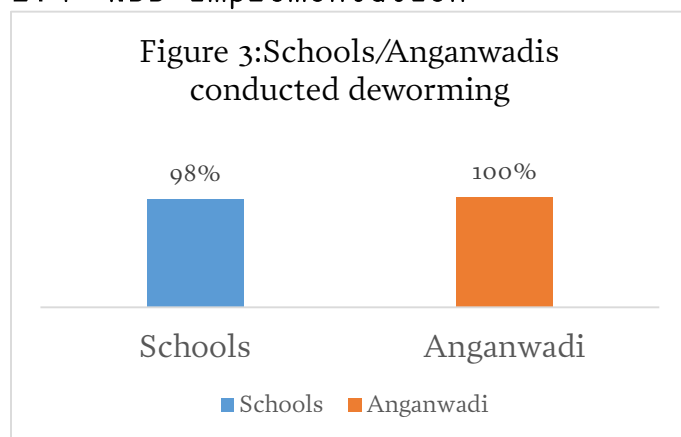
cost effective delivery of materials as separate integration would increase time and cost. Despite the well-defined NDD kit and integrated distribution cascade, findings demonstrate that 58% of schools and 57% of *anganwadis* in the state had an integrated distribution of materials, highlighting the significant distribution of materials individually in trainings (Table:PM3). Around 98% of schools and 99% of *anganwadis* received tablets and 95% of schools and 92% of *anganwadis* reported having a sufficient quantity of tablets. Around 94% of schools and 97% of *anganwadis* received posters/banners (Table: PM3). About 92% of schools and 97% of *anganwadis* received handouts/reporting forms (Figure 2). Moreover, more than two-thirds of school and *anganwadis* received adverse event forms. All the surveyed private schools received drugs and posters/banners. Moreover, 92% of private schools reported receiving handouts/reporting forms (Table: PM6).

2.3 Source of Information about Recent NDD Round

Training was the major source⁴ of information for schools (52%) and *anganwadis* (59%) for NDD, followed by SMSs for schools (35%) and for *anganwadis* (26%) (Figure 2). Training (58%) was the primary source of information for private schools followed by SMS (33%).



2.4 NDD Implementation

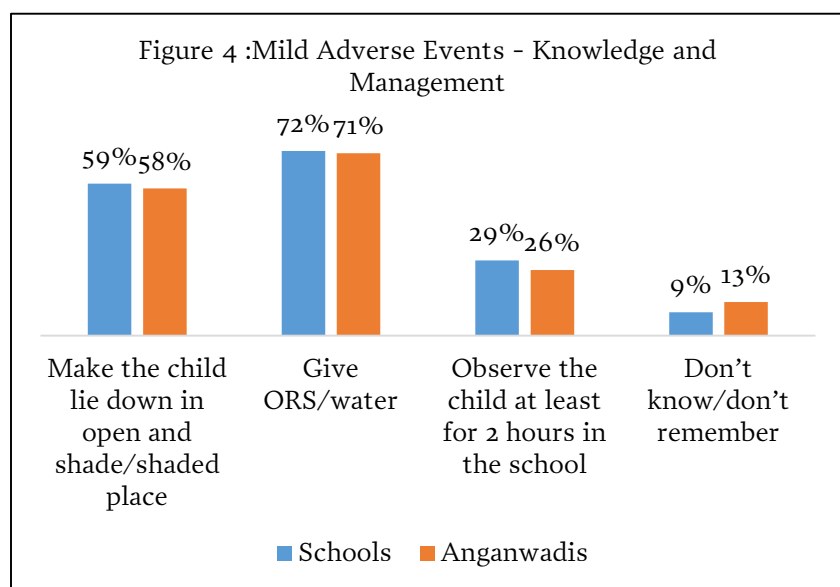


Process monitoring data shows that around 96% of schools and 98% of *anganwadis* reported conducting deworming on the day of the monitoring visit. However, monitors were able to observe ongoing deworming activity in 51% of schools and 61% of *anganwadis* respectively (Table: PM4). Further, coverage validation demonstrated that 98% of schools and 100% of *anganwadis* had dewormed children during NDD or Mop-Up Day (Figure 3).

⁴Major source of information is the medium most reported by school teachers/headmaster and *anganwadi* workers

2.5 Adverse Events - Knowledge and Management

Interviews with headmasters and teachers revealed substantial 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. However, only three percent of schools and *anganwadis* were able to report all the symptoms of an adverse event. Mild abdominal pain was listed as a symptom by 78% of principals and 61% of *anganwadi* workers, followed by nausea which was listed by 74% of principals and 79% of *anganwadi* workers. Less than 30% of school staff recognized fatigue and diarrhea as a symptom. Further, 59% of school teachers and 58% of *anganwadi* workers knew to

make a child lie down in an open, shady place in the case of any symptoms. The majority of schools and *anganwadis* knew to give ORS/water to the children experiencing symptoms and to keep them under observation for at least two hours (Figure 4). Further, 64% of schools and *anganwadis* reported the need to call a PHC doctor if symptoms persisted (Table: PM5). Most of the sampled private schools were aware of the possible adverse events that could be reported by children after deworming (Table: PM 6). Around two percent of schools reported any cases of adverse events (Table: CV1).

2.6 Recording Protocol

Coverage validation data demonstrated that 69% of schools and 67% of *anganwadis* followed correct recording protocols. For the analysis, information on 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 20% of *anganwadis* followed partial protocols (marking down different symbols or making a list of dewormed children), however, twenty-one percent of schools and 13% 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, four percent of headmasters and five percent of *anganwadi* workers were not aware of this requirement. Further, it was observed during coverage validation that reporting forms were available in 86% of schools and 82% of *anganwadis*.

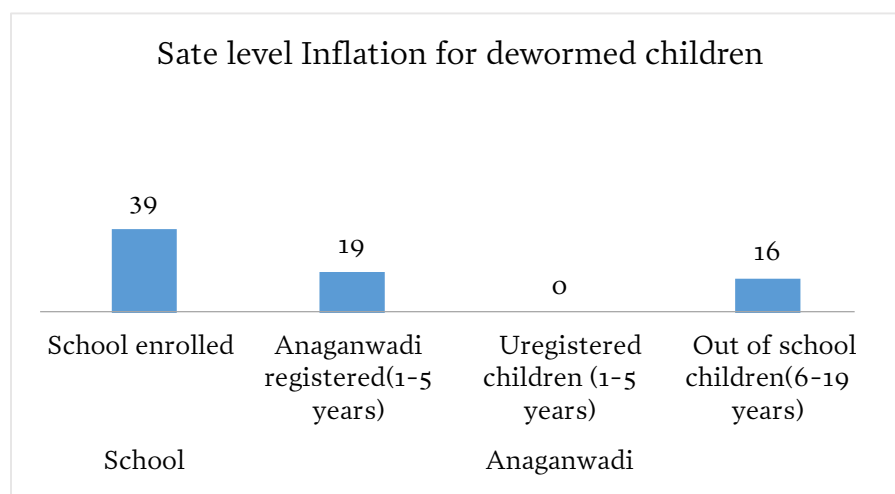
ASHA workers (ASHAs) have a critical role to play in the success of the NDD program. As part of the community mobilization and awareness campaign, ASHAs conduct village meetings with parents, mobilize out-of-school children, and disseminate information through local platforms such as *gram panchayats* 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. As per NDD guidelines, ASHAs were required to prepare a list of the children not attending schools and *anganwadis* and submit it to *anganwadi*

workers; however, findings suggest that only seven percent of ASHAs and 26% of *anganwadis* had lists of out-of-school (6-19 years) and unregistered (1-5 years) children respectively (Table: CV 1).

2.7 Coverage Validation

Verification factors⁵ are common indicators to measure the accuracy of reported treatment values for Neglected Tropical Disease control programs. It compares the aggregated number of ticks in school/*anganwadi* registers (indicating that children were dewormed) to the coverage reported by schools/*anganwadis* in reporting forms submitted to the state. Thus, the verification factor was estimated on the basis of availability of a copy of reporting forms at schools and *anganwadis*. The state level verification factor for enrolled children was 0.71, indicating that on an average for every 100 dewormed children reported by the school; seventy-one were verified through available documents.

This corresponds to an overall 39% inflation of reporting in schools, meaning that reported numbers appear to be approximately 39% higher than the numbers recorded in school attendance registers.



Similarly, overall state level verification factors for children dewormed at *anganwadis* was 0.85, with an inflation of 17%. However, category-wise verification factors for registered (1-5 years), unregistered (1-5 years), and out-of-school (6-19 years) children were 0.84, 1.0 and 0.86 with a corresponding inflation of 19%, zero percent, and 16% respectively (Figure 5).

Further, attempts were also made to understand NDD coverage in schools and *anganwadis*. As per the state government coverage report, 83% of enrolled school-age children and 86% of *anganwadis* targeting preschool-age children were dewormed in the current round of NDD. Findings from school coverage validation data suggests that on average, we could verify 71% of the total dewormed numbers reported by schools. Applying this verification factor to government reported school coverage, we found that 59% of children could have been dewormed in the 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 schools. We estimated NDD treatment

⁵A 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 in schools considering maximum attendance of children on NDD dates. The coverage estimate based on attendance data provides a more robust estimate as 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 98% of schools conducted deworming on NDD or Mop-Up Day, and a maximum of 82% of the total school enrolled children were in attendance. Moreover, 99% of children interviewed reported to have received the albendazole and 99% of them reported to have consumed it under supervision. Based on these factors, a total of 79% of children could have been dewormed in the schools. This indicates that NDD coverage lies somewhere between 59 to 79 percent in schools in Tripura, below the WHO threshold of 75% coverage.

In the case of *anganwadis*, data suggests that on average, we could verify 85% of the total dewormed numbers reported by *anganwadi* workers. Applying this verification factor to government reported coverage (86%) in *anganwadis*, it is estimated that approximately 74% of children could have been dewormed in *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 independent monitoring exercise conducted during Tripura's NDD August 2016 round highlights opportunities to strengthen future rounds. As NDD is a fixed-day approach and engages multiple stakeholders, it is critical that all program components are aligned with each other for successful program implementation and to minimize gaps and delays. The following are the key recommendations for program improvements that emerged from the process monitoring and coverage validation exercise.

1. Findings exhibit high participation of schools and *anganwadis* in training; however, findings also suggest a greater need for improving training quality and training reinforcement messages particularly on awareness about worm infection, its prevention, dosage, administration, and adverse event management. Furthermore, school teachers who attended training should be encouraged to impart training to other teachers in the school before NDD to ensure program quality in their respective schools.
2. Intensive efforts towards generating community awareness and mobilizing children are critical to achieving high coverage. Most of the *anganwadi* centers did not have the list of out-of-school and unregistered children, and efforts are required to engage ASHAs from the first phase of NDD to prepare the list of out-of-school and unregistered children through community meetings and awareness efforts.
3. Findings suggest scope for further improvement in integrated distribution of drugs, IEC, and reporting forms through the training cascade. The state needs to continue the practice for further improvement to ensure that bundling and proper distribution is done at all levels down to the blocks.
4. Coverage validation data suggest that a greater emphasis on recording protocols during the training is likely to improve the quality of coverage data. Training and reinforcement messages shared through SMS need to increase focus on the importance of correct reporting protocols and maintaining accurate and complete documentation. Practical sessions on recording protocol for teachers and *anganwadi* workers can be organized during training.
5. Findings suggest scope to further strengthen training on adverse events and symptom recognition.

6. In order to achieve even higher coverage, greater emphasis should be given on generating community awareness and mobilizing children. As a substantial proportion of *anganwadi* centers did not possess a list of unregistered and out-of-school children, greater involvement of ASHAs in mobilizing out-of-school children and spreading awareness about deworming benefits is required. This could be further strengthened by highlighting the role of ASHAs in the joint directive, encouraging their participation in training, and having direct reminders issued to them with information on the incentives of deworming.

4. WAY FORWARD

Program monitoring of the August 2016 NDD round in Tripura has revealed useful insights for increasing coverage in future rounds. As mandated in the NDD operational guidelines, efforts will be coordinated to support the stakeholder departments more intensively 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. Emphasis should be placed on improving training quality by organizing practical sessions on recording protocol for schools and *anganwadis* to ensure proper data documentation and management. This will help to improve the accuracy of coverage data. ASHAs and AWWs 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 ⁶	N ⁷	%	D	N	%
Attended training for current round of NDD	320	302	94.4	160	154	96.3
Reasons for not attending official training						
Location was too far away	18	1	5.6	6	0	0.0
Did not know the date/timings/venue	18	9	50.0	6	3	50.0
Busy in other official/personal work	18	4	22.2	6	2	33.3
Attended deworming training in the past	18	3	16.7	6	0	0.0
Not necessary	18	1	5.6	6	0	0.0
No incentives/no financial support	18	1	5.6	6	1	16.7
Trained teacher provided training to						
All other teachers	302	206	68.2	NA	NA	NA
Few teachers	302	48	15.9	NA	NA	NA
No (himself/herself only teacher)	302	25	8.3	NA	NA	NA
No, did not train other teachers	302	23	7.6	NA	NA	NA
Awareness about the ways a child can get worm infection	320	308	96.3	160	146	91.3
Different ways a child can get worm infection						
Not using sanitary latrine	308	196	63.6	146	89	61.0
Having unclean surroundings	308	153	49.7	146	79	54.1
Consume vegetables and fruits without washing	308	148	48.1	146	68	46.6
Having uncovered food and drinking dirty water	308	111	36.0	146	52	35.6
Having long and dirty nails	308	138	44.8	146	71	48.6
Moving in bare feet	308	45	14.6	146	45	30.8
Having food without washing hands	308	165	53.6	146	95	64.4
Not washing hands after using toilets	308	37	12.0	146	15	10.3
Awareness about all the possible ways a child can get worm infection⁸	320	26	8.1	160	8	5.0
Perceive that health education should be provided to children	320	289	90.3	160	138	86.3
Knowledge about correct dose of albendazole tablet						
1-2 years of children	NA	NA	NA	160	156	97.5
6-19 years of children	320	316	98.8	160	156	97.5
Awareness about non-administration of albendazole tablet to sick child						

⁶ Denominator for the indicator

⁷ Numerator for the indicator

⁸ 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.

Will give albendazole tablet to the child	320	5	9.0	160	4	5.6
Will not give the albendazole tablet to the child	320	315	98.5	160	156	97.5
Awareness about consuming albendazole tablet						
Chew before swallowing	320	289	90.3	160	142	88.8
Swallow it directly	320	31	9.7	160	18	11.3
Awareness about consuming albendazole in school/<i>anganwadi</i>	320	309	96.6	160	155	96.9
Awareness about the last date for submitting the reporting form	320	177	55.3	160	80	50.0
Aware that completed reporting form should be submitted to ANM/MPW	320	232	72.5	160	101	63.2
Awareness to retain a copy of the reporting form post submission	320	306	95.6	160	152	95.0
Source of information about current NDD round						
Television	320	68	21.3	160	37	23.1
Radio	320	19	5.9	160	7	4.4
Newspaper	320	85	26.6	160	24	15.0
Banner	320	40	12.5	160	21	13.1
SMS	320	111	34.7	160	41	25.6
Other school/teacher/ <i>anganwadi</i> worker	320	45	14.1	160	38	23.8
Training	320	165	51.6	160	95	59.4
Receive SMS for current NDD round	320	167	52.2	160	69	43.1

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	320	115	35.9	160	76	47.5
Yes, already done	320	103	32.2	160	37	23.1
Yes, after sometime	320	82	25.6	160	39	24.4
No, will not administer today	320	20	6.3	160	8	5.0
Schools/ <i>anganwadis</i> conducted deworming on either of the day	320	305	95.5	160	156	97.5
Schools/ <i>anganwadis</i> conducted deworming on NDD ⁹	160	152	95.0	80	79	98.8
Schools/ <i>anganwadis</i> conducted deworming on Mop-Up Day ¹⁰	160	152	92.5	80	73	91.3
Reasons for not conducting deworming						
No information	20	3	15.0	8	1	12.5
Albendazole tablet not received	20	1	5.0	8	1	12.5

⁹Based on the samples visited on National Deworming Day.

¹⁰Based on the samples visited on mop-up day.

Apprehension of adverse events	20	0	0.0	8	0	0.0
Already dewormed all children on deworming day ¹¹	20	7	35.0	8	4	50.0
Others ¹²	20	9	45.0	8	2	25.0
Anganwadis having list of unregistered/out-of-school children	NA	NA	NA	160	58	36.2
Out-of-school children given albendazole tablet	NA	NA	NA	160	118	75.7
Unregistered children given albendazole tablet	NA	NA	NA	160	104	64.5
Sufficient quantity of albendazole tablet¹³	315	298	94.6	159	146	91.8

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

Items	Schools				Anganwadi			
	Received (N=320)	D*	Received in training	Verified	Received (N=160)	D*	Received in training	Verified
Albendazole tablet	98.4(315)	315	89.5 (282)	99.1 (312)	99.4 (159)	159	93.1 (148)	98.7 (157)
Poster/banner	94.1(301)	301	92.0 (277)	96.7 (291)	96.9 (155)	155	92.9 (144)	98.1 (152)
Handouts/reporting form	92.2(295)	295	91.9 (271)	97.6 (288)	96.9 (155)	155	95.5 (148)	97.4 (151)
Adverse event reporting form	65.6 (210)	210	94.8 (199)	97.6 (205)	61.9 (99)	99	96.0 (95)	98.0 (97)
Others ¹⁴	7.5 (24)	24	66.7 (16)	87.5 (21)	10.0 (16)	16	62.5 (10)	68.8 (11)
Received all material	62.5 (200)	200	93.5 (187)	95.5 (191)	60.6 (97)	97	93.8 (91)	96.9 (94)
Integrated distribution¹⁵	58.4(187)				56.9(91)			

Note: The denominator for item "Received" is 320 for schools and 160 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			Anganwadi		
	D	N	%	D	N	%
Deworming activity was taking place	320	162	50.6	160	98	61.3
Albendazole tablet distributed by						
Teacher/headmaster	115	115	100.0	76	0	0.0
Anganwadi worker	115	0	0.0	76	74	97.4
ASHA	115	0	0.0	76	2	2.6

¹¹Based on the samples that did not conduct deworming on mop-up day.

¹²Includes, parents' objection, children/student absent, postponed due to election.

¹³ This indicator is based on the sample that received albendazole tablet.

¹⁴ Pen, notepad, document file, folder, chart, pencil and annexure

¹⁵ 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

Followed any recording protocol	218	198	90.8	113	101	89.4
Protocol followed						
Putting single/double tick	198	167	84.3	101	76	75.3
Put different symbols	198	13	6.6	101	8	7.9
Prepare the separate list for dewormed	198	18	9.1	101	17	16.8
Visibility of poster/banner during NDD/Mop-Up Day	301	279	92.7	155	145	93.6

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

Indicators	Schools			Anganwadi		
	D	N	%	D	N	%
Opinion of occurrence of an adverse event after taking albendazole tablet	320	126	39.4	160	66	41.3
Opinion of occurrence of possible adverse events						
Mild abdominal pain	126	98	77.8	66	40	60.6
Nausea	126	93	73.8	66	52	78.8
Vomiting	126	68	54.0	66	38	57.6
Diarrhea	126	37	29.4	66	20	30.3
Fatigue	126	32	25.4	66	20	30.3
All possible adverse event ¹⁶	320	11	3.4	160	4	2.5
Awareness about mild adverse event management						
Make the child lie down in open and shade/shaded place	320	190	59.4	160	92	57.5
Give ORS/water	320	231	72.2	160	114	71.3
Observe the child at least for 2 hours in the school	320	94	29.4	160	41	25.6
Don't know/don't remember	320	29	9.1	160	21	13.1
Awareness about sever adverse event management						
Call PHC or emergency number	320	205	64.1	160	102	63.8
Take the child to the hospital /call doctor to school	320	187	58.4	160	89	55.6
Don't know/don't remember	320	7	2.2	160	6	3.8
Occurrence of cases of any adverse event	218	31	14.2	113	13	11.5
Available contact numbers of the nearest ANM or MO-PHC	320	239	74.7	160	122	76.3

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

Indicators ¹⁷	D	N	%
Attended training for current round of NDD	12	12	100.0
Received albendazole tablet	12	12	100.0
Sufficient quantity of albendazole tablet	12	12	100.0
Received poster/banner	12	12	100.0
Received handouts/ reporting form	12	11	91.7
Received SMS for current NDD round	6	6	50.0

¹⁶Includes 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

¹⁷These 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

Albendazole administered to children	11	10	91.7
Reasons for not conducting deworming			
No information	0	0	0
Albendazole tablet not received	0	0	0
Already dewormed all children on deworming day(based on Mop-Up Day sample)	1	1	100
Albendazole tablet administered to children by teacher/headmaster¹⁸	12	12	100.0
Perceive that health education should be provided to children	12	11	91.7
Knowledge about correct dose of albendazole tablet	12	12	100.0
Awareness about non-administration of albendazole tablet to sick child	12	10	83.3
Opinion of occurrence of an adverse event after taking albendazole tablet	12	9	75.0
Opinion of occurrence of possible adverse events			
Mild abdominal pain	9	5	55.6
Nausea	9	6	66.7
Vomiting	9	6	66.7
Diarrhea	9	2	22.2
Fatigue	9	4	44.4
Occurrence of cases of any adverse event	9	10	11.1
Awareness about mild adverse event management			
Let the child rest in an open and shaded place	12	9	75.0
Provide clean water to drink/ORS	12	9	75.0
Contact the ANM/nearby PHC	12	9	25.0
Available contact numbers of the nearest ANM or MO-PHC	12	10	83.3
Followed correct reporting protocol	6	5	85.7

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

Indicators ¹⁹	School			<i>Anganwadi</i>		
	D	N	%	D	N	%
Conducted deworming ²⁰	400	392	98.0	400	398	99.5
Day of albendazole administration²¹						
National Deworming Day	392	391	99.7	397	395	99.4
Mop-Up Day	392	346	88.3	397	311	78.3
Between NDD and Mop-Up Day	392	15	3.8	397	5	1.3
Reasons for not conducting deworming						
No information	8	3	37.5	3	0	0.0
Drugs not received	8	2	25.0	3	0	0.0
Apprehension of adverse events	8	0	0.0	3	0	0.0

¹⁸ This indicator is based on samples where deworming was ongoing.

¹⁹Weighted percentages and numbers are presented against each indicator in all the coverage validation tables. In some indicators denominators may vary because of this.

²⁰ Schools and *anganwadis* that conducted deworming on during NDD or Mop-up Day

²¹ Total percentage may add to more than 100 as multiple responses are allowed.

Others ²²	8	3	37.5	3	3	100
Albendazole left after deworming	392	265	67.6	397	239	60.3
Number of albendazole left						
Less than 50	265	219	82.6	209	208	99.7
50-100	265	21	7.9	209	1	0.3
More than 100	265	25	9.4	209	0	0.0
Copy of reporting form was available for verification	392	336	85.7	397	327	82.4
Reasons for non-availability of copy of reporting form						
Did not received	56	1	1.8	79	0	0.0
Submitted to ANM	56	31	55.4	79	52	65.9
Unable to locate	56	17	30.4	79	18	23.1
others	56	7	12.5	79	9	11.1
<i>Anganwadis</i> having list of unregistered children	NA	NA	NA	397	28	7.1
<i>Anganwadis</i> having list of out-of-school children	NA	NA	NA	397	101	25.6
Reported cases of adverse event	392	6	1.5	397	0	0.0

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

Indicators	School			<i>Anganwadis</i>		
	N	D	%	D	N	%
Followed correct²³ recording protocol	375	259	69.1	397	264	66.6
Followed partial²⁴ recording protocol	375	38	10.1	397	81	20.3
Followed no²⁵ recording protocol	375	78	20.8	397	52	13.1
State level verification factor²⁶	39,930	28,746	0.71	11,060	9,419	0.85
<i>Anganwadi</i> registered children	NA	NA	NA	9,263	7,784	0.84
<i>Anganwadi</i> unregistered children	NA	NA	NA	589	593	1.0
Out-of-school children	NA	NA	NA	1,208	1,042	0.86
State level inflation rate²⁷	28,746	11,184	38.9	9,419	1,641	17.4
<i>Anganwadi</i> registered children	NA	NA	NA	7,784	1,479	18.9
<i>Anganwadi</i> unregistered children	NA	NA	NA	593	-4	0.0

²² It includes teachers were not interested in deworming activity and *anganwadi* worker was not well.

²³ 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.

²⁴ 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.

²⁵ No protocol includes all those schools where none of the classes followed any protocol to record the information of dewormed children.

²⁶ Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=336) and *anganwadis* (n=318) where deworming was conducted and copy of reporting forms were available for verification.

²⁷ Proportion of over reported dewormed children against total verified children in schools and *anganwadis*.

Out-of-school children	NA	NA	NA	1,042	166	15.9
Attendance on pre-NDD ²⁸	41,051	30,003	73.1	NA	NA	NA
Attendance on NDD	41,051	27,973	68.1	NA	NA	NA
Attendance on Mop-Up Day	41,051	27,046	65.9	NA	NA	NA
Children who attended on both NDD and Mop-Up Day	41,051	21,206	51.7	NA	NA	NA
Maximum attendance of children on Deworming Day and Mop-Up Day	41,051	33,813	82.4	NA	NA	NA
School level inflation rate for schools and <i>anganwadis</i> that followed the correct recording protocol	21,525	7,604	35.3	NA	NA	NA
Estimated NDD coverage ²⁹	59-79			74		

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

Indicators	D	N	%
Children received deworming tablets	1,176	1,162	98.8
Children consumed deworming tablet	1,162	1,154	99.3
Children aware about the deworming tablets	1,162	1,092	93.9
Source of information for deworming			
Teacher / school	1092	1079	1.2
Television	1092	1	0.1
Radio	1092	0	0
Newspaper	1092	0	0
Poster/Banner	1092	0	0
Parents/siblings	1092	7	0.6
Friends / neighbors	1092	5	0.5
Way children consumed the deworming tablet			
-Chewed tablet before swallowing	1,154	1,083	93.8
-Swallowed tablet directly	1,154	71	6.2
Supervised administration of deworming tablets	1,154	1,138	98.6

Note: Three children were interviewed from all those schools (392) who reported to observe deworming during NDD and Mop-Up Day out of total 400 schools visited during coverage validation.

²⁸This is attendance of previous day of NDD.

²⁹Coverage 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 forms was not available for verification. Further, estimated coverage based on attendance data in schools includes attendance on only NDD and mop-up day.