



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

REPORT
August 2016

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EXECUTIVE SUMMARY

India, with an estimated 223¹ million (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 of preschool and school-age, in *anganwadis* and schools, including unregistered (1-5 years) and out-of-school (6-19 years) children.

Uttar Pradesh observed the third round of NDD in 32 out of 75 districts on September 10, 2016, followed by Mop-Up Day on September 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 a mass deworming program, followed by coverage validation to evaluate the accuracy of the reporting data and coverage estimates post deworming.

Findings from process monitoring highlighted that 86% of schools and 81% of the *anganwadis* observed deworming. Approximately 85% of schools and 80% of *anganwadis* received sufficient tablets for deworming and 75% of schools and 73% of *anganwadis* received program posters/banners. However, integrated distribution of NDD kits² was low for both schools (28%) and *anganwadis* (25%). Around 79% of schools and 71% of *anganwadis* received training for the recent round of deworming. Coverage validation data revealed that only half of the schools followed correct protocols for recording the number of children dewormed, however, around 41% of schools did not adhere to any recording protocol. Coverage validation findings exhibited an inflation of 77% (verification factor of 0.57) for children enrolled in schools. Nevertheless, interviews indicated that 96% of all enrolled children received a deworming tablet. Estimates show that coverage lies somewhere between 47%-67% in schools.

The findings from NDD's independent monitoring highlights opportunities to strengthen and improve the quality and coverage of the program by ensuring timely communication of training dates to schools and *anganwadis*. The database of functionaries across all stakeholder departments needs to be regularly updated to ensure timely information dissemination to key audiences. Efforts are needed to strengthen the integrated distribution of the deworming kit. Attention also needs to be directed to scaling the program in private schools. During training, emphasis should be placed on organizing practical sessions on recording protocol for schools and *anganwadis* to better ensure proper data documentation and management. Moreover, enhanced engagement of ASHAs and AWWs is also critical for the success of program.

¹ Soil 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 Uttar Pradesh’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 the systems to undertake deworming, adhering to the prescribed deworming processes, and ensuring accurate coverage reporting are key components of the monitoring 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 cross verification 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 is a crucial component to measuring program success. With close support from Evidence Action’s state and field teams, the health department collected and compiled the coverage report for NDD within the established reporting timelines. School teachers and *anganwadi* workers had been trained on the recording and reporting protocols. These protocols, along with 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. Every teacher and *anganwadi* worker was required to put a single tick mark (✓) 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.

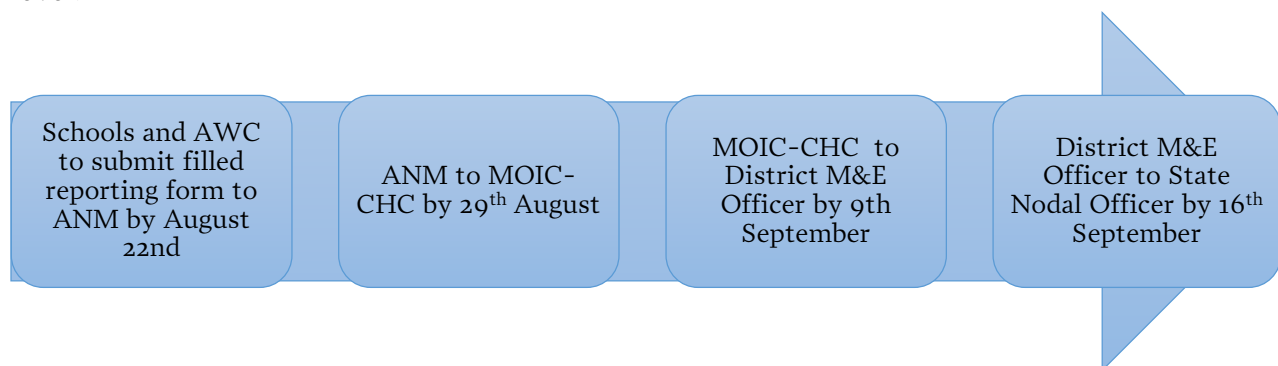


Figure A: Reporting cascade and timelines

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 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 32 out of 75 total districts of Uttar Pradesh. To do this, Evidence Action hired Karvy Insights Limited, an experienced independent research agency that provided 105 monitors. A two-stage probability sampling procedure was adopted to select schools and *anganwadis* for independent monitoring (**Table A**). Selected monitors covered 540 schools and 85 *anganwadis* during process monitoring on NDD and Mop-Up Day, and 1,680 schools 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	32	32	32	32
Total number of blocks	107	107	105	105
Total number of schools	420	540	1680	1680
Total no. of children interviewed in schools	NA	NA	5040	4509
Total number of <i>anganwadis</i> ³	210	84	NA	NA

1.4 Independent Monitoring Formats

To ensure comprehensive coverage and triangulation of data, two 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 in consultation with Uttar Pradesh’s Department of Health. The formats were translated into the regional language, checked to ensure that the language was concise and easy understand, and loaded onto tablet PCs. Using these formats, monitors collected information on training, availability and use of IEC material, availability and submission of reporting forms, and management of adverse events.

1.5 Authorization from Government

Evidence Action conducted independent monitoring with approval from the state government and a supporting approval letter was issued by the Department of Health. Each monitor carried a copy of the letter explaining the process of monitoring and coverage validation and requesting participation from school and *anganwadi* staff.

1.6 Training of Trainers and Independent Monitors

A two-phase training program was organized at the state level. In the first phase, representatives from Evidence Action provided a one-day comprehensive training to ten

³ As there was a strike of *Anganwadi* workers, less number of *anganwadis* were covered during process monitoring and were dropped from the coverage validation.

master trainers of Karvy Insights in Lucknow on September 6, 2016. These master trainers conducted a two-day training, supervised by Evidence Action, of 150 monitors during September 7-8, 2016 in batches of 60 monitors. A total of 150 trainees participated, including buffer monitors and supervisors. The training included a brief orientation on NDD, the importance of independent monitoring, and the details of monitoring formats. Monitors received a demonstration of the tablet PC and were briefed on the CAPI administration process and troubleshooting, including at least one practice session in the presence of the trainers and Evidence Action representatives. At the end of the training, all participants were tested on their degree of comprehension and 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, each monitor was allotted five schools 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 that monitors did not inform local educational authorities ahead of their visit, thus potentially affecting 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 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

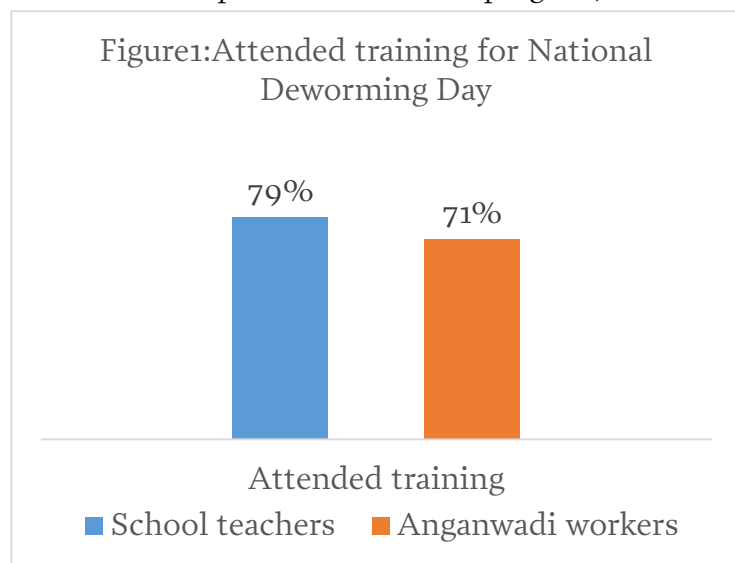
Appropriate quality control measures were taken to ensure data collected was accurate and comprehensive. Selected schools and *anganwadis* were contacted over the phone to confirm they had participated in monitoring and validation. Further, Evidence Action staff visited select schools and *anganwadis* 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 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. Figure 1 shows that 79% of schools and 71% of *anganwadi* workers received training for the NDD August 2016 round. Around 64% of school teachers and 67% of *anganwadi* workers did not attend training due to lack of information sharing surrounding the date, time, and location of the training. All school teachers and *anganwadi* workers are expected to attend the training regardless of training in previous rounds. Only fifty-one percent of trained teachers provided training to other teachers in their school. Approximately 45% of

schools and 49% of *anganwadis* reported that they did not receive an SMS about the deworming schedule (**Table: PM 1**).

2.2 Integrated Distribution of Deworming Materials Including Drugs

As per NDD guidelines, there should be an integrated distribution process, providing all necessary IEC and training materials along with deworming tablets to schools and *anganwadi* centers at block level training in the form of a NDD kit.⁴ 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 plan, findings demonstrate that only 28% of schools and 25% of *anganwadis* in the state had integrated distribution of materials, highlighting a large distribution of materials individually in trainings (**Table: PM3**). Around 89% of schools and 83% of *anganwadis* received tablets for deworming. Moreover, 85% of schools and 80% of *anganwadis* reported to have received sufficient drugs for deworming (**Table: PM2**). Around 75% of schools and 73% of *anganwadis* received posters/banners (**Table: PM3**). About 70% of schools and 61% of *anganwadis* received handouts/reporting forms.

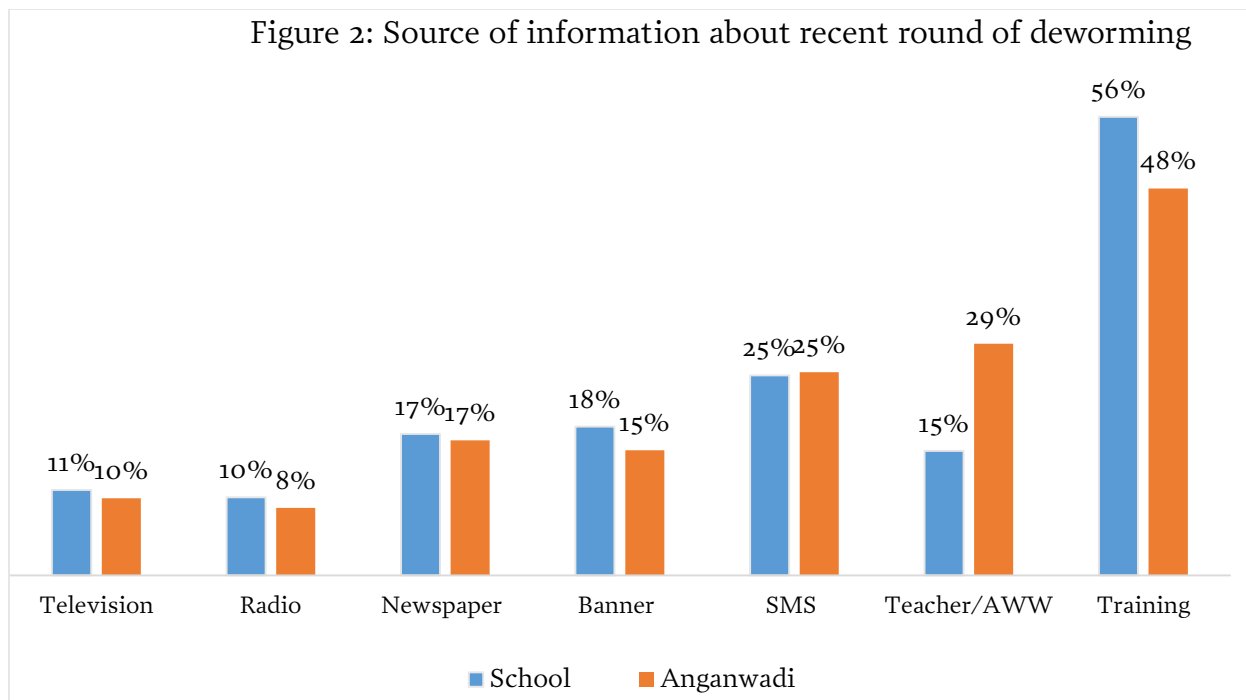
2.3 Source of Information about Recent Round of Deworming

Training was the major source⁵ of information for the schools (56%) and *anganwadis* (48%) for NDD, followed by SMS (25%) for the school or *anganwadi* worker and (29%) for *anganwadis*. Less than 30% of principals/teachers mentioned banners (18%) as a source of information and 25% of *anganwadi* workers mentioned SMSs (**Figure 2**).

⁴National 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

⁵Major source of information is the medium most reported by school teachers/headmaster and *anganwadi* workers

Figure 2: Source of information about recent round of deworming

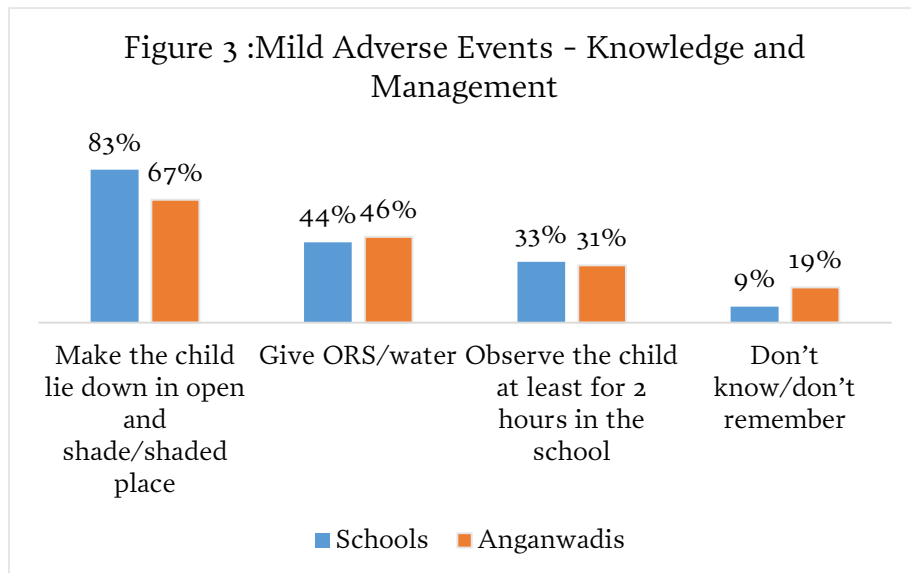


2.4 Implementation of Deworming

Process monitoring data depicted that around 86% of schools and 81% of *anganwadis* reported conducting deworming on the day of the monitoring visit. Monitors were able to observe ongoing deworming activity in 41% of schools and 36% of *anganwadis* respectively (**Table: PM4**). Further, coverage validation demonstrated that 90% of schools had dewormed children during NDD or Mop-Up Day.

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 of the appropriate protocols to follow in the case of such events.



However, only six percent of schools and 12% of *anganwadis* were able to report all the symptoms of an adverse event. Mild abdominal pain was listed as a symptom by 74% of principals and nausea was listed by 80% of *anganwadi*

workers, followed by vomiting, which was listed by 67% of principals and 68% of *anganwadi*

workers. Less than 30% of school staff recognized fatigue as a symptom. Further, 83% of school teachers and 67% of *anganwadi* workers knew to have a child lie down in an open, shady place in case of any symptoms of adverse events. In all, less than 50% of schools and *anganwadis* also knew to manage an adverse event by giving ORS/water to the child and keeping them under observation for at least two hours at schools/*anganwadis* (Figure 3). Further, 76% of schools and 69% of *anganwadis* reported the need to call a PHC doctor if symptoms persisted (Table: PM5). Around three percent of schools reported any cases of adverse events (Table: CV1).

2.6 Recording Protocol

Coverage validation data demonstrated that half of the schools surveyed followed the correct 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 followed partial protocols (marking down different symbols or making a list of dewormed children), however, forty-one percent of schools did not follow any protocol to keep a record 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, twelve percent of headmasters and 14% of *anganwadi* workers were not aware of this requirement. Further, it was observed during coverage validation that reporting forms were available in only 52% of schools.

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.

2.7 Coverage Validation

Verification factors⁶ 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 report submitted by schools/*anganwadis* to the state. Thus, the verification factor was estimated on the basis of availability of a copy of reporting forms at schools. The state level verification factor for enrolled children was 0.57, indicating that, on average, for every 100 dewormed children reported by the school; fifty-seven were verified through available documents. This corresponds to an overall 77% inflation of reporting in the schools, meaning that reported numbers appear to be approximately 77% higher than the numbers recorded in school attendance registers.

Further, attempts were also made to understand NDD coverage in schools and *anganwadis*. The state government reported, 82% of school enrolled children and *anganwadis* targeting preschool-age children were dewormed in the current round of NDD. Findings from school

⁶A 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 validation data suggests that on average, we could verify 57% of total dewormed numbers reported by schools. Applying this verification factor on government reported school coverage, we found that 47% of children could have been dewormed in the schools. The calculation of the verification factor is based on only those schools and *anganwadis* where a copy of the reporting form 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, 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 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 90% of schools conducted deworming on either NDD or Mop-Up Day, and a maximum of 82% of the total enrolled school children were in attendance. Moreover, 96% of children interviewed reported to have received albendazole and 95% of them reported having consumed it under supervision. Based on these factors, a total of 67% of children could have been dewormed in schools. This indicates that NDD coverage in schools lies somewhere between 47-67 percent in the state, below the WHO threshold of 75% coverage (**Table: CV2**).

3. RECOMMENDATIONS

The independent monitoring exercise conducted during Uttar Pradesh's second round of NDD in August 2016 identifies gaps and opportunities to improve and strengthen future rounds. As National Deworming Day is a fixed-day approach and engages multiple stakeholders, it is critical that all program components are aligned for successful program implementation and to prevent gaps and delays. The following are the key recommendations for program improvements that emerged from the process monitoring and coverage validation exercise.

1. There is a need for improved drug distribution efforts; given that monitoring data demonstrated a substantial gap in schools (11%) and *anganwadis* (17%) that did not receive drugs in time for the deworming round; a smaller percentage received insufficient numbers of drugs to treat their catchment population.
2. Despite substantial participation of the teachers and *anganwadi* workers in training, there is scope for improvement in training attendance through pre-planning of sessions and timely communication of training dates and venues to frontline workers. Emphasis should be on improving training quality by administering quality assurance tools like training monitoring and sending training reinforcement messages particularly on awareness about worm infection, its prevention, and adverse event managements. That a large numbers of teachers and *anganwadi* workers did not know that open defecation contributes to worm infection, suggests the need for greater focus on the importance of sharing prevention messages on deworming, dosage and recording protocol.
3. School teachers who attend training should be mandated to impart adequate training to other teachers in the school. Further, efforts are required to ensure that those teachers who attended the training impart adequate training to other teachers in the schools and *anganwadis*.
4. Half of the school headmasters and *anganwadi* workers did not receive deworming related SMSs during NDD. Efforts are required to regularly update the contact database

of functionaries across all stakeholder departments for comprehensive, effective and timely dissemination of information to officials/functionaries.

5. Integrated distribution is a crucial component for the success of NDD. Hence, focused efforts are required to align the distribution plan to be handed over to the teachers/headmasters and *anganwadi* workers at the time of training. Efficient planning for timely drug procurement and timely sharing of training schedules would further strengthen the effectiveness of integrated distribution. Efforts are required to ensure that the NDD kits, especially drug procurement and effective distribution, reach schools and *anganwadi* workers on time at the block level. Tracking the distribution cascade to identify and fill gaps in a timely manner will likely improve the availability of IEC materials.
6. Despite the directives from state officials, a copy of the reporting form was not available in half of the surveyed schools, thus affecting the evaluation of reported coverage data. Along with providing two copies of reporting forms during training, trainers should ensure that teachers/headmasters understand the directive to maintain a copy of reporting forms.
7. Coverage validation data suggest 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 correct and complete documentation. Practical sessions on recording protocol for teachers and *anganwadi* workers can be organized during training. This would help to reduce recording and reporting errors and subsequently inflation in coverage reporting.
8. Monitoring data identified the need for improved adverse event training, as many schools and *anganwadis* were unable to report all the symptoms of an adverse event, possibly contributing to the low reporting of adverse events at three percent.
9. In order to achieve even higher coverage, greater emphasis should be placed on generating community awareness and mobilizing children. 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, and having direct reminders issued to them with information on the incentives of deworming.

4. WAY FORWARD

Program monitoring of the third round of NDD in Uttar Pradesh has provided useful insights for increasing scale and coverage in future rounds. By aligning with the NDD operational guidelines, efforts will be better coordinated to more intensively support the stakeholders in the initial phase of program planning. Better planning, strategies for integrated distribution, training supervision, and a greater emphasis on recording and reporting protocols are instrumental to improving program coverage. Along with government schools, more attention needs to be directed on scaling the program in private schools. Emphasis should be placed on improving training quality by organizing practical sessions on recording protocols for teachers and *anganwadi* workers to ensure proper data documentation and management; this will help to improve the accuracy of coverage data. Greater engagement of ASHAs and AWWs should be encouraged, as they are responsible for conducting community meetings, mobilizing children, and conducting health education activities.

Annexure

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

Indicators	School			<i>Anganwadi</i>		
	D ⁷	N ⁸	%	D	N	%
Attended training for current round of NDD	540	425	78.7	84	60	71.4
Reasons for not attending official training						
Location was too far away	115	8	6.9	24	1	4.17
Did not know the date/timings/venue	115	73	63.5	24	16	66.6
Busy in other official/personal work	115	12	10.4	24	4	16.6
Attended deworming training in the past	115	21	18.3	24	1	4.1
Not necessary	115	6	5.2	24	2	8.33
No incentives/no financial support	115	10	8.7	24	4	16.6
Trained teacher provided training to						
All other teachers	425	215	50.6	NA	NA	NA
Few teachers	425	84	19.8	NA	NA	NA
No (himself/herself only teacher)	425	78	18.4	NA	NA	NA
No, did not train other teachers	425	48	11.3	NA	NA	NA
Awareness about the ways a child can get worm infection	540	453	83.8	84	64	76.1
Different ways a child can get worm infection						
Not using sanitary latrine	453	265	58.5	64	36	56.2
Having unclean surroundings	453	351	77.4	64	45	70.3
Consume vegetables and fruits without washing	453	343	75.7	64	50	78.1
Having uncovered food and drinking dirty water	453	331	73.0	64	50	78.1
Having long and dirty nails	453	327	72.1	64	47	73.4
Moving in bare feet	453	312	68.8	64	41	64.0
Having food without washing hands	453	346	76.3	64	42	65.6
Not washing hands after using toilets	453	318	70.2	64	44	68.7
Awareness about all the possible ways a child can get worm infection⁹	453	153	33.7	64	23	35.9
Perceive that health education should be provided to children	540	271	94.6	74	84	88.1
Knowledge about correct dose of albendazole tablet						
1-2 years of children	NA	NA	NA	84	73	86.9
6-19 years of children	540	534	98.9	84	82	97.6
Awareness about non-administration of albendazole tablet to sick child						
Will give albendazole tablet to the child	540	25	4.6	84	5	5.9

⁷ Denominator for the indicator

⁸ Numerator for the indicator

⁹ 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 not give the albendazole tablet to the child	540	271	50.1	84	43	51.1
Awareness about consuming albendazole tablet						
Chew before swallowing	540	505	93.5	84	82	97.6
Swallow it directly	540	35	6.4	84	2	2.3
Awareness about consuming albendazole in school/<i>anganwadi</i>	540	508	94.0	84	81	96.4
Awareness about the last date for submitting the reporting form	540	189	35.0	84	33	39.2
Aware that completed reporting form should be submitted to ANM	540	353	65.3	84	51	60.7
Awareness to retain a copy of the reporting form post submission	540	477	88.3	84	72	85.7
Source of information about current NDD round						
Television	540	57	10.5	84	8	9.5
Radio	540	52	9.6	84	7	8.3
Newspaper	540	94	17.4	84	14	16.6
Banner	540	99	18.3	84	13	15.4
SMS	540	133	24.6	84	21	25.0
Other school/teacher/ <i>anganwadi</i> worker	540	83	15.3	84	24	28.5
Training	540	305	56.4	84	40	47.6
Receive SMS for current NDD round	540	243	45.0	84	41	48.8

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

Indicators	School			<i>Anganwadi</i>		
	D	N	%	D	N	%
Albendazole tablet administered on the day of visit						
Yes, ongoing	540	218	40.37	84	38	45.24
Yes, already done	540	151	27.96	84	17	20.24
Yes, after sometime	540	87	16.1	84	10	11.90
No, will not administer today	540	84	15.5	84	19	22.62
Schools/ <i>anganwadis</i> conducted deworming on either of the day	540	464	85.9	84	68	80.95
Schools/ <i>anganwadis</i> conducted deworming on NDD ¹⁰	254	223	87.7	54	43	79.63
Schools/ <i>anganwadis</i> conducted deworming on Mop-Up Day ¹¹	286	233	81.4	30	22	73.34
Reasons for not conducting deworming						
No information	84	35	41.6	19	7	36.8
Albendazole tablet not received	84	31	36.9	19	5	26.3
Apprehension of adverse events	84	1	1.1	19	1	5.26

¹⁰Based on the samples visited on National Deworming Day.

¹¹Based on the samples visited on Mop-Up Day.

Already dewormed all children on deworming day ¹²	84	8	9.52	19	3	15.7
Others ¹³	84	9	10.7	19	3	15.7
Anganwadis having list of unregistered/out-of-school children	NA	NA	NA	84	27	32.1
Out-of-school children given albendazole tablet	NA	NA	NA	65	49	75.3
Unregistered children given albendazole tablet	NA	NA	NA	65	50	76.9
Sufficient quantity of albendazole tablet¹⁴	481	408	84.8	70	56	80.0

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

Items	Schools			<i>Anganwadi</i>				
	Received (N=540)	D*	Received in training	Verified	Received (N=84)	D*	Received in training	Verified
Albendazole tablet	89.1 (481)	481	98.8 (475)	98.8 (475)	83.3 (70)	70	100 (70)	98.6 (68)
Poster/banner	75.2 (406)	406	96.6 (392)	97.1 (394)	72.6 (61)	61	98.4 (60)	93.4 (57)
Handouts/reporting form	69.6 (376)	376	95.2 (358)	93.4 (351)	60.7 (51)	51	94.1 (48)	92.2 (47)
Adverse event reporting form	41.6 (225)	225	77.8 (175)	76.4 (172)	33.3 (28)	28	82.1 (23)	89.3 (25)
Received all material	35.4(191)	191	78.0 (149)	75.4 (144)	31.0 (26)	26	80.8 (21)	88.5 (23)
Integrated distribution¹⁵	27.5 (148)			25.0 (21)				

Note: The denominator for item “Received” is 540 for schools and 84 for anganwadis.

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

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

¹²Based on the samples that did not conduct deworming on Mop-Up Day.

¹³Includes headmaster absent and unavailability of albendazole tablets.

¹⁴This indicator is based on the sample that received albendazole tablet.

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

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

Indicators	Schools			<i>Anganwadi</i>		
	D	N	%	D	N	%
Deworming activity was taking place	540	224	41.4	84		35.7
Albendazole tablet were administered by						
Teacher/headmaster	218	211	96.7	NA	NA	NA
<i>Anganwadi</i> worker	218	4	1.83	38	36	94.7
ASHA	218	1	0.46	38	2	5.26
ANM	218	2	0.92	38	0	0.0
Followed any recording protocol	369	315	85.3	55	47	85.4
Protocol followed						
Putting single/double tick	315	245	77.7	47	31	65.9
Put different symbols	315	13	18.1	47	3	27.6
Prepare the separate list for dewormed	315	57	4.1	47	13	6.38
Visibility of poster/banner during NDD/MOP-UP DAY	406	328	80.7	61	42	68.8

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

Indicators	Schools			<i>Anganwadi</i>		
	D	N	%	D	N	%
Opinion of occurrence of an adverse event after taking albendazole tablet	540	190	35	84	25	29.7
Opinion of occurrence of possible adverse events						
Mild abdominal pain	190	140	73.7	25	17	68.0
Nausea	190	115	60.5	25	20	80.0
Vomiting	190	128	67.3	25	17	68.0
Diarrhea	190	62	33.0	25	17	68.0
Fatigue	190	53	28.0	25	11	44.0
All possible adverse event ¹⁶	540	33	6.1	84	10	11.90
Awareness about mild adverse event management						
Make the child lie down in open and shade/shaded place	540	449	83.1	84	56	66.7
Give ORS/water	540	235	43.5	84	39	46.4
Observe the child at least for 2 hours in the school	540	178	33.0	84	26	31.0
Don't know/don't remember	540	47	8.7	84	16	19.0
Awareness about sever adverse event management						
Call PHC or emergency number	540	412	76.3	84	58	69.0
Take the child to the hospital /call doctor to school	540	270	50.0	84	42	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.

Don't know/don't remember	540	26	4.8	84	11	13.1
Occurrence of cases of any adverse event	369	40	10.8	55	6	10.9
Available contact numbers of the nearest ANM or MO-PHC	540	414	76.7	84	73	86.9

Table CV1: Findings from School Coverage Validation Data

Indicators¹⁷	D	N	%
18Conducted deworming¹⁹	1,680	1,504	89.5
Day of albendazole administration²⁰			
National Deworming Day	1,503	1,388	92.4
Mop-Up Day	1,503	1,123	74.7
Between NDD and Mop-Up Day	1,503	147	9.8
Reasons for not conducting deworming			
No information	177	94	53.4
Drugs not received	177	72	40.4
Apprehension of adverse events	177	9	5.1
Others	177	2	1.1
Albendazole left after deworming	1,503	592	39.4
Number of albendazole left			
Less than 50 tablets	591	535	90.6
50-100 tablets	591	45	7.6
More than 100 tablets	591	11	1.8
Copy of reporting form was available	1,503	774	51.5
Reasons for non-availability of copy of reporting form			
Did not received	728	280	38.5
Submitted to ANM	728	281	38.5
Unable to locate	728	72	9.9
Others	728	96	13.1
Reported cases of adverse event	1,503	42	2.8

¹⁷ Weighted percentage and numbers are presented against each indicator in all the coverage validation tables. In some indicators denominators may vary because of this.

¹⁸ Schools that conducted deworming on during NDD or Mop-Up Day.

¹⁸ Total percentage may add to more than 100 as multiple responses are allowed.

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

Indicators	D	N	%
Followed correct ²¹ recording protocol	1,503	744	49.5
Followed partial ²² recording protocol	1,503	150	10
Followed no ²³ recording protocol	1,503	609	40.5
State level verification factor ²⁴	69,139	39,123	0.57
State inflation rate ²⁵	39,123	30,016	76.7
Attendance on pre-NDD ²⁶	1,40,476	94,506	67.3
Attendance on NDD	1,40,476	94,537	67.3
Attendance on Mop-Up Day	1,40,476	92,617	65.9
Children who attended on both NDD and Mop-Up Day	1,40,476	71876	51.2
Maximum attendance of children on Deworming Day and Mop-Up Day	1,40,476	1,15,278	82.1
School level inflation rate for schools that followed the correct recording protocol	39,083	6,429	17
Estimated NDD coverage ²⁷	47%-67%		

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

Indicators	D	N	%
Children received deworming tablets	4509	4,334	96.1
Children consumed deworming tablet	4334	4,271	98.6
Children aware about the deworming tablets	4334	4,014	92.6
Source of information for deworming			
Teacher / school	4022	3,860	96.0
Television	4022	322	8.0
Radio	4022		

²¹ 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

²² 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

²³ No protocol includes all those schools where none of the classes followed any protocol to record the information of dewormed children

²⁴ Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=776) where deworming was conducted and copy of reporting form was available for verification

²⁵ Proportion of over reported dewormed children against total verified children in schools

²⁶ This is attendance of previous day of NDD.

²⁷ 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

Newspaper	4022	337	8.4
Poster/Banner	4022	517	12.9
Parents/siblings	4022	135	3.3
Friends / neighbors	4022	72	1.8
Way children consumed the deworming tablet			
-Chewed tablet before swallowing	4271	3,980	93.2
-Swallowed tablet directly	4271	291	6.8
Supervised administration of deworming tablets	4271	4,072	95.3

Note: Three children were interviewed from all those schools (1503) who reported to observe deworming during NDD and Mop-Up Day out of total 1680 schools visited during coverage validation