Evidence Action

Deworm the World Initiative

Independent Monitoring of National Deworming Day in Karnataka February, 2018

REPORT

May 2018

Background

During every round of National Deworming Day (NDD), Evidence Action conducts independent monitoring, which includes process monitoring on NDD and mop-up day and a coverage validation exercise post-NDD. This is conducted through an independent survey agencies, to assess the planning, implementation and quality of NDD program implementation with an objective of identifying gaps and suggesting recommendations for improvements in future NDD rounds. Process monitoring is conducted to understand the individual state government's preparedness for NDD and adherence to the program's prescribed processes; coverage validation is an ex-post check of the accuracy of the reporting data and coverage estimates to verify government-reported treatment figures.

Karnataka observed the February 2018 round of NDD on February 12; followed by mop-up day on February 17. Fieldwork for coverage validation was conducted during February 21 - 28.

This extract is a summary of the broad findings from the state of Karnataka.

Survey Methodology

Using a two-stage probability sampling procedure, across 30 districts Evidence Action selected a total of 245 schools (162 government schools and 83 private schools) and 244 *anganwadi*s for process monitoring visits during NDD and mop-up days; 610 schools (468 government schools and 142 private schools) and 605 *anganwadi*s for coverage validation. Through a competitive review process, Evidence Action hired an independent survey agency to conduct process monitoring and coverage validation. Evidence Action had designed and finalized survey tools with approvals from Karnataka's state government. One combined tool was used for process monitoring at schools and *anganwadi*s on NDD and mop-up day, and one each for schools and *anganwadi*s for coverage validation.

Implementation

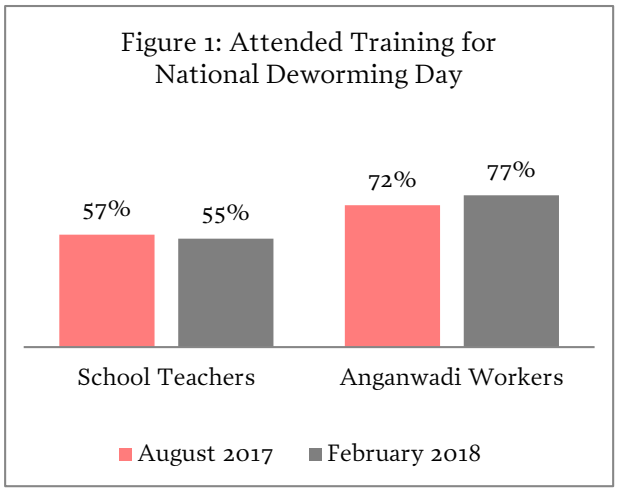
Prior to the survey, Evidence Action conducted a comprehensive training of master trainers who further conducted a three-day training of 125 surveyors and 25 supervisors. The training included an orientation on NDD, the importance of independent monitoring, details of the monitoring formats including CAPI practices, survey protocols and practical sessions. Each surveyor was allotted one school and one *anganwadi* for process monitoring on NDD and mop-up day, and subsequently five schools and five *anganwadi*s for coverage validation. Surveyors were provided with a tablet computer having latest CAPI version downloaded, battery charger, printed copy of monitoring formats as backup, and albendazole tablets for demonstration during data collection. The details of sampled schools were shared with surveyors one day before the commencement of fieldwork to ensure that surveyors did not contact schools and *anganwadi*s in advance.

Appropriate quality assurance measures were taken to ensure that the data collected was accurate, consistent and authenticated. For example, teachers and *anganwadi* workers (AWWs_ were asked to sign a participation form with an official stamp to authenticate surveyor visits to school or *anganwadi*s. Further, surveyors captured the photographs of all schools and *anganwadis* covered during data collection and this was built in to the CAPI

software itself to authenticate the location of the interview. Evidence Action reviewed all data sets and shared feedback with the agency for any inconsistencies observed and ensured timely corrective actions. All analysis was performed using STATA and Microsoft Excel.

Key Findings

Training



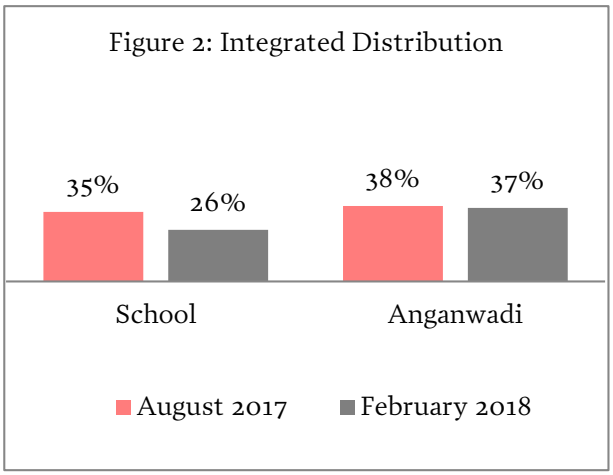
Prior to each NDD round, teachers and *anganwadi* workers are trained on NDD related processes and protocols to facilitate effective program implementation. Figure-1 reveals that 55% of teachers and 77% of AWWs visited by the surveyors had attended training for the February 2018 NDD round. While all teachers and AWWs are mandated to attend training for every round of NDD, irrespective of whether they had attended training in earlier rounds, training attendance among teachers remains roughly the same and increased slightly by five percentage points among AWWs compared to the August 2017 round. The attendance of private schools in trainings remained low and it declined slightly from 43% in August 2017 to 40% in February 2018.

Among those who did not attend training, 51% of teachers and 39% of the *anganwadi* workers reported a lack of information about NDD training as the main reason for not attending. Fifty-five percent of teachers had provided training to all other teachers at their school, which is an increase of five percentage points since the August 2017 round. Forty-seven percent of teachers and only 30% of the *anganwadi* workers had reported to have received a SMS about NDD. Among private schools; the percentage of private school teachers who received a SMS about NDD declined from 83% (N-22) in the previous round to 31% (N-83) in February 2018. Absence of an updated database of mobile numbers is largely responsible for the sub-optimal delivery of SMS to teachers and *anganwadi* workers in the February 2018 NDD round.

Integrated Distribution of NDD Kit at Trainings

The integrated distribution of NDD kits remains low during the February 2018 NDD round for both schools (26%) and *anganwadis* (37%) and no improvements were seen compared to the previous round (Figure2). Deworming tablets were received by 78% of schools and 93% of *anganwadis*, while posters and banners were received by 54% of schools and 74% of *anganwadis* (Annex-Table PM4). Receipt of sufficient quantities of tablets was reported by 89% of schools and 89% of *anganwadis* (Annex-Table PM3). Handout forms and reporting forms were received by 50% of schools and 63% of AWWs. Despite the low level of integrated distribution, NDD materials were delivered to the majority of schools and *anganwadis*--indicating that other distribution channels were adopted, which might have led additional cost burden and efforts in the distribution of these materials.

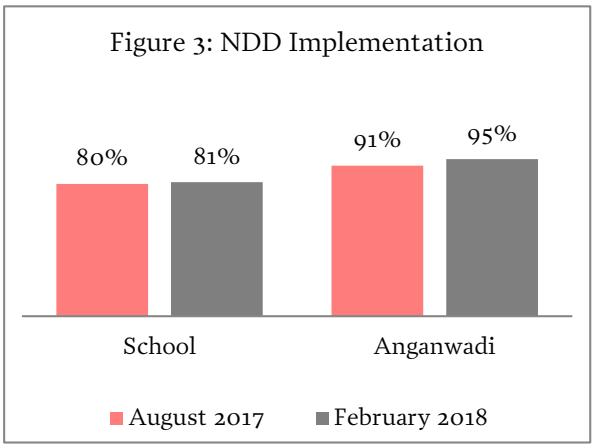
Among the sampled private schools, 62% received deworming tablets and 88% among them reported having received sufficient quantities. Around 38% of private schools received posters/banners and 25% reported having received handouts and reporting forms (Annex-Table PM7).



Source of Information about the Recent Round of NDD

Information received through training was the major source about the NDD reported by 37% of schools and 46% of *anganwadis*. Newspaper was the second most reported source of information in schools (36%) whereas it was through banners in the *anganwadis* (36%). Information received through *Gram Pradhan* remained the least effective in schools as well as in *anganwadis* (9% in each) (Annex-Table PM1).

NDD Implementation



A high percentage of schools and *anganwadis* conducted deworming on NDD in February 2018 (Figure 3). Among the schools in which deworming treatment was ongoing, surveyors were able to directly witness deworming activities taking place in 39% of schools and 37% of *anganwadis* during process monitoring (Annex – Table PM5). During coverage validation, it was observed that 81% of children in schools and 95% of children in *anganwadis* were dewormed on NDD in February 2018 (Annex – Table CV1). Treatment of unregistered (86%) and out-of-school children (79%) has improved by 24 percentage points and 28 percentage points respectively in comparison to the August 2017 round. Seventy-three percent of *anganwadi* workers reported that ASHAs were present at the *anganwadi center* on NDD or mop-up day.

Adverse Event – Knowledge Management

Interviews with headmasters/teachers reveal that 44% of schools and 47% of *anganwadis* were aware of adverse events during the administration of deworming tablets. A considerable knowledge gap was observed on appropriate protocols to follow in the case of such events. In schools, vomiting was reported as a known adverse event by 56% of headmasters whereas 64% was reported by *AWWs.* This was followed by mild abdominal pain as a known adverse event (as reported by 53% of headmasters/teachers and 55% of AWWs). About 57% of teachers and 62% of *anganwadi* workers knew that they had to make a child lie down in an open and shady place in case of an adverse event. Representatives from 42% of schools and 40% of *anganwadi*s had further recalled that

during adverse events a child should be kept under observation for at least two hours in school/*anganwadi* premises. (Annex – Table PM6).

Recording Protocol

The coverage validation data from February 2018 round of NDD shows that the correct recording protocol of single tick for those dewormed on NDD and double tick for those dewormed on mop-up day was followed only by 30% of schools and 35% of *anganwadis*. Partial recording protocol was followed by 14% of schools and 22% of *anganwadis*. Fifty-six percent of schools and 44% of *anganwadis* did not follow any protocol to record the deworming activity (Annex – Table CV3).

NDD guidelines require that a copy of the reporting form be retained by the teachers and *anganwadi* workers. Although 67% of headmasters and 74% of AWWs were aware of having to retain the reporting form, (Annex – Table PM2) during coverage validation it was observed that only 45% of schools and 35% of *anganwadis* had retained the copy of reporting forms (Annex – Table CV1).

Accredited Social Health Activists (ASHAs) are required to prepare a list of out-of-school children and children not registered in *anganwadis* and submit it to *anganwadis* workers. However, out of the ASHA workers present at *anganwadi* centres during coverage validation (65%), it was reported that a list of unregistered children was prepared by only 47% of ASHAs. Eighty-percent of ASHA workers who prepared lists reported having shared the list with *anganwadis* (Annex – Table CV2 & CV1). As observed during coverage validation, lists of unregistered children (aged 1 – 5 years) and out-of-school children (aged 6 – 19 years) were available in 54% of schools and 36% of *anganwadis* respectively(Annex – Table CV1). Based on interviews of ASHA workers at the *anganwadi* centres, it was reported that 88% conducted meeting with parents to inform them about the NDD program. Only nine percent of ASHA workers reported having received any incentive for the August 2017 round of NDD (Annex – Table CV2).

Coverage Validation

Coverage validation provides an opportunity to assess the accuracy of reported data and verify government-reported treatment figures. Verification factors[1] are common indicators to measure the accuracy of reported treatment values of neglected tropical disease control programmes[2]. Coverage validation also gives us an idea about record keeping and data management at the service delivery point. The verification factor also gives us an idea about record keeping and data management at the service delivery point. Based on availability of a copy of reporting forms, verification factor was estimated. The state level verification factor for schools was 0.39 and that for *anganwadis* it was 0.87. This indicated that for every 100 children dewormed as reported in reporting forms, 39 were verified in schools and 87 were verified in *anganwadis* through documentations available. For children

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

[2]WHO (2013) data quality assessment tool for Neglected Tropical Disease: Guidelines for implementation December 2013

registered in *anganwadis*, verification factor was found to be 1.06 and that for children unregistered (1 – 5 years) it was 0.81 and that for out-of-schools (6 – 19 years) it was 0.46. At the school level, there was a clear lack of proper recording process and records management. However, *anganwadis* had a better recording and reporting process compared to the schools based on the data observed from the verification process.

Despite the challenges faced in appropriate recording and reporting processes, coverage validation data showed that 81% of schools and 95% of *anganwadis* conducted deworming on NDD. (Annex – Table CV1). Of the children interviewed during coverage validation, 92% of children received deworming tablet and all of them reported to consume the tablet and of these, 92% of children were supervised during the administration of the tablet (Annex – Table CV4). Against the state government reported 96% coverage in schools and 92% coverage for 1-5 years registered children in *anganwadis*, attempts were made to understand the maximum number of children that could have been dewormed in the schools and *anganwadis* through coverage validation data.

Coverage validation data showed that 81% of schools conducted deworming on either NDD or mop-up day (Annex-Table CV1), a maximum of 93% of children were in attendance (Annex-Table CV3), 92% of children received an albendazole tablet, and 92% of children reported to consume the tablet under supervision (Annex-Table CV4). Considering these factors, 64%[3] (0.81*0.93*0.92*0.92) of enrolled children could have been dewormed in the schools (Annex – Table CV3). Since interviews of children are not conducted in *anganwadis*, the verification factor of 1-5 years registered children from coverage validation data is applied to government reported coverage data for the same category. It was estimated that around 98% (1.06*0.87) children could have been dewormed in the *anganwadis*. As the verification factor is calculated based on availability of reporting forms in schools and *anganwadis*, the adjusted value for coverage should be interpreted with caution.

Recommendations

1. The following are the key recommendation for program improvements that emerged from the process monitoring and coverage validation exercise: Training participation of teachers and AWWs did not improve from the August 2017 round. The overall training attendance of teachers was relatively low due to less participation of private schools in training (Government schools= 63% vs. Private schools = 40%). Additional efforts need to be made to improve training participation among private school teachers to ensure high training attendance in upcoming rounds. The participation of the teachers in NDD trainings irrespective of government and private schools, and AWWs need to be leveraged in the next round of NDD to ensure successful implementation of a high quality NDD program.

[3] This was estimated on the basis of NDD implementation status (81%), maximum attendance on NDD and mop-up day (93%), children received albendazole (93%) and supervised drug administration (92%). In absence of children interview in Anganwadis, the government reported coverage was adjusted by implying state level verification factor.

2. Integrated distribution is very low and declined slightly from the August 2017 to the February 2018 in schools. It also remained low in *anganwadis.* This may be attributed to delayed distribution of drugs at the PHC level and delayed printing of IEC and training materials at state. Adherence to timelines as per the operational plan is crucial for the availability of NDD kits prior to trainings and achieving a high level of integrated distribution.

3. The percentage of headmasters/teachers and AWWs that received deworming related SMS continues to be low. Efforts are required to update the contact database for both schools and *anganwadi*. SMS reach to all functionaries will facilitate comprehensive, effective and timely dissemination of information pertaining to NDD.

4. There is scope for greater involvement of ASHAs in mobilizing out-of-school children and pre-school children not registered in *anganwadis* and spreading awareness on deworming benefits. Efforts are required to increase ASHA participation and engage them to prepare lists of 1-5 years unregistered and out-of-school children in their communities. ASHA participation could be further strengthened by highlighting the role of ASHAs in the joint directives, encouraging their participation in training sessions, community mobilization, and sending reminder SMSs to them including information on incentives.

5. Adherence to correct recording protocols in schools and *anganwadis* are at low level. Greater emphasis on recording protocols can improve the quality of data management and documentation in subsequent rounds. Special attention on recording protocols needs to be given during PHC level trainings.

6. No improvement was observed in the percentage of schools that conducted deworming and had maximum attendance in the February 2018 NDD round compared to the August 2017 NDD round. The percentage of children that received deworming tablets declined and led to the further decline in overall NDD coverage among school-enrolled children in the state. Emphasis should be given to maintain a high level of school attendance on NDD days to achieve high NDD coverage in the state.

Annexure

Table PM 1: Training and source of information about NDD among teachers/headmasters and *anganwadi* workers, February2018

Indicators	School			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
Attended training for current round of NDD	135	245	55	187	244	77
Ever attended training for NDD[4]	140	245	57	188	244	77
Never attended training for NDD	105	245	42	56	244	23
Reasons for not attending NDD training (Multiple Response)						
Location was too far away	23	110	21	16	57	28
Did not know the date/timings/venue	56	110	51	22	57	39
Busy in other official/personal work	9	110	8	6	57	11
Attended deworming training in the past	5	110	4	1	57	2
Not necessary/ Do not feel the need	19	110	17	3	57	5
No incentives/no financial support	4	110	3	0	57	0
Trained teacher that provided training to other teachers in their schools						
All other teachers	74	135	55	NA	NA	NA
Few teachers	34	135	25	NA	NA	NA
No (himself/herself only teacher)	8	135	6	NA	NA	NA

[4] Includes those school teachers and *anganwadi* workers who attended training either for NDD February2018 or attended tanning in past.

Indicators	School			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
No, did not train other teachers	19	135	14	NA	NA	NA
Source of information about current NDD round (Multiple Response)						
Television	76	245	31	77	244	32
Radio	38	245	16	30	244	12
Newspaper	87	245	36	62	244	25
Banner	60	245	24	87	244	36
SMS	70	245	29	52	244	21
Other school/teacher/*anganwadi* worker	69	245	28	71	244	29
WhatsApp message	45	245	19	21	244	9
Training	91	245	37	113	244	46
Gram pradhan/ PRI	22	245	9	22	244	9
Others	18	245	7	30	244	12
Received SMS for current NDD round	115	245	47	74	244	30
Probable reasons for not receiving SMSs						
Changed Mobile number	34	130	26	39	170	23
Other family members use this number	12	130	9	12	170	7
Number not registered to receive such messages	65	130	50	102	170	60
Don't know	19	130	15	17	170	10

Table PM 2: Awareness about NDD among teachers/headmasters and *anganwadi* workers, February2018

Indicators	School			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
Awareness about the ways a child can get worm infection	204	245	83	223	244	91
Different ways a child can get worm infection (Multiple Response)						
Not using sanitary latrine	118	204	58	111	223	50
Having unclean surroundings	135	204	67	152	223	68
Consume vegetables and fruits without washing	111	204	55	129	223	58
Having uncovered food and drinking dirty water	136	204	67	129	223	58
Having long and dirty nails	84	204	41	99	223	44
Moving in bare feet	112	204	55	145	223	65
Having food without washing hands	130	204	64	142	223	64
Not washing hands after using toilets	107	204	53	124	223	56
Awareness about all the possible ways a child can get a worm infection[5]	32	204	16	28	223	13
Perceives that health education	194	245	79	199	244	82

[5]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.

should be provided to children						
Awareness about correct dose and right way of administration of albendazole tablet						
1-2 years of children (Crush the half tablet between two spoons and administer with water)	NA	NA	NA	175	244	72
2-3 years of children (Crush one full tablet between two spoons, and administer with water)	NA	NA	NA	87	244	36
3-5 years of children (one full tablet and child chewed the tablet properly)	NA	NA	NA	195	244	80
6-19 years of children (one full tablet and child chewed the tablet properly)	230	244	94	234	244	96
Awareness about non-administration of albendazole tablet to sick child						
Will administer albendazole tablet to sick child	27	245	11	32	244	13
Will not administer albendazole tablet to sick child	218	245	89	212	244	87
Awareness about consuming albendazole tablet						
Chew the tablet	220	245	90	229	244	94
Swallow the tablet directly	25	245	10	15	244	6
Awareness about consuming albendazole in school/*anganwadi*	228	245	93	236	244	97

Awareness about the last date (February 22, 2018) for submitting the reporting form	130	245	53	155	244	64
Awareness about submission of reporting forms to ANM by February 22, 2018	103	245	42	120	244	49
Awareness to retain a copy of the reporting form	163	245	67	181	244	74

Table PM 3: Deworming activity, drug availability, and list of unregistered and out-of-school children, February2018

Indicators	School			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
Albendazole tablet administered on the day of visit						
Yes, ongoing	93	245	38	82	244	34
Yes, already done	73	245	30	102	244	42
Yes, after sometime	18	245	8	30	244	12
No, will not administer today	61	245	25	30	244	12
Schools/*anganwadis* conducted deworming on either of the day[6]	187	245	76	223	244	91
Schools/*anganwadis* conducted deworming on NDD[7]	104	133	78	111	124	90
Schools/*anganwadis* conducted deworming on Mop-Up Day[8]	83	112	74	112	120	93
Reasons for not conducting deworming						

[6]Schools/*anganwadis* administered albendazole tablet to children either on NDD or Mop-Up Day
[7]Based on the samples visited on NDD.
[8]Based on the samples visited on Mop-Up Day only.

No information	46	58	80	11	21	52
Albendazole tablet not received	12	58	20	6	21	29
Apprehension of adverse events	0	-	-	4	21	19
Attendance on NDD[9]	21674	26036	83	NA	NA	NA
Attendance on Mop-Up Day[10]	23013	27842	83	NA	NA	NA
Anganwadis having list of unregistered/out-of-school children	NA	NA	NA	157	244	64
Out-of-school children (Age 6-19 years) administered albendazole tablet	NA	NA	NA	193	244	79
Unregistered children (Age 1-5 years) administered albendazole tablet	NA	NA	NA	209	244	86
Sufficient quantity of albendazole tablets[11]	170	191	89	202	226	89

Table PM 4: Integrated distribution of albendazole tablets and IEC materials, February2018

Indicators	Schools			*Anganwadi*		
	Numerator	Denominator	%	Numerator	Denominator	%
Items received by school teacher and anganwadi worker						
Albendazole tablet	191	245	78	226	244	93
Poster/banner	133	245	54	181	244	74
Handouts/ reporting form	122	245	50	154	244	63
Received all materials	99	245	41	132	244	54
Items verified during Independent Monitoring						
Albendazole tablet	182	191	95	217	226	96
Poster/banner	128	133	96	177	181	98

[9]Based on those schools conducted deworming on NDD
[10]Based on those schools conducted deworming on Mop-Up-Day
[11] This indicator is based on the sample that received albendazole tablet.

Handouts/ reporting form	111	122	91	142	154	92
Received all materials	90	99	91	119	132	90
No of school teachers/*anganwadi* worker attended training and received items during training						
Albendazole tablet	111	132	84	144	180	80
Poster/banner	85	94	90	123	147	84
Handouts/ reporting form	90	98	92	113	133	85
Received all materials	68	79	86	93	115	81
Integrated Distribution of albendazole tablet IEC and training materials[12]	65	245	26	89	244	37

Table PM 5: Implementation of deworming activity and observation of surveyors, February2018

Indicators	Schools			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
Deworming activity was taking place	36	93	39	30	82	37
Albendazole tablets were administered by						
Teacher/ headmaster	83	93	90	14	82	17
Anganwadi worker	1	93	1	53	82	65
ASHA	3	93	3	6	82	7
ANM	6	93	7	9	82	11
Student	0	-	-	0	-	
Teacher/Anganwadi worker asked children to chew the tablet	90	93	97	77	82	94

[12] Integrated distribution of NDD kits includes albendazole, banner/poster and handout/reporting forms and provided to schools and AWC during the trainings.

Followed any recording protocol[13]	116	165	70	130	184	71
Protocol followed						
Putting single/double tick	65	116	57	71	130	55
Put different symbols	24	116	20.3	23	130	17.7
Prepare the separate list for dewormed	27	116	23.1	36	130	27.7
Visibility of poster/banner during visits	104	133	78	158	181	87

Table PM 6: Awareness about Adverse events and Its Management, February2018

Indicators	Schools			Anganwadi		
	Numerator	Denominator	%	Numerator	Denominator	%
Opinion of occurrence of an adverse event after administering albendazole tablet	108	245	44	114	244	47
Awareness about possible adverse events (Multiple Response)						
Mild abdominal pain	57	108	53	63	114	55
Nausea	53	108	49	54	114	47
Vomiting	61	108	56	73	114	64
Diarrhea	22	108	20	34	114	30
Fatigue	38	108	35	49	114	43
All possible adverse event[14]	9	108	9	17	114	15
Awareness about mild adverse event management						

[13]Any recording protocol implies putting single tick (✓), double tick (✓✓), any other symbol or preparing separate list for all those children administered albendazole tablets on NDD or Mop-Up Day.

[14]Includes those who are aware that a mild abdominal pain and nausea and vomiting and diarrhea and fatigue can be reported by a child after taking albendazole tablet.

Make the child lie down in open and shade/shaded place	138	245	57	152	244	62
Give ORS/water	130	245	53	149	244	61
Observe the child at least for 2 hours in the school	104	245	42	97	244	40
Don't know/don't remember	46	245	19	37	244	15
Awareness about severe adverse event management						
Call PHC or emergency number	124	245	51	126	244	52
Take the child to the hospital /call doctor to school	172	245	70	188	244	77
Don't know/don't remember	26	245	11	13	244	5
Available contact numbers of the nearest ANM or MO-PHC	211	245	86	229	244	94
Asha present in Anganwadi center	NA	NA	NA	177	244	73

Table PM 7: Selected Indicators of Process Monitoring in Private Schools, February2018

Indicators[15]	Numerator	Denominator	%
Attended training for current round of NDD	33	83	40
Received albendazole tablets	51	83	62
Sufficient quantity of albendazole tablets	45	51	88
Received poster/banner	32	83	38
Received handouts/ reporting form	21	83	25
Received SMS for current NDD round	25	83	31

[15]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

Conducted deworming	49	83	59
Reasons for not conducting deworming			
No information	29	36	81
Albendazole tablets not received	5	36	15
Albendazole tablet administered to children by teacher/headmaster[16]	23	23	100
Perceive that health education should be provided to children	61	83	74
Awareness about correct dose and right way of albendazole administration	76	83	92
Awareness about non-administration of albendazole tablet to sick child	75	83	91
Opinion of occurrence of an adverse event after taking albendazole tablet	41	83	49
Awareness about occurrence of possible adverse events			
Mild abdominal pain	17	41	42
Nausea	19	41	47
Vomiting	21	41	51
Diarrhea	6	41	14
Fatigue	6	41	15
Awareness about mild adverse event management			
Let the child rest in an open and shaded place	39	83	47
Provide clean water to drink/ORS	37	83	45
Contact the ANM/nearby PHC	33	83	40
Available contact numbers of the nearest ANM or MO-PHC	69	83	83
Followed correct[17] recording protocol	25	41	60

[16]This indicator is based on samples where deworming was ongoing.
[17]Correct recording protocol implies putting single tick (✓) on NDD and double tick (✓✓) for all those children administered albendazole tablets.

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

Sr.No.	Indicators	Schools			*Anganwadis*		
		Denominator	Numerator	%	Denominator	Numerator	%
1	Percentage of schools/*anganwadis* conducted deworming[18]	610	496	81	605	576	95
	Percentage of government schools conducted deworming	407	363	89	Not Applicable		
	Percentage of private schools conducted deworming	203	134	66	Not Applicable		
1a	Percentage of school and *anganwadis* administered albendazole on day of - **(Multiple Response)**						
	a. National Deworming Day	496	414	83	605	492	86
	b. Mop-up day	496	227	46	605	253	44
	c. Between NDD and mop-up day	496	80	16	605	93	16
	d. Both days (NDD and mop-up day)	496	198	40	605	235	41
1b	Reasons for not conducting deworming						
	a. No information	114	87	76	29	17	58

[18]Schools and *anganwadis* that conducted deworming on NDD or mop-up day.

	b. Drugs not received	114	18	16	29	8	28
	c. Apprehension of adverse events	114	9	8	29	4	14
	d. Other	114	0	0	29	0	0
2	Percentage of schools and *anganwadis* left over with albendazole tablet after deworming	496	215	43	576	290	50
2a	Number of albendazole tablets left after deworming						
	a. Less than 50 tablets	215	190	89	290	228	79
	b. 50-100 tablets	215	12	6	290	44	15
	c. More than 100 tablets	215	12	6	290	19	7
3	Copy of reporting form was available for verification	496	221	45	576	201	35
	Copy of filled-in reporting form was available for verification in Government school	363	173	48	Not Applicable		
	Copy of filled-in reporting form was available for verification in Private school	134	47	36	Not Applicable		
3a	Reasons for non-availability of copy of reporting form[19]						

[19] In 23 schools and 28 *anganwadis* blank reporting form was available.

	a. Did not received	253	112	44	347	117	34
	b. Submitted to ANM	253	98	39	347	181	52
	c. Unable to locate	253	43	17	347	49	14
	d. Others	253	0	0	347	0	0
4	Percentage of *Anganwadi* center where ASHA administered albendazole	Not Applicable			576	372	65
5	*Anganwadis* having list of unregistered children (aged 1-5 years)	Not Applicable			576	309	54
6	*Anganwadis* having list of out-of-school children (aged 6-19 years)	Not Applicable			576	209	36

Table CV2: Selected indicators based on ASHA's interview at *Anganwadi* Centre, Coverage Validation Data

Sr. No.	Indicators	*Anganwadis*		
		Denominator	Numerator	%
1	ASHA[20] conducted meetings with parents to inform about NDD	379	332	88
2	ASHA prepared list of unregistered and out-of-school children	379	179	47

[20] Surveyors were instructed to call ASHA at *anganwadi* centers during coverage validation and collect relevant information. Surveyors could only cover those ASHA's who were able to join for interview because it was not mandatory for ASHA's to attend.

3	ASHA shared the list of unregistered and out-of-school children with *angnawadis* teacher[21]	179	143	80
4	ASHA administered albendazole to children	379	370	98
5	ASHA received incentive for NDD Feb 2017 round	379	32	9

Table CV3: Recording protocol, verification factor, inflation and schools attendance in schools and *anganwadis*

Sr.No.	Indicators	Schools/Children			Anganwadis/Children		
		Denominator	Numerator	%	Denominator	Numerator	%
1	Followed correct[22] recording protocol	493	145	30	576	199	35
2	Followed partial[23] recording protocol	493	71	14	576	124	22
3	Followed no[24] recording protocol	493	277	56	576	253	44
	Followed correct recording protocol in government school	360	118	33	Not Applicable		
	Followed correct recording protocol in private school	134	27	21	Not Applicable		

[21] Based on sub-sample who reported to prepare the said list.
[22]Correct recording protocol includes schools/anganwadis where all the classes/registers put single tick (✓) on NDD and double tick (✓✓) on mop-up day to record the information of dewormed children.
[23]Partial recording protocol includes schools/*anganwadis* where all the classes/registers did not follow correct protocol, put different symbols and prepared separate list to record the information of dewormed children.
[24]No protocol includes all those schools/*anganwadis* where none of the classes/registers followed any protocol to record the information of dewormed children.

4	State-level verification factor[25] (children enrolled/registered)	33,809	13,270	39	21,103	17,095	87
	a. Children registered with *anganwadis*	Not Applicable			8,626	9,171	106
	b. Children unregistered with *anganwadis*(Aged 1-5)	Not Applicable			6,308	5,117	81
	c. Out-of-school children (Aged 6-19)	Not Applicable			6,169	2,808	46
5	Attendance on previous day of NDD (Children enrolled)	109,534	96,443	88	Not Applicable		
6	Attendance on NDD (Children enrolled)	109,534	96,136	88	Not Applicable		
7	Attendance on mop-up day (Children enrolled)	109,534	88,257	81	Not Applicable		
8	Children who attended on both NDD and mop-up day (Children enrolled)	109,534	82,276	75	Not Applicable		
9	Maximum attendance of children on NDD	109,534	102,117	93	Not Applicable		

[25]Ratio of recounted value of the dewormed children to the reported value. This calculation is based on only those schools (n=221) and *anganwadis* (n=201) where deworming was conducted and copy of reporting form was available for verification.

	and mop-up day[26] (Children enrolled)				
10	Estimated NDD coverage[27],[28]	64			98
	Estimated NDD coverage in government school	73			Not Applicable
	Estimated NDD coverage in private school	49			Not Applicable

Table CV4: Description on children (6-19 years) interviewed in the schools (n=496) during coverage validation

Sr.No.	Indicators	Denominator	Numerator	%
1	Children received albendazole tablets	1,489	1,371	92
2	Children aware about the albendazole tablets	1,371	1,173	86
	Source of information about deworming among children (Multiple response)			
3	a. Teacher/school	1,173	1,150	98
	b. Television	1,173	131	11
	c. Radio	1,173	78	7
	d. Newspaper	1,173	144	12
	e. Poster/Banner	1,173	215	18
	f. Parents/siblings	1,173	73	6
	g. Friends/neighbors	1,173	56	5
4	Children aware about the worm infection	1,173	968	83

[26]Maximum attendance refers to the total attendance of children who were exclusively present in school either on NDD or mop-up day and children who attended school on both days.
[27] This was estimated on the basis of NDD implementation status, attendance on NDD and mop-up day, whether child received albendazole and its supervised administration. Since no child interview is conducted at *anganwadis*; this has not been estimated for *anganwadis.*
[28]This was estimated by implying state-level verification factor on government reported coverage for 1-5 years registered children in AWC.

5	Children awareness about different ways a child can get worm infection (Multiple response)			
	a. Not using sanitary latrine	968	602	62
	b. Having unclean surroundings	968	513	53
	c. Consume vegetables and fruits without washing	968	524	54
	d. Having uncovered food and drinking dirty water	968	436	45
	e. Having long and dirty nails	968	397	41
	f. Moving in bare feet	968	440	46
	g. Having food without washing hands	968	488	50
	h. Not washing hands after using toilets	968	323	33
6	Children consumed albendazole tablet	1,371	1,368	100
7	Way children consumed the tablet			
	a. Chew the tablet	1,368	1,262	92
	b. Swallow tablet directly	1,368	106	8
8	Supervised administration of tablets	1,368	1,262	92
9	Reasons for not consuming albendazole tablet			
	a. Feeling sick	3	2	73
	b. Afraid of taking the tablet	3	1	27
	c. Parents told me not to have it	3	0	0
	d. Do not have worms so don't need it	3	0	0
	e. Did not like the taste	3	0	0