Bihar
National Deworming Day
February 2017

CONTENTS

Acronyms

ANM: Auxiliary Nurse Midwife
AWC: *Anganwadi* Centre
AWW: *Anganwadi* Worker
BEPC: Bihar Education Project Council
CIFF: Children Investment Fund Foundation
GoI: Government of India
IEC: Information, Education and Communication
IVR: Interactive Voice Response
MDM: Mid Day Meal scheme
NDD: National Deworming Day
RBSK: *Rashtriya Bal Swasthya Karyakarm*
SHSB: State Health Society Bihar
WCD: Women and Child Development
WHO: World Health Organization

Executive Summary

Contributing to the Government of India's (GoI) National Deworming Day (NDD), the state of Bihar implemented round six of the deworming program, now called as NDD on February 10, followed by mop-up day on February 15, 2017. In this round, the state dewormed 4,32,74,297 children in the age group of 1-19 years. This achievement is an outcome of exemplary leadership from the State Health Society Bihar (SHSB) in coordination with Bihar Education Project Council (BEPC), and Women and Child Development (WCD). Evidence Action provided key technical assistance for program planning, implementation and monitoring through funding support received from the Children Investment Fund Foundation (CIFF) and Dubai Cares.

Table 1: Key Achievements of National Deworming Day February 2017

Indicators		Census	Program target	Target- as per coverage report**	Coverage**
Total number of districts implemented NDD		38	38	38	38
Total number of blocks implemented NDD		534	534	534	534
Number of government and government-aided schools reporting coverage		80,310	80,310	75,348	74,427
Number of private school reporting coverage		3,926	3,926	5,684	4,702
Number of *anganwadis* reporting coverage		91,601	91,601	87,764	86,007
Number of enrolled children (classes 1-12) who were administered albendazole on NDD and mop- up day	Government Schools	28,358,424*	28,358,424	2,60,89,888	24,497,300
	Private Schools			22,86,388	20,53,672
Number of registered children dewormed (1 to 5 years) at *anganwadis* on NDD and mop- up day		1,55,38,479	1,55,38,479	81,06,096	73,84,664
Number of unregistered children dewormed (1 to 5 years) at *anganwadis* on NDD and mop- up day				68,59,745	58,89,379
Number of out-of-school children (6-19 years) dewormed on NDD and mop- up day		11,263,821#	38,27,687	40,37,782	34,49,282
Total number of children dewormed (1-19 years)		5,51,60,724	4,77,24,590	4,73,79,899	4,32,74,297

Source:
* As discussed in Steering Committee Meetings. Number of schools as gathered by Education department- DISE 2015-16
 # This is derived by taking difference of census population and the population of school enrolled children
**Report submitted by SHSB to GoI dated March 27, 2017 (Annexure A.1)

Evidence Action provided comprehensive technical assistance for the successful implementation of NDD in February 2017, at both the state and national level. At the national level, 34 states conducted NDD in February 2017, targeting 340 million children. In line with the national guidelines, the state government committed to deworming all children aged 1-19 years, referring to census data with reinforced strategies for inclusion of private school children including *Madrasas* and Sanskrit schools. At the state level, taking the learning from the last NDD round in August 2016 where NDD could not be implemented due to drug unavailability, the department of health ensured availability of required quantity of drugs and its availability to all districts well ahead in-time to the NDD round for onward distribution to all schools, *anganwadis*, through robust program planning All private schools were target for the first time, thus reflecting on the commitment to expand program coverage.

1. Program Background

1.1 Benefits of deworming

A large body of rigorous scientific evidence from around the world provides a strong rationale for mass deworming[1]in places where prevalence of soil-transmitted helminths (STH) is 20% or higher[2]. Using existing platforms of schools and pre-schools for mass deworming is a cost-effective way to reach high coverage in children. Worm infections pose a serious threat to children's health, education, and productivity. Some of the benefits of deworming are shown below in Figure 1.

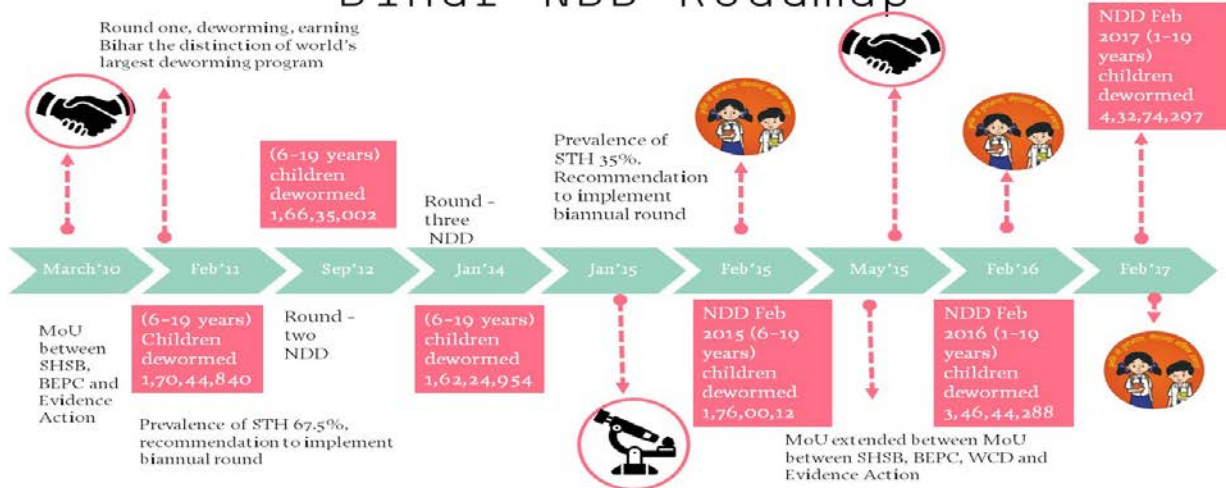### Figure 1: Benefits of deworming

1.2 State Program Background

School and *anganwadi* based NDD program in Bihar is implemented following GoI's NDD operational guidelines. Key milestones are shown in figure 2 below.

Figure 2: Bihar NDD roadmap

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[1] http:/ /www.povertyactionlab.org/publication/deworming-best-buy-development
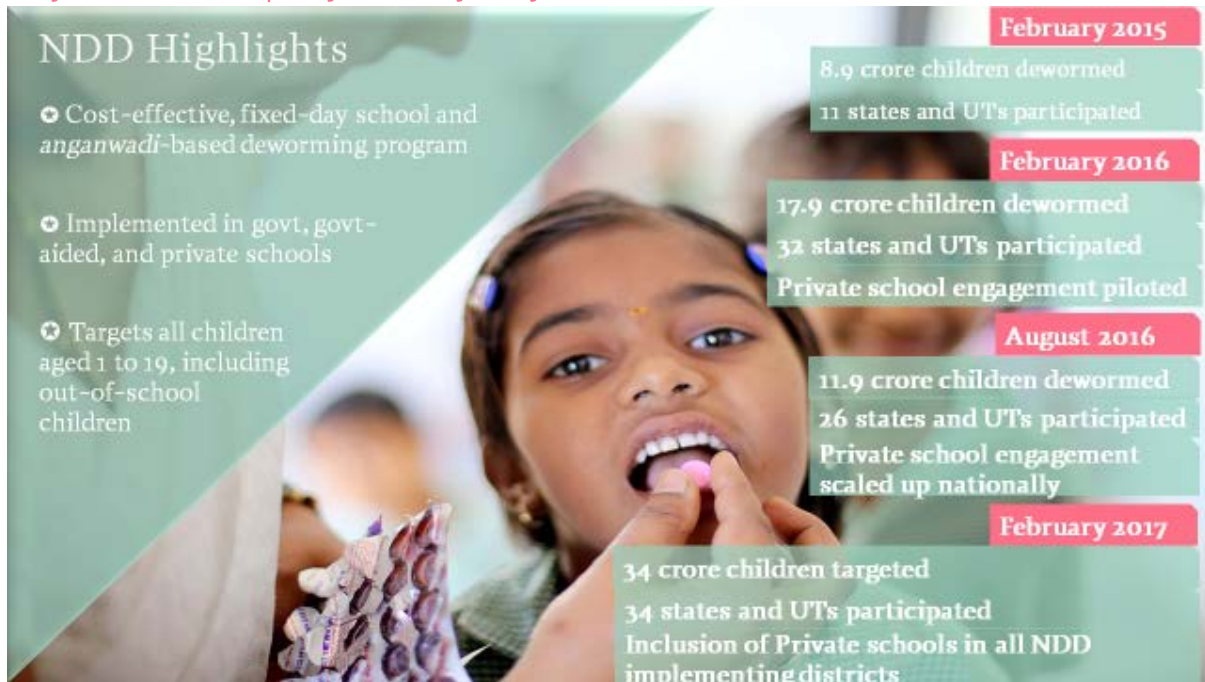[2] "Helminth control in school-age children- A guide for managers of control programmes": WHO, 2011

Bihar NDD Roadmap

*The state planned to conduct August 2016 round in all 38 districts. Due to challenges in drug procurement by the state, the NDD round could not be observed. The Lymphatic Filariasis –Mass Drug Administration program was conducted in 16 of the 38 districts in November 2016.

2. About National Deworming Day

Figure 3: NDD program highlights

The GoI implemented its first NDD in February 2015 and the program has achieved high coverage at scale since its inception. Based on national level STH mapping[3], and WHO treatment guidelines, the GoI issued a notification to states recommending the appropriate

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3 Prevalence mapping was led by the National for Disease Control (NCDC) and partners

treatment frequency based on prevalence data. The State of Bihar is required to conduct bi- annual deworming due to high prevalence of more than 35%, a decline for ›60% in 2010.

3. State Program Implementation

3.1 Policy and Advocacy

Effective implementation of a program of such scale requires intensive stakeholder collaboration at each administrative and implementation level. The key highlights of inter-departmental collaboration are displayed in Figure 4 below.

Figure 4: Efforts towards Stakeholder collaboration

December 6, State Steering Commitee Meeting	December 23, National Review Meeting, New Delhi	January 2, State Joint directives	January 24 & February 7, State Video Conference
• Conducted under the chairmanship of ED-SHSB with participation from all key stakeholders • Review of NDD preparations	• Review of NDD preparations • Assessment of state's preparedness for February 2017 round • Decision on NDD dates and drug availaibility from donation program	• Signed by Principal Secretary -Health, Education and WCD, directives issued to all implementing districts	• Conducted with District Nodal Officers to assess drug status and adverse event management • Discussion also held on mitigating program gaps

The SHSB organized the NDD Steering Committee Meeting at state level in December 2016, wherein important decisions related to implementing NDD round were taken. At the meeting, the state government demonstrated a strong commitment towards maximizing program outreach to all children aged 1-19 years, including children enrolled in all private schools, *Madarsas* and Sanskrit schools **(Annexure B)**. The SHSB initiated coordination with the department of Mid-Day Meal (MDM)[4] to leverage the existing platform of Integrated Voice Response System (IVRS) calls for coverage reporting of the NDD program in real time (on the same day). Evidence Action supported SHSB and MDM in coordination, collection and analysis of data. (Details of coverage included under M&E section below). The MDM allows the automated data compilation from schools from all classes 1 to 8 and thus provides a good platform to be leveraged for facilitation real-time coverage reporting directly from schools under MDM. Learning from piloting integration of NDD related questions to the MDM platform provides timely insights into the NDD coverage and allows for any improvements on coverage for mop up day.
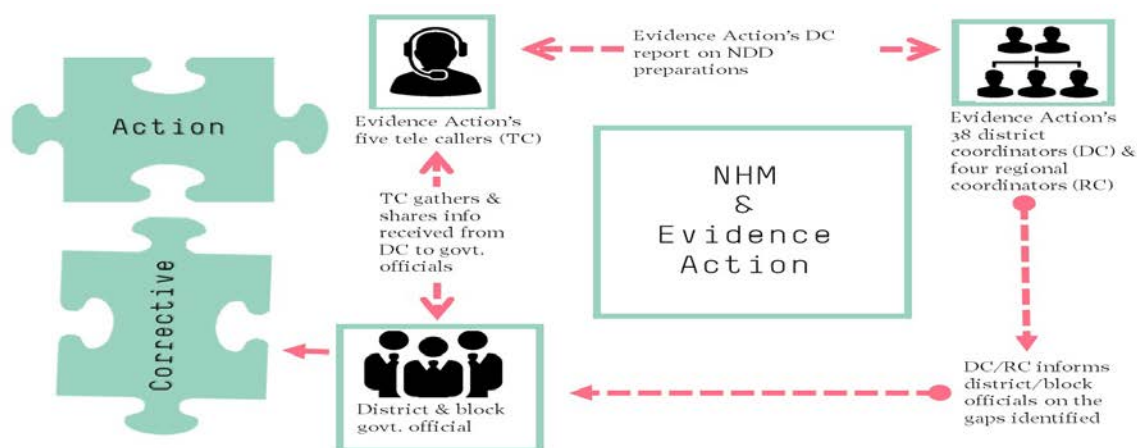
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[4] The Mid Day Meal Scheme is a school meal program of the Government of India designed to improve the nutritional status of school-age children nationwide. The Mid Day Meal IVRS platform is an indigenous system that collects information on program reach through calls to headmasters on a daily basis.

Prior to the NDD round, all 38 districts conducted at least one District Coordination Committee Meetings (DCCM)[5] under the chairmanship of District Collector/Chief Medical and Health Officer during which stakeholders reviewed preparations for the program and clarified roles for improved inter-departmental coordination. Two DCCMs was planned in first and last week of January 2017, as per the state operational plan. The schedule for both DCCMs got delayed by a week due to busy schedule of the government officials given their involvement in other programs. These included three state-wide programs which were being conducted in parallel to NDD preparations viz. *Prakash Utasv* (January 1-8, 2017), Manav Shrinkhala (January 21, 2017) and Polio round (January 29 to February 3, 2017). This lead to delayed DCCMs and consequently delayed decision making at district and block level for finalization of trainings schedules. Out of 38 DCCMs, private school associations participated in 10 districts only while in rest of the 28 districts district Education officials participated and were responsible for the dissemination of the information in the private schools. However no matrix or indicator was set in place to understand if they actually did and what the outcomes were.

3.2 Program Management

Evidence Action provided technical assistance through a state based team, including field-based regional coordinators and short-term hires for three months such as district coordinators (at each district) and five tele-callers (at state level). The state team assisted with program planning and also coordinated with stakeholder departments to share real time updates on program implementation and facilitate corrective actions from the respective government departments. Figure 5 gives an overview of the information flow between the Evidence Action team and district and block government officials.

Figure 5: Evidence Action facilitates corrective action

3.3 Drug Procurement, Storage and Transportation

a) Drug Procurement: Planning for drug availability was streamlined much in advance based on the lessons learnt from the previous round (August 2016) where, the state endured the challenge of procuring the deworming drug (albendazole). As a result, the August round of NDD 2016 was not implemented. The state therefore actively reached out to GoI for support in the supply of drugs for this round. The MoHFW, GoI provided a total of

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[5] Banka district could not conduct 1st DCCM but conducted 2nd DCCM. Darbhanga and Gopaljung could not conduct 2nd DCCM but conducted 1st DCCM.

4,77,24,590 albendazole (400 mg) tablets from the WHO drug donation program to cover all children aged 1-19 years across 38 districts of the state. The SHSB conducted drug testing at state approved laboratories prior to distribution to ensure quality checks.

b) Drug Logistics and Distribution: Evidence Action developed district and block wise drug bundling and distribution plans **(Annexure C)** to streamline integrated distribution NDD kit [6] to schools and *anganwadis*. The kits were distributed at the district level to health functionaries, who further distributed it to Education and WCD functionaries during block level training. Evidence Action supported the state department in tracking drug availability at district and block levels through tele calling and field staff, and provided timely updates to allow officials to undertake corrective actions.

c) Adverse Event Management: The state also set up an adverse event management system by engaging *Rashtriya Bal Swasthya Karyakarm*[7] teams, to effectively respond to any adverse events in the field. Also, a special cell was formed at the SHSB with dedicated responsibilities to senior officials to monitor any case of adverse event in the state both for NDD and mop-up day and manage media interactions as needed. An emergency helpline number, 102 was put on alert to facilitate appropriate emergency response action by coordinating medical assistance from the nearest primary health centre. To provide guidance on functionaries' roles and responsibilities to handle and report adverse events, the training cascade provided focused and customized information at all administrative levels. A total of 11 severe adverse events were reported during the NDD February 2017 round, as per coverage report submitted by state NHM to GoI. Out of these only one child was hospitalised in block Ariyari, Sheikhpura district. Remaining 10 cases did not require hospitalization and were managed at the schools/ *anganwadis* level. Correct reporting on adverse event need to be improved in the future rounds through focusing more on the correct understanding of the mild or severe adverse events at the school/ *anganwadi* level.

d) Drug Recall: Evidence Action supported SHSB in tracking leftover albendazole tablets from the round. The drug recall status for all 38 districts is presented in the table below:

Table 2: Drug Recall Status in Bihar

Total Sealed boxes	12,767
Albendazole tablet inside the sealed box (12767X200)	25,53,400
Lose albendazole tablets	1,23,247
Total albendazole tablet available sealed pack and loose	26,76,647

The department of health will be directing districts to use the packed boxes in the upcoming August 2017 round as per drug safety recommendation. (Annexure D, E).

3.4 Public Awareness and Community Sensitization

The state adapted and printed the NDD resource kit developed by Evidence Action at the national level and approved by the GoI and uploaded on the NHM website. Based on the operational guidelines, the IEC materials were designed to increase community awareness

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[6] NDD kits includes drugs, IEC materials such as posters and handbills and reporting formats.
[7] Rashtriya Bal SwasthyaKaryakram (RBSK) is an important initiative aiming at early identification and early intervention for children from birth to 18 years to cover 4 'D's viz. Defects at birth, Deficiencies, Diseases, Development delays including disability.

on the benefits of deworming, and were disseminated to the target audiences, such as at schools and *anganwadis*. For example, SHSB printed posters at the state level (3, 69,260) for display in schools and *anganwadis* in February 2017.

As per the community sensitization strategy, SHSB conducted state-wide outreach activities such as, radio jingles, TV spots and scrolls and miking[8]. Evidence Acton supported in the content development for these audio and visual communication channels and supported in undertaking miking across all 38 districts in addition to the state government's efforts. Miking was done at prominent places in the district headquarter and select blocks. The block selection was aligned with the miking plan undertaken by government and were conducted in blocks, not covered by the government's miking to expand reach to maximum population. Though Evidence Action developed a social media plan for the NDD February 2017 round, due to lack of any official Twitter handle or Facebook pages by either the SHSB, WCD or BEPC, the department decided to only upload NDD information on the [WCD](#) and [SHSB](#) website. At the national level, there was extensive engagement on the media campaign wherein GoI spent INR 5,65,56,800[9] on the communications campaign for NDD. Additionally, GoI also actively uploaded content on social media (Facebook, Twitter). SHSB also lead the press sensitization workshop on February 8, 2017 chaired by the Executive Director- SHSB. The sensitization workshop was conducted with more than 20 media personnel (print and electronic media) to orient media personnel on the importance of NDD- *anganwadi* and school-based deworming, the benefits of deworming, reasons for adverse events and other key points. Evidence Action provided media kits that included fact sheets, NDD brief, and state specific program information. There was detailed media coverage in around eight leading newspapers that surely contributed generated larger awareness for the program. (Annexure F)

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[8] Radio jingle and spot was relayed for three days on two radio channels. TV spot was broadcasted for five-seven days on Doordarshan and ETV, respectively. Miking was conducted for five days.

[9] DD national relayed the NDD 30 second spot eight times a day from February 6, 2017 to February 13, 2017. DD Patna broadcasted the 30 second spot six times a day for eight days during the same period of time as DD National. Radio Mirchi Patna relayed the 30 second radio spot six times per day for 10 days. Prasar Bharti regional channels for Bihar also relayed the 30 sec radio spot, three times a day, for eight days from February 6, 2017 to February 13, 2017.

Figure 6: NDD 2017 IEC campaign activities

IEC Assessment: In order to continue to improve awareness and community mobilization activities with each NDD round, Evidence Action carried out a NDD communications campaign assessment from May to August 2016 in Bihar, Telangana and Maharashtra. The assessment was designed to understand how target groups perceived the various components of the campaign.

In Bihar the assessment was conducted in Katihar and Munger districts with school-going and out-of-school children; program functionaries; parents; and government officials. The findings from the assessment in the state point to a need to roll out a more robust campaign to increase overall awareness and boost coverage. Findings and recommendations were presented at the National NDD Review Meeting in December 2016. Going forward, Bihar can refer to these findings to gain insights on how the state's campaign can be strengthened in future rounds. Some salient findings:

1. Overall, recall of NDD communications campaign is low (44%)
2. Of those who recalled, community members and school-going children shared that the campaign was informative.
3. 33% of school-going children learnt about the program through the teacher/headmaster.
4. Out-of-school children learnt about the campaign through banners (18%) and TV spots (10%).
5. Only 6% of respondents came to know about deworming through a radio jingle and a radio spot.
6. Maximum community members learnt about deworming through *anganwadi* workers (20%), followed by banners (16%) and posters (12%).
7. Findings from qualitative interviews with government officials show that they were aware about the importance of the campaign; and shared that banners and posters had the maximum reach.
8. Officials suggested that handbills are an effective tool to reach community members.

Recommendations to strengthen campaign in next NDD round:

1. The communications campaign is perceived to be effective by the target group.
2. Continued investment in IEC campaign is necessary in order to improve awareness and recall over time as it has been observed that recall increases over several rounds.
3. Strategic strengthening and intensification needed on campaign implementation.
4. Sustained mass media efforts can better reach untapped groups, such as out-of- school children.
5. Functionaries' understanding of their role in community mobilization should be boosted.
6. Campaign needs to be customized to reach out-of- school and private school children

3.5 Training Cascade

As per NDD operational guidelines, a training cascade was implemented reaching from the state level to all 38 districts and 534 blocks between January 12 to February 8, 2017. SHSB with technical assistance in content drafting, planning, and monitoring from Evidence Action conducted training for 38 District Immunization Officers as master trainers at the state level, who further trained district level trainings. For the first time, district government officials were trained as master trainers, which so far had been supported by Evidence Action. Evidence Action supported the NHM to assure quality of state, district and block trainings through administering training monitoring checklists at districts, blocks (details included below).

Training Cascade: As per the state operational plan, block level trainings were planned to be completed by end of January 2017, but due to busy schedule of the government officials given their involvement in other programs, the training schedule and attendance at district, block trainings were impacted. These included three state-wide programs which were being conducted in parallel to NDD preparations viz. *Prakash Utasv* (January 1-8, 2017), Manav Shrinkhala (January 21, 2017) and Polio round (January 29 to February 3, 2017) which had a domino effect on the training schedule leading to postponements. This impacted participation in block-level training of teachers. Through the cascade, the state trained 77,307 teachers from government and government-aided schools, 5,566 private school teachers, 97,407 AWWs, and 81,980 ASHAs[10] as reported in the coverage report shared by the state to GoI. District and block level officials from all nodal departments implementing the program received training. The details on training dates are annexed. **(Annexure G)**

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[10] NDD coverage report submitted by state to GOI.

Training Resources: The SHSB printed training resources including 1,650 flipcharts; 88,449 handouts for teachers, 96,181 handouts for *anganwadi* workers, and 94,500 leaflets for ASHAs. SHSB took responsibility in ensuring that all the training and IEC materials were printed, bundled and transported to the districts, as per the timelines defined in the state operational plan. Working towards integrated distribution of these resources during trainings, Evidence Action supported in drafting the bundling plan and quantifying block requirements, enabling materials to be efficiently transported to all districts before trainings commenced.

Training Reinforcement: The SHSB displayed laudable commitment to the program and its quality by sending a total of 51, 78,407 SMS[11] to

Table 3: Details of SMS sent		
Department	Number of SMS sent by Evidence Action	Number of SMS sent by SHSB*
Total text messages	41,60,972	51,78,407
*as reported by SHSB		

functionaries from the Department of Health, Education and WCD for reinforcement on district and block training dates, age specific dosage details, correct administration of drug and reporting timelines. This was complemented by Evidence Action's efforts to send bulk SMS to the program functionaries, as shown in the table to fill the gaps. To this effect, Evidence Action sent 41,60,972 out of which 41, 42,203 SMS (99.55%) were delivered. It is important that government stakeholders leverage their existing platforms for sending SMS for greater program impact and sustainability.

Training Support: For quality assurance of training sessions, Evidence Action administered pre and post-tests to participants at state level master trainer's training to measure knowledge retention of key messages. Pre-post-test were also administered at eight sampled districts and 16 block level trainings across these select districts (Annexure G). Based on the assessment, real-time recommendations, highlighting key NDD messages which needed to be reinforced at district, block trainings were shared with SHSB.

Using the standardized training monitoring checklist, Evidence Action's district coordinators attended and provided supportive supervision to all 38 district trainings and 143 block trainings to ascertain if key messages were covered as per NDD guidelines. The detailed analysis is included in Annexure G. The key findings from district and block level training are as follows:

1. Issues with participation of all block representatives from stakeholder departments was observed in districts of *Aurangabad, Begusarai, Darbhanga, Samastipur, Khagaria, Supaul and Madhubani.*

2. Discussion on timely submission of School/*anganwadi* reporting formats and keeping a copy of the form at the school/*anganwadi* was discussed in 96% of the district level training.

3. In 88% of the district training the approval process on NDD App was discussed in detail.

4. All the training materials was available in 88% of the block level trainings.

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[11] Figures reported by SHSB

5. Discussion on role of ASHA to prepare a list of out of school children and submission to the *anganwadi* worker was discussed in 94% of block level trainings.
6. Only in 77% of the block level trainings the participants were instructed to call the ANM in case of any adverse event during drug administration.

4. Monitoring and Evaluation

Monitoring, learning and evaluation is a key component of Evidence Action's technical assistance to the government and enables an understanding of the extent to which schools,

Snapshot of M&E activities
I. Telephone Monitoring and Cross Verification
• Telecalling conducted across 534 blocks in 38 districts of the state • 27,424 successful calls made during December,2016-March, 2017 • 11,582 calls to health functionaries incluidng district and block level officals and ANMs • 5027 calls to WCD department (district, block level offcials and AWW) • 10,815 calls to education department (district, block level officials, government and private schools)
II. . Training Quality Assesment
• Pre-post test was administred during master trainer's tarining at state level • A total of 51 district and 143 PHC level training quality assesment was monitored using standard format. • Pre-post test was also administred at 16 PHCs level trainings across 8 districts
III. Field Monitoring Visits
• Total 540 monitoring visits by Evidence Action staff were made in select schools and *anganwadis* (Annexure I) • NDD monitoring checklist which is part of national guidelines was administered (Annexure J) • Real time findings on key indicators were shared with the stakeholders on NDD and Mop-up Day
IV. Process Monitoring by Independent Monitors
• Process monitoring was conducted in all 38 districts on NDD and mop-up day • 125 trained independent monitors hired by Evidence Action, visited 250 schools and 250 *anganwadis* • Data was collected electronically using Tablet PC (CAPI) as per the tools developed by Evidence Action • Real time findings on key indicators were shared with the stakeholders on NDD and Mop-up Day
V.Leveraging MDM IVRS platform for NDD coverage reporting
• A total of 63,621 schools called on NDD and 69,158 schools called on Mop-up Day • A total of 51,306 schools reported on NDD question and 54,716 schools reported on Mop-up Day
VI. Coverage Validation by Independent Monitors
• Coverage Validation was conducted in all 38 districts post Mop-up day during February 21-28, 2017 • 125 trained independent monitors hired by Evidence Action, visited 625 schools and 625 *anganwadis*

anganwadis and the health system are prepared for NDD and able to implement the deworming activities effectively. This includes assessing the extent to which deworming processes are being followed, and the extent to which coverage has occurred as planned and to make mid-course correction to improve program performance.

4.1 Process Monitoring

Evidence Action conducts process monitoring through telephone monitoring and cross verification, as well as physical verification through field visits by its staff and trained independent monitors.

Tele-calling and Follow-up Actions: Evidence Action assessed program preparedness prior to NDD through tele-callers who track the status of training, delivery and availability of drugs and IEC materials at the district, block, school and *anganwadi* levels. The tele-callers used pre-designed and standardized electronic tracking sheets to capture the gaps in field implementation, as gathered from the telephonic follow ups. The compiled tele-calling sheets were shared with the state government on a daily basis to enable them to take rapid corrective actions as necessary, such as issuing departmental directives, reiterating at a video conference to coordinate with officials, or sending reinforcement messages through SMS. Evidence Action's district and regional coordinators made field visits to facilitate some of these corrective actions at the district and block level.

Of 33,834 phone calls including follow up calls, 27,424 calls (81%) were successful from December 2016 to March 31, 2017. The existing database of mobile numbers was a drawback while following up on NDD implementation, particularly with field level functionaries such as teachers and *anganwadi* workers, which resulted in unsuccessful calls[12] .The insights from SMS delivery reports show that while more than 99% SMS were delivered, the challenge with the contact database is the frequent changes of the contact number. So while the contact number is valid and operational, it may not be still retained by the functionary themselves. Thus, regular updating of the contact database need to be ensured to enhance program effectiveness.

Monitoring by Independent Agency: Evidence Action with approvals from the state government assessed the processes and performance of the program by hiring an independent survey agency whose trained monitors observed implementation on NDD and mop-up day. The findings were shared in real-time with state government officials on the day of visits to enable immediate corrective actions.

4.2 Assessing treatment coverage

Coverage Validation: Coverage validation is an ex-post check of the accuracy of the reporting data and coverage estimates. In this exercise conducted during NDD February 2017 round, a total of 625 randomly selected schools and 625 randomly selected *anganwadis* were visited. Coverage validation data was gathered through interviews with *anganwadi* workers, headmasters/teachers, and a sample of three students from three randomly selected classes in each school visited. Additional data was gathered by checking registers

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[12] the call is termed unsuccessful for the following reasons: 1) wrong respondent 2) Did not-pick-up after multiple tries 3) defunct number/ out of service

and reporting forms in the schools and *anganwadis*. These activities provided a framework to validate coverage reported by schools and *anganwadis* and to estimate the level of accuracy in the data by comparing the recounted numbers (based on the documentation available in schools and *anganwadis*) with numbers in reporting forms.

Coverage Reporting: From block level onwards, NDD coverage reporting was done using the NDD mobile/ web application. Government of India provided the state with 536 user IDs and passwords for NDD mobile/ web application to all blocks and districts for the purpose of coverage reporting.

The state set a target of 4,74, 24,590 children prior to the NDD round. The set target is not in-line with the census target of 5,51,60,724 children primarily because of reduced target of 77,36,134 in the category of out-of-school children, which the state was not confident of reaching as there is no information on where this group can be reached. While reporting coverage on NDD web/ mobile app, districts revised targets, from a set 4,74, 24,590 children prior to NDD round to 4, 73, 79,899 children. The state thus, reported a coverage of 4,32,74,297 against the revised target of 4,73,79,899 children.

While districts were engaged in finalisation of the targets prior to the NDD round, the data on NDD app showed that the districts have approved the block data with reduced/ revised targets, probably to show an increase in the coverage percentage (Annexure A.1). As setting targets is crucial for gauging program performance, the state must ensure covering all children aged 1-19 years, as aligned per the census target and also ensure no revisions are made in targets at the district level post the NDD round.

Capturing NDD coverage through MDM platform: Out of total 63,621 schools who were reached to get the information on NDD coverage, 51,306 responded to the NDD question, which is 80% response rate. Similarly on Mop Up day, 54,716 schools reported on NDD coverage on Mop-up Day out of 69,158 schools, which is 80% response rate. Further analysis of the data shows that the placement of the NDD question as the last question in the MDM IVRS script and the flow on IVRS script impacted the responses slightly with around 1574 schools where MDM didn't conduct, could not listen to the NDD question as the call got disconnected before the same. Further around 500 schools in total disconnected the call before listening to NDD question probably because of lack of orientation on the inclusion. For future NDD rounds, there can be further refinement based on these learnings so that maximum schools report on the platform. This can be done through making the IVRS message algorithm more robust to ensure all MDM schools get a chance to respond to NDD question. Also, further reiteration of the inclusion of this question during NDD trainings can help build understanding of the question.

4.3 Key Findings

Process Monitoring findings highlight that 77% schools and 72% *anganwadis* attended training for February NDD round and around 91% of schools and 90% of *anganwadis* conducted deworming either on NDD or mop-up day. Findings from coverage validation

also reflected that 95% of schools and 93% of *anganwadis* dewormed children during NDD or mop-up day.

Around 83% of schools and 88% of *anganwadis* received NDD posters and banners. However, integrated distribution of NDD kits[13] was comparatively lower for both schools (55%) and *anganwadis* (58%). This shows that little more than half of the schools and *anganwadis* received all materials (albendazole, banner/poster and handout/reporting forms) at trainings which clearly indicates lack of integrated distribution across all trainings. The materials were distributed individually to remaining schools and *anganwadis*, thus increasing the program costs incurred on logistics and also posing a risk on the availability of the materials prior to the round. Around 72% of schools and 50% *anganwadis* received training reinforcement messages through SMS indicating lack of updated contact database of functionaries, particularly *anganwadi* workers. Awareness on the causes of worm infection were high among teachers and *anganwadi* workers (**Annexure H-Table 1**). However, only 21% of teachers and 18% of *anganwadi* workers reported the possibility of any adverse event among children after administration of albendazole tablets. Further, substantial proportion of teachers and *anganwadi* workers were aware about processes for management of adverse events like laying down the child in open/shaded place and observe the child at least for 2 hours in the school/*anganwadis* and give ORS/water. **(Annexure H-Table 5)**

Private School Engagement: Around 19% of sampled private schools (N=25) reported being trained for NDD. Among private schools 49% had sufficient drugs for deworming, 26% received a banner/poster, and 19% received handouts and reporting forms. SMS related to NDD were received by 59% of private schools teachers/headmasters. However, only 29% of the private schools administered albendazole to children. This shows that while drugs were made available to the schools, majority of schools did not attend training, which clearly indicates the lack of integrated distribution in all the trainings. The drugs and materials were distributed individually to remaining schools and *anganwadis*, thus increasing the costs incurred on logistics and also posing a risk on the availability of the materials prior to the round. Program insights shows that this was partly because of limited reach of information about trainings to the private schools as well as unwillingness of the schools to participate in the program. Further, limited availability of contact database of private schools hindered dissemination of important information on program dates, training dates and reporting timelines. Thus, efforts need to be made to enhance private schools engagement through greater engagement of District Magistrates and updating of contact database for providing timely information on program dates, training dates, dosage and reporting timelines. A directive from state to all District Magistrates seeking their active support in the program must be sent to all districts prior to start of district level trainings.

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

Indicator	School (%)	*N*	*Anganwadi* (%)	*N*
Received SMS for current NDD round	72	250	50	250
Attended training for NDD	77	250	72	250
Integrated Distribution of albendazole tablets and Training, IEC materials	55	250	58	250
Schools/*anganwadis* conducting deworming	95	250	93	250
Children consumed tablet	100	1727	NA	
Followed correct recording protocol	43	592	45	580
Copy of reporting form was available for verification	55	592	56	580
State level verification factor[14]	0.49	55,620	0.77	46230
State level inflation rate[15]	104	27,323	29	35793
Estimated NDD coverage based on government coverage data	46	-	68	-
Estimated NDD coverage based on school attendance	76	-	NA	NA

Coverage validation data revealed that 43% of schools and 45% of *anganwadis* followed correct protocols for recording the number of children dewormed. However, around 44% of schools and 36% of *anganwadis* did not adhere to any recording protocol. A substantial proportion of *anganwadi* workers did not have a list of unregistered preschool-age children (41%) and out-of-school children (37%). Only 55% of schools and 56% of *anganwadis* had a copy of their reporting form post submission, though they were instructed to retain a copy as per NDD guidelines and covered at trainings. In addition, the findings indicate high inflation (104%; Verification factor of 0.49) for enrolled children against the verified figures. Similarly, the state level inflation rate was 37% (Verification factor=0.73) for *anganwadi* registered children and 49% (Verification factor=0.67) for out-of-school children. High inflation rate indicates poor documentation of children dewormed at schools and *anganwadis* respectively.

Further, interviews with children indicate that 97% of them received a deworming tablet, indicating that despite challenges in reporting and documentation of coverage data, almost all the children present on NDD or mop-up day received albendazole tablet.

The state government reported 94% coverage in school and 88% in *anganwadis.* Through coverage validation, attempts were made to understand the maximum number of children that could have been dewormed at the schools and *anganwadis*. Coverage validation findings suggest that on an average, we could verify 49% of treatment figures reported by schools and 77% for *anganwadis*. Applying these verification factors to respective government reported coverage, it is estimated that 46% (0.49 * 0.94) children could have been dewormed at schools and 68% (0.77*0.88) in *anganwadis*.

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[14] Ratio of recounted value of the dewormed children to the reported value

[15] Proportion of over reported dewormed children against total verified children in schools and *anganwadis*

Further, we also estimated NDD treatment coverage in schools considering maximum attendance of children on NDD dates. Coverage validation data showed that 95% of schools conducted deworming on either NDD or mop-up day, maximum of 83% of children were in attendance, 97% of children received albendazole tablet and 100% of them reported to consume albendazole tablet under supervision. Taking these factors into account, 76% (0.95*0.83*0.97*0.10) of enrolled children could have been dewormed in the schools. (Annexure I)

4.4 Trend of key indicators over the round

To understand the trend of select indicators over the NDD rounds, indicators are presented in graphical form. Data comparison in figure 8, shows marginal decline in percentage of schools and *anganwadis* where headmaster/teacher/ *anganwadi* worker attended training. In February 2016 round, while 86% of headmaster/ teacher attended NDD training, in February 2017 round this declined to 77%, however, percentage of *anganwadi* workers decreased from 82% to 72% during the same period. Lack of information about NDD training schedules continues to be the main reason for teachers/*anganwadi* workers not attending NDD trainings.

Also, programmatic insights highlights that in the month of January 2017, key activities like *Prakash Parv* and *Manav Shrinkhla* (as detailed above in training cascade) impacted the block level trainings (Figure 8). Though directives were released at block level for these trainings, due to paucity of time (trainings completing a day before NDD), not all teachers/*anganwadis* could attend, as also reflecting in the state coverage report. It is crucial that all block level trainings are completed as per the pre-determined schedules and complete at a minimum of a week in advance to the NDD date (if delayed from training schedule) leaving sufficient time for the teachers to train other teachers in the schools and also for teachers and *anganwadi* workers to mobilise community and spread awareness on the program in the community.

Fig 8: Comparison of training indicators for school/*anganwadi* February 2016 and February 2017 round
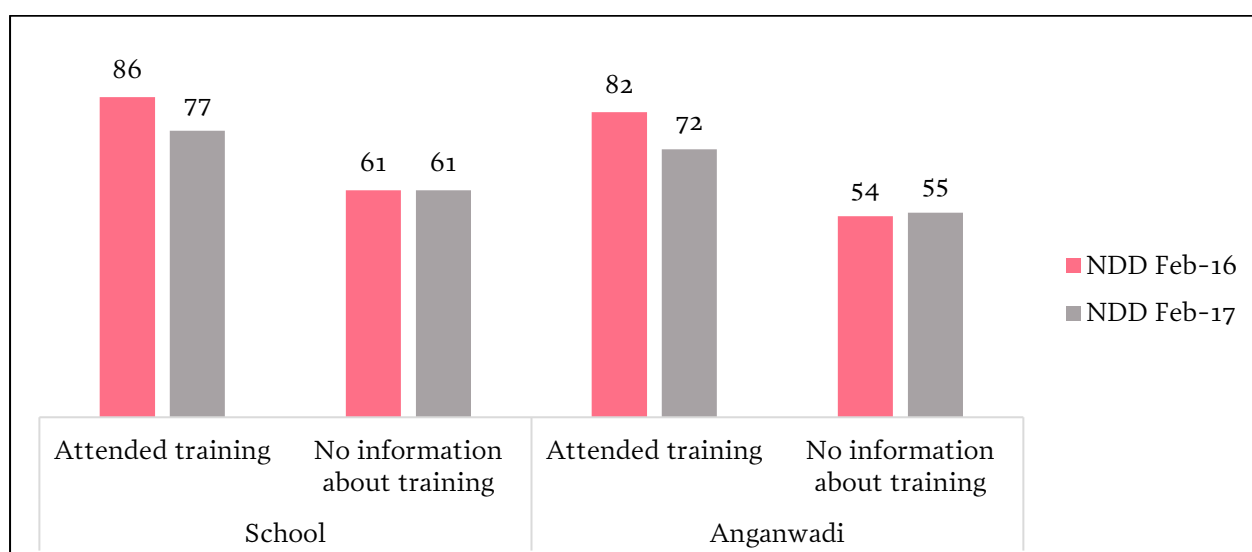
Fig 9: Comparison of key indicators in Schools during February 2016 and February 2017 round
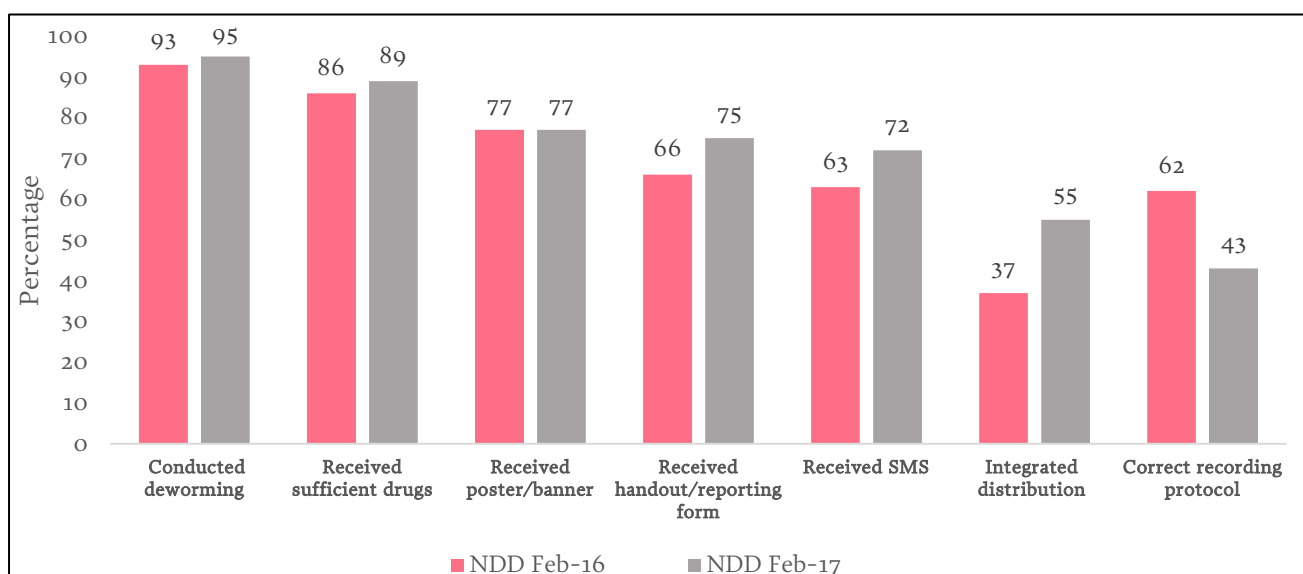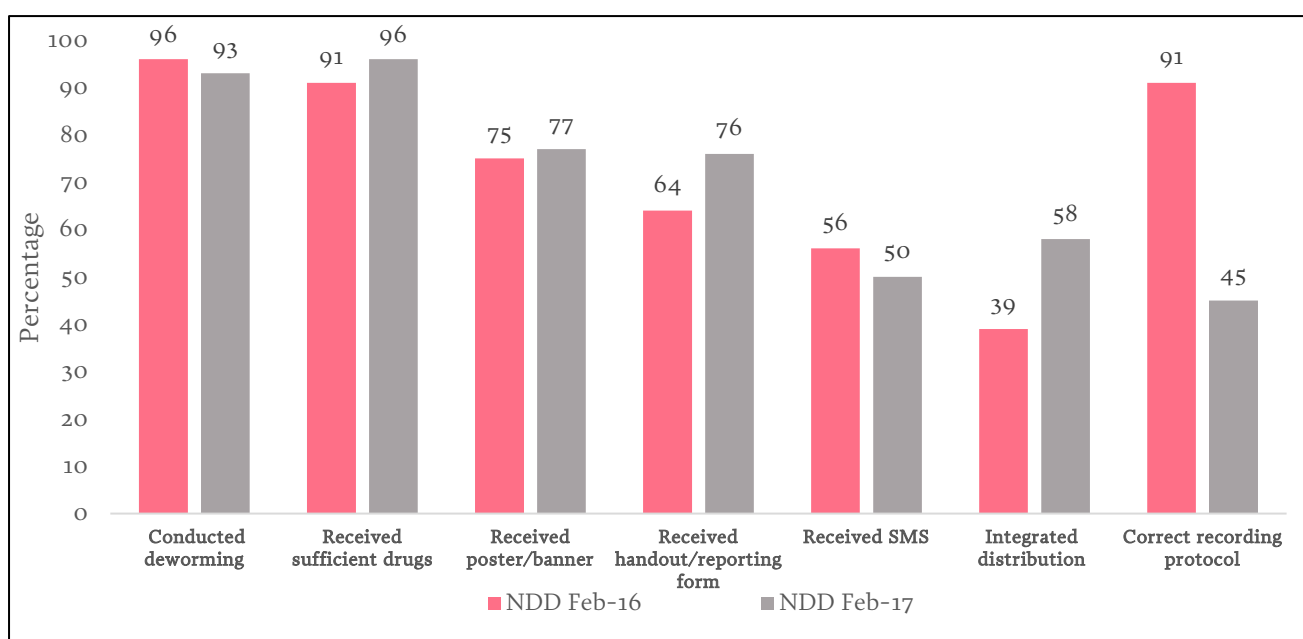
Fig 10: Trend of key indicators in *Anganwadis* during February 2016 and February 2017 round

Further, as per Figure 9 and 10, comparison of selected indicators indicate improvement in most for the indicators for schools and *anganwadis* from the previous round in terms of receiving IEC materials. Program insights show that, unlike previous round, IEC bundling was well planned by taking buffer stock into consideration for February 2017 round. Also, these were transported to district before the commencement of district level training. This needs to be sustained in future rounds. Findings show that while the percentage of schools that received SMS increased from previous round, it has declined marginally for *anganwadis*. This indicates that continuous efforts to update contact databases need to be made in consultation with state officials, especially for *anganwadis*. Tele-calling insights

show that *anganwadi* workers frequently change their contact numbers, thus creating challenges in maintaining an updated contact database. It is also seen that there is a drop in the percentage of schools and *anganwadis* where correct recording protocol is followed. This shows lack of proper data management of dewormed children. The drop in percentage of schools and *anganwadis* followed correct recording protocol, could be partly attributed to delayed and rushed block level trainings thereby impacting the quality of sessions being conducted.

5. Recommendations

It is critical to conduct consistent high coverage program every six months in all 38 districts to bring down worm prevalence in the state and to slow the reinfection rates, therefore continued efforts need to be made towards high quality program twice a year. All the districts in the state are also LF endemic, which requires close coordination with the department. Reaching out to all children will be critical for program success.

1. For a high-quality, high- coverage program, setting targets as per census and reporting coverage against the targets set prior to the NDD round is important. Undermining (or reducing the targets) shows a distorted picture of the coverage, as the program coverage reflects higher percentage with the reduced targets. This need to be focused for all future NDD rounds through engagement with stakeholder departments across all levels. Setting targets as per census will involve inclusion of all children aged 1-19 years including a large proportion of out-of-school children which might be enrolled in technical institutes/ colleges/ universities and or have migrated and engaged in labor or in the unorganized sector. Experiences from other states implementing NDD can be leveraged during program planning stages.

2. For a fixed day program, meticulous planning and scheduling is crucial. Due to board examinations, the mop-up day was rescheduled in five districts to February 13 which left minimal time between NDD and Mop up day for bringing about any program improvements before Mop up day. To avoid last-minute changes in program schedule that impacts program effectiveness, the platforms of DCCMs need to be strengthened for finalizing key decisions for smooth implementation of NDD.

3. Piloting use of MDM platform to receive real time information on coverage in Bihar is a great learning of leveraging existing platforms and has provided an opportunity to explore scale up in other states. This will facilitate real time coverage reporting for a significant proportion of schools and will allow for mid-course corrections before mop up day. The August round must also continue to use this platform.

4. As the state will procure drugs locally for NDD August 2017 round, the district-wise procurement and availability of drugs must be ensured by mid-June to ensure that drug availability is aligned for integrated distribution. The operational plans finalized prior to NDD round should be constantly referred for specific program timelines for better program quality.

5. Low attendance at schools' impact program coverage. It will be critical that the school attendance is maximized in the upcoming rounds as it has been observed through the Independent Monitoring findings that the attendance around NDD is 66% in schools. Efforts are required for increasing school attendance to improve coverage with engagement of education department, through schools engaging parents earlier on through platforms of School Management Committee Meetings; conducting thematic discussions on NDD during school morning assemblies and others. Schools should also be proactively engaging with the *ASHAs* and *anganwadi* workers who are in the community talking to parents, children and other influencers in the community.

6. Efforts are required to improve training attendance of teachers and *anganwadi* workers in future rounds through clear and timely communication on training dates and venues. Robust planning at state, district, block level in order to prioritize multiple programs will ensure teachers and *anganwadi* workers have the appropriate information prior to NDD. It is crucial that all block level trainings are completed as per the pre decided schedule and a minimum of a week in advance to the NDD date (if delayed from training schedule) leaving sufficient time for the teachers to train other teachers in the school and also for teachers and *anganwadi* workers to mobilize community and spread awareness on the benefits of the deworming program.

7. Greater involvement of ASHAs in mobilization of unregistered (1-5yrs) and out-of- school children (6-19 yrs) and spreading awareness on deworming benefits in the community. This should be facilitated through engagement of ASHA coordination cell at state level, releasing a directive on the nature of engagement and role of ASHA worker as well as information on incentive to all districts and blocks at least two months in advance. Strengthening trainings of ASHA through participation at block level trainings and utilizing other channels is also essential.

8. Promote strengthening of private school engagement through participation of their representatives in Steering Committee Meeting at state and district level coordination committee meetings, and special meetings called by district and block education officers. The State must reach out to the District Magistrates in advance- two months at least, intimating them about the program and the key support areas required from their end for the program to have better reach to all children. Engagement of Education department to write and engage with private schools and their associations at district and state level in a timely manner will be essential.

9. To further enhance community awareness, efforts should be made by Department of Health to engage with the Panchayati Raj Institution to include NDD and its benefits on the agenda item in its meeting − two weeks prior to NDD and the period between NDD and mop-up day. It will provide a good platform to be leveraged for key messages on NDD.

10. The improvement in terms of positive trends seen during this round in integrated distribution of drugs, IEC, and reporting forms at the block level trainings, need to be continued for a cost effective and high quality program.

11. It has been observed in NDD Feb round that there lies an impending need to strengthen NDD recording and reporting protocol in order to improve the performance and quality of NDD program. Training and reinforcement messages shared through SMS need to increase focus on the importance of correct reporting protocols and maintaining correct and complete documentation. Additionally, trainers should ensure that teachers/headmasters and AWWs understand the directive to maintain a copy of reporting forms in schools and *anganwadis* so that the data available for coverage validation is more robust and thereby enhanced program verification and validation.

12. As the NDD program continues to be strengthened and systems of financing, procurement, trainings, community mobilization are streamlined, it is important to focus on prevention strategies of worm infections for all future NDD rounds. Active collaboration with other key stakeholder's departments like *Swach Bharat Abhiyan* should be pursued through one-to-one meetings with these departments, release of directives on NDD and linkages/ synergies between two programs be released from NHM to the departments, including seeking for their participation at the state steering committee meeting.

7. List of Annexure and annexures

Annexure A	Report submitted to SHSB for target setting in Bihar
Annexure A.1	Report submitted by National Health Mission (NHM) Bihar to Government of India
Annexure B	Joint letter signed by Department of Health, Education, technical Education and Women and Child Development conforming dates of NDD
Annexure C	Drug bundling plan for block wise requirement of albendazole
Annexure D	Letter on Drug Recall
Annexure E	Compiled drug leftover status submitted by Evidence Action to Government of Bihar.
Annexure F	State IEC plan, national budgets allocated on NDD IEC plan
Annexure G	Compiled Block level training Pre- Post test Analysis; Training Quality Assurance
Annexure H	Independent Monitoring findings (Process Monitoring)
Annexure I	Independent Monitoring findings (Coverage Validation)
Annexure J	Report on Monitoring on NDD