

BIHAR SCHOOL-BASED DEWORMING PROGRAMME

2011 ACTIVITY REPORT



SUBMITTED TO GOVERNMENT OF BIHAR

BY DEWORM THE WORLD

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EXECUTIVE SUMMARY

In February to April 2011, the state of Bihar carried out a mass school-based deworming program targeting all school-age children in the state. The program was immensely successful, providing deworming medication to 17 million children over 67,000 government schools – the largest school-based deworming program in the world to date. This achievement is the result of a robust partnership between the State Health Society Bihar (SHSB), Bihar Education Project Council (BEPC), and Deworm the World (DtW). The Bihar program has already improved the health and education of millions of children, and provides a sustainable foundation on which to build additional health interventions that can be delivered at schools to benefit all school-age children in Bihar. Going forward Bihar's School-Based Deworming Programme will serve as a model for other Indian states interested in implementing large-scale deworming programs.

Key Achievements

Districts covered	All 38 districts
Number of children reached	1,70,44,840 school-age children; of which 1,60,34,403 were enrolled, and 10,10,437 were non-enrolled
Number of government schools covered	67,000
Trainings conducted	Two teachers from each school were trained on deworming drug administration; and at least one Auxiliary Nurse & Midwife or health worker from each Primary Health Center was additionally trained.



INTRODUCTION

Over 400 million school-age children worldwide are infected with parasitic worms. India is estimated to have a high burden of disease on account of soil transmitted helminths (STHs), which include hookworm, roundworm and whipworm. Epidemiologically, school-age children have the highest worm load, and therefore suffer the greatest morbidity. These chronic infections harm their health, nutrition and development, and as a consequence limit their ability to access and benefit from education.

There is a safe, simple and cost-effective solution: mass school-based deworming. Regular treatment through schools can reduce absenteeism by 25%, and is proven to be one of the most cost-effective ways to increase school participation of any approach rigorously tested. The most efficient way to reach the highest number of children is through the existing and extensive infrastructure of schools. Teachers are in close contact with the community and, with support from the local health system, can administer treatment with minimal training.

In 2001, the World Health Organization (WHO) set the goal of treating 75% of school-age children at risk of infection by 2010. However, by the fall of 2006, only 10% of these children were receiving regular treatment. Given the existence of a simple, safe and cost-effective solution, why are so few children being treated? In recognition of the impact of deworming, the Government of Bihar launched a school-based programme to address this issue.

DEFINING THE NEED

In 2009, in recognition of the cost-effective impact of school-based deworming on the health and education of the children of Bihar, the State Health Society Bihar (SHSB) and the Bihar Education Project Council (BEPC) committed to launching a state-wide program targeting all school-age children in areas where worms are a public health problem. Following good practice, the Government of Bihar adopted a model of school-based deworming that has been successfully implemented in other countries worldwide and the state of Andhra Pradesh, which is firmly centered upon a strong relationship between ministries of education and health, with provision of technical assistance from development partners such as Deworm the World (DtW).

The goal of the government-led Bihar school-based deworming programme is to provide treatment to all school-age children at risk for worm infections in all government schools across all 38 districts of the state.

Key to the success of the programme was the creation of a cross-sectoral coordination committee, the State School Health Coordination Committee (SSHCC), which is jointly led by the SHSB, BEPC, and DtW.



Worm Prevalence in Bihar

In collaboration with the Government, from August 2010 to February 2011, DtW conducted two rounds of a worm prevalence survey (see Appendix B) across six districts - Patna, Supaul, Araria, Aurangabad, Muzaffarpur and Gopalganj – to gauge the baseline prevalence of soil-transmitted helminths (STH). In order to build capacity within the health system, DtW trained government laboratory technicians to analyze stool samples collected from over 3,000 children aged 6-14 in government schools. The results of the surveys were then extrapolated using point-level environmental data and maternal literacy as a proxy for socio-economic status to develop a predicted probability map for worm prevalence for the entire state. The STH prevalence for Bihar was on average greater than 50%, indicating the need for biannual deworming as per WHO guidelines. Additional details are provided in Annexure II.

BIHAR SCHOOL-BASED DEWORMING PROGRAMME

Based on the survey findings, the SSHCC decided to implement biannual state-wide deworming. The new school-based deworming program would ensure one round of mass drug administration for all school-age children in Bihar. School-going children would receive a second dose of deworming treatment through the National Filaria Control Programme (NFPC), which already distributes albendazole (a drug used to treat both STH and filaria) to all segments of the population on an annual basis. By coordinating among neglected tropical disease initiatives such as the filaria and STH control programmes, the SSHCC is developing a sustainable strategy to administer biannual deworming and comprehensively tackle worm infections in the state.

In order to ensure the program's reach throughout the state, the school network was selected as the means to achieve comprehensive coverage. This mass school-based deworming effort was the first school health intervention to be implemented by the Government of Bihar on a state-wide basis, throughout all 38 districts. The SSHCC was initially formed at the state level to provide guidance and oversight to the entire program, and subsequently was expanded to both the district and block level to ensure the achievement of consistent results across the state.

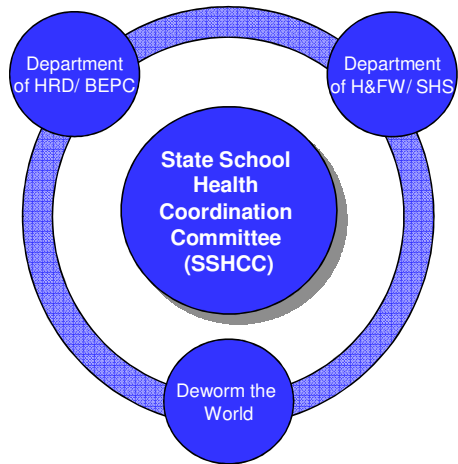
The SSHCC identified the roles and responsibilities of each partner and developed the coordinated implementation strategy working to the strengths of each partner. Central to the implementation are teachers, who with minimal training and assistance from health personnel can deliver deworming medication to school-age children. In Bihar, there is one teacher per 200-300 population, compared to only one health personnel per 1000 population.

“A strong three-way partnership amongst SHSB, BEPC and DtW along with elaborate advance planning and large-scale training of education and health personnel led to the programme's success.”

Mr. Rajesh Bhushan, State Project Director of the Bihar Education Project Council and Secretary- Public Relations Department



The State School Health Coordination Committee (SSHCC) representing key stakeholders will provide direction and supervision to the program



- SSHCC jointly led by
 - Department of Health & Family Welfare/State Health Society
 - Department of Human Resource Development/Bihar Education Project Council
- Deworm the World will coordinate and provide technical support to the government-led programme
- Monthly meetings to provide direction, supervision, and all timely approvals to the programme

Structure of State School Health Coordination Committee (SSHCC)

In the future, an appropriately modified SSHCC could provide the coordination structure to plan and implement other school health and nutrition programmes throughout the state.

The SSHCC played a key role in guiding, reviewing and approving the operational plans for the school-based mass deworming programme in Bihar.

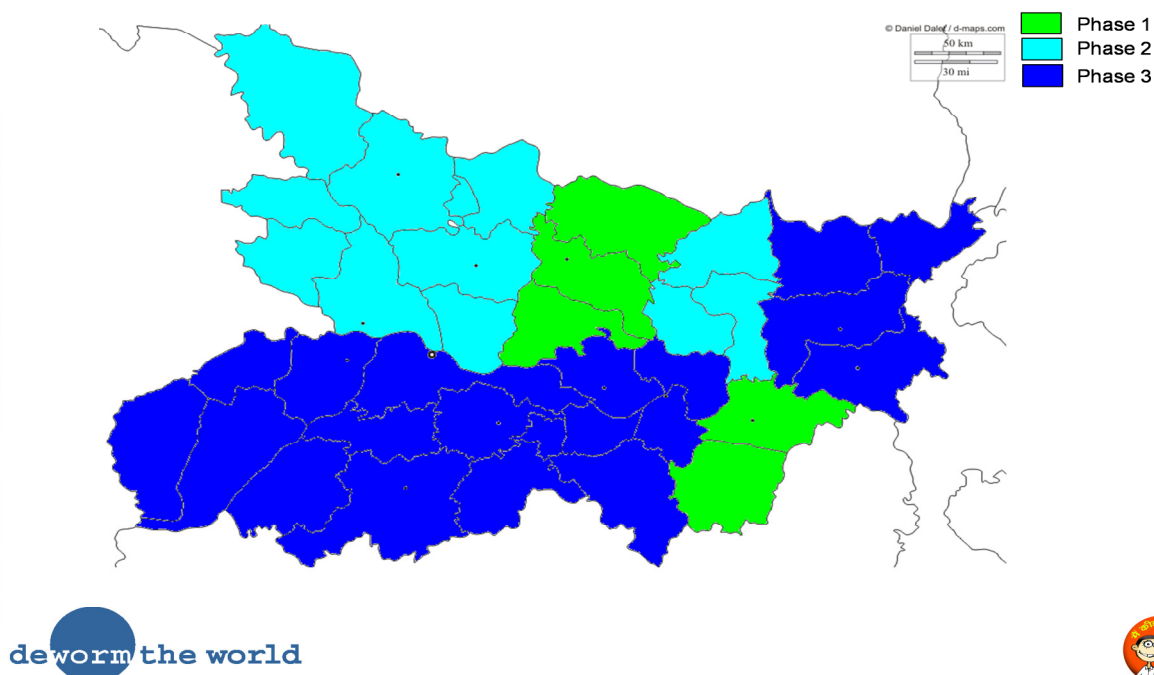
Operational Plans

The school-based deworming programme was implemented in all the 38 districts in a phased manner as follows:

- (a) Phase I: 5 districts - Darbhanga and Bhagalpur Division (Darbhanga, Madhubani, Samastipur, Bhagalpur and Banka).
- (b) Phase II: 12 districts - Saran, Tirhut and Kosi Division (Muzaffarpur, Vaishali (Hajipur), East Champaran (Motihari), West Champaran (Bettiah), Sitamarhi, Sheohar, Saran (Chhapra), Siwan, Gopalganj, Saharsa, Madhepur and Supaul).
- (c) Phase III: 21 districts - Patna, Munger, Magadh, and Purnia Division (Patna, Nalanda (Bihar Shariff), Bhojpur (Arra), Rohtas (Sasaram), Buxar, Kaimur (Bhabhua), Purnia, Araria, Katihar, Kishanganj, Munger, Khagaria, Begusarai, Jamui, Lakhisarai, Sheikhpura, Gaya, Nawada, Aurangabad and Arwal).



Deworming across Bihar was carried out in 3 phases



Each district held a deworming day during which albendazole tablets were administered to the children by teachers in schools. Teachers announced the date of the deworming day in advance and insisted that every child attend school that day.

The deworming day was followed by a mop-up round to ensure that those children who did not receive the tablet during deworming day (because they were absent or sick), received it during mop-up round. The tablet given to the child had to be chewed and swallowed in front of the teacher. The tablet was administered to children, on deworming day and mop-up round, after the mid-day meal in school. The schedule was as follows:

- Phase I: 7th & 11th February, 2011
- Phase II: 7th & 11th March, 2011
- Phase III: 7th & 11th April, 2011

Both SHSB and BEPC worked together to ensure that as many children as possible received treatment through the programme.

Drug Procurement, Storage, & Distribution

The drugs were procured by SHSB two months before the Phase I deworming day and delivered directly to the districts from where the drugs were dispatched to the Primary Health Centre (PHC) based on the number of children in the PHC catchment area. Once the PHCs received the drugs from District Programme Managers, they were responsible for delivering them to each cluster-level teacher training session.



The administration of a single dose of albendazole (400 mg) was straightforward, as each child received one tablet. The teacher ensured that children chewed the tablets before swallowing, and teachers checked that the tablets had been properly swallowed. Clean drinking water was made available at the school on the treatment day where needed.

Role of Officials:

1. The *Civil Surgeon* was in charge of drug procurement at the district-level and supervising drug distribution and transportation to blocks.
2. The *District Programme Manager (DPM)* was responsible for collection of drugs from Patna and calculating the quantity of drugs required per block (total enrollment per block + 10% extra) using the updated enrolment data and for delivering the drugs to the block-level. It was the DPM's duty to ensure the availability of drugs at the block level by February 22, 2011.
3. The *Block Health Manager (BHM)* was in charge of calculating, packaging the drugs school-wise and delivering them prior to the cluster-level training sessions on the 27th of February. In addition, as primary owner of Form T at the block level, the BHM was in charge of deputing adequate resources to get additional photocopies of Form T and of appointing health personnel to go to the cluster-level trainings for supervision of drug distribution and for filling out Form T. He was also responsible for getting back all the "Form T"s from the cluster level trainings, signed by the teachers receiving the drug and certified by the cluster coordinator present during the training by the evening of the cluster level training.

Training at various levels

Trainings were a key component of the programme and they took place at three levels for each phase. During each phase a cadre of selected master trainers were trained in a two-day Master Trainer Training programme at the state-level. After the state-level training, these master-level trainers in turn trained a cadre of master trainers at the district-level. These trainers at the district-level included Block Resource Persons (BRPs), Block Health Managers (BHM) and doctors. They then conducted the cluster-level training where at least two teachers from each school were trained for the implementation of Bihar school based deworming programme along with an Auxiliary Nurse & Midwife (ANM) from the catchment area.

“The two interesting aspects about this mass deworming programme have been – first, that such a technically simple intervention can have such a profound effect on the lives of millions of children; and second, that when there is horizontal collaboration between different government departments, an otherwise unimaginable scale of accomplishment becomes possible in a very short period of time.”

Mr. Sanjay Kumar, Secretary - Department of Health & Family Welfare and Executive Director of the State Health Society Bihar

Community Sensitisation

Relevance

A widespread community sensitisation drive was particularly relevant as the school-based deworming programme in Bihar was the first of its kind within the state. In addition, since worm infections are a neglected disease worldwide and its



consequences are not well-known, it was necessary not only to sensitise people about worms but also to brief them about worm transmission, prevention and the obstacle worms represent for health and education. The aim of conducting community mobilisation activities was also to encourage children, communities and the implementers to take ownership of the programme.

Strategies

In order to achieve maximum impact across urban and rural areas and reach enrolled and non-enrolled children as well as parents and the community at large, the Public Relations Department (PRD) and BEPC leveraged existing structures such as Shiksha Adhikar Yatra and Meena Manch. The Government of Bihar devised an innovative community sensitisation strategy to reach the masses through radio jingles, street theatre, posters, banners, handbills, newspaper appeals and press conferences.



Meena Manch show with the message of school-based deworming



Information, Education and Communication (IEC) Material: Poster at a local food stall

Monitoring and Evaluation

To ensure that the intended outcomes of the program were achieved, the programme included a monitoring component. This component was designed to monitor every key element of the programme, including training, logistics, and community sensitisation. Aided by DtW, government officials from the

state- to the school-level participated in program oversight and data collection. Moreover, independent monitors were mobilized in each block (560 total) to visit 5% of all government schools on deworming and mop-up days to ensure that an adequate quantity of drugs were available, trained teachers were administering drugs according to protocol, and community sensitization initiatives were successful in mobilizing non-enrolled children to attend. One auditor per district was in charge of supervising monitors to ensure quality monitoring of all schools.

On deworming days, district-level officials from both the Health and Education Departments visited randomly selected schools to confirm that children were being dewormed in accordance with protocols. Both government monitors and the existing cadre of external monitors of the WHO's polio programme were trained to monitor the school-based deworming programme in Bihar. This approach built capacity across both government resources and external resources to monitor each component of the program and facilitated a smooth roll out by identifying problems as they were encountered, such as the absence of drugs at a school on the scheduled deworming day. In this instance, drugs were then quickly dispatched to ensure that the school was able to treat children on the scheduled mop-up day.

To evaluate the program, data to measure program coverage was collected from every school. This school-level data was then aggregated at the block, district and state level to determine overall program coverage. These monitoring reports were analysed and used to strengthen the programme in subsequent phases.



Deworming Day Reporting Forms

ACHIEVEMENTS

The first-ever state-wide school-based deworming programme in Bihar was a great success. The programme dewormed a total of 1,70,44,840 school-age children; of which 1,60,34,403 children were enrolled and 10,10,437 children were non-enrolled.

67,000 government schools across all thirty-eight districts of Bihar were covered by the programme. Two teachers from each school were trained to administer drugs on deworming and mop-up days and at



least one Auxiliary Nurse & Midwife (ANM)/health worker from each Primary Health Center (PHC) was additionally trained.

This momentous achievement is directly attributable to the excellent coordination and collaboration between the SHSB, BEPC and key development partners such as DtW. This model of scalable and sustainable school-based deworming now serves as a model of school-based deworming nationwide. In addition, school-based deworming provides an excellent foundation for other school health interventions benefiting all school-age children throughout the state.



Deworming day at schools

WAY FORWARD

Building on the success and experience in reaching seventeen million children in over 67,000 schools in the first-time implementation, the Government of Bihar has created a strong foundation for programme continuation and expansion moving forward. Under the leadership of the SSHCC, the school-based deworming programme will be implemented annually in all schools where STHs are a public health concern.

A key component of the school-based deworming strategy is the effective engagement, coordination, and collaboration with all government and development partners (including the National Filaria Control Programme in Bihar) to ensure comprehensive coverage, avoid duplication, and deploy available resources judiciously.

The SHSB, and BEPC, through the SSHCC, are currently in the process of coordinating with all partners and programmes to determine a joint strategy for round two of the school-based deworming programme in early 2012. This model, of collaborative planning and implementation across key departments, is a critical success factor in the Bihar school-based deworming programme, and indeed, in other similar programmes globally. Round one implementation has not only established a strong base for the expansion of a school-based model for deworming in other states but it also provides an effective platform for school health interventions more broadly.



ANNEXURE I - ROLES AND RESPONSIBILITIES OF PARTNERS

In the school-based deworming programme in Bihar, each partner contributed their respective expertise to the partnership structure, institutionalized in the State School Health Coordination Committee (SSHCC). The roles and responsibilities of each partner were as follows:

State Health Society Bihar (SHSB): The primary role of SHSB was coordination and provision of technical support to all Bihar deworming programme partners. SHSB finalized the districts for the Phase I of implementation; identified as Darbhanga, Madhubani, Samastipur, Bhagalpur, and Banka. SHSB was responsible for tablet procurement and certification, and planned the storage of the deworming tablets at the state, district, block and village-level, as needed. Tablets were packed school-wise by the Pharmacists and distributed to the school teachers at the cluster-level training. SHSB identified other necessary support from existing health infrastructure to assist in various stages of programme implementation. SHSB supported BEPC in deworming day(s) implementation and reporting. SHSB was also responsible for community sensitisation, deworming day(s) monitoring and programme extension planning. SHSB along with BEPC was also the coordinating body for advocacy, press conferences and publicity.

Bihar Education Project Council (BEPC): The primary role of BEPC was implementation of the deworming programme through their network of teachers and training through their existing infrastructure. BEPC employed a cascading model of training, whereby master trainers at the state-level trained district-level officials, who in turn trained block level officials and teachers. One of the key responsibilities of the BEPC was the Teacher Training rollout, including training manual preparation, translation into local language as required, printing and distribution of the manuals to the trainees, and handouts to teachers. BEPC also conducted the training workshops at the state, district, block and village-levels; with assistance from DtW to facilitate the state-level Master Trainers workshops. In addition, in coordination with SHSB, BEPC, through their network of school teachers, was the primary partner in deworming day(s) implementation and reporting and assisted SHSB in deworming day(s) monitoring. BEPC also assisted in community sensitisation, press conferences, publicity, and developed an indigenous film on deworming emphasising the importance of the deworming initiative.

Deworm the World (DtW): As a technical and coordination support organization, DtW provided technical support and assisted in the coordination between all partners of the government-led Bihar School-Based Deworming programme. Technical assistance provided by DtW included assisting in the development of operational plans, the determination of deworming treatment protocols, and the development of training and community sensitisation materials for adaptation to the local context and language, which was undertaken by BEPC. DtW, with support from SHSB and BEPC, undertook a prevalence study to precede Phase I of implementation. DtW coordinated a Master Trainer workshop for state-level trainers for implementation of the programme, as well as facilitated a technical training workshop for required numbers of government laboratory technicians and their supervisors for the prevalence study to precede the Phase I implementation.



ANNEXURE II - REPORT OF PARASITE WORM LOAD SURVEY

See attached.

