

ACTION AGAINST WORMS

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Haitian children on their school deworming day.

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SO WHAT IF CHILDREN HAVE WORMS?

You're eight years old, sitting at your school desk with an exercise book in front of you. The sun is blazing outside and you're not feeling well. The teacher is writing something on the blackboard, but you don't care: your stomach is bloated and hurts, and you're having a hard time concentrating. It's been like this for a few years now and it seems to be getting worse.

None of your friends seem to be very energetic today either – maybe it's the weather. You want to go to the lake for a swim. The teacher turns back from the board: "*Remember last week, we learnt about...?*" Your thoughts trail off and you can't remember what it was you were meant to have learnt last week.

You don't have any of the diseases people might automatically think of. In fact, you're heavily infected with worms.¹ You're shorter than you should be, you get sick more often than you ought to, you're less able to learn well, and you feel lethargic and tired when you should be out playing games.

This is your one chance to go to school. If you're lucky, you'll learn some basic skills which might help you to find a job when you leave school that earns you a little more money each month. When you start a family, that extra income may help you to buy more food, school uniforms for your children and medicine when they are sick.

The teacher asks the question again, "*Remember last week, we learnt about different ways to avoid getting infected with worms? Who can tell me one of the ways?*" Your friend sitting next to you puts up his hand and says "*Wash your hands?*" "Very good," comes the teacher's reply, "*and what about wearing shoes and using the latrine?*"

The importance of schooling cannot be underestimated: if a child is infected with worms, their ability to learn is jeopardized through simple absenteeism and more subtle morbidity. How much do the drugs for one treatment cost? US\$ 10? US\$ 5? Less than US\$ 1? In fact, only US\$ 0.20.



A classroom teacher demonstrates proper hand-washing technique to Grade 1 pupils as part of their English lessons in the Philippines.

¹ Worms refer to schistosomes and soil-transmitted helminths (STH), which include hookworms, roundworms and whipworms.

SAVE THE CHILDREN

Save the Children–USA² currently works in over 40 countries worldwide and in 11 of these it runs School Health and Nutrition (SHN) programmes, which identify and tackle some of the most critical health issues that keep children out of school and reduce their ability to learn. Worm infections have been identified as one of the major problems. In each country, Save the Children carries out a baseline survey to assess the situation before a deworming programme is put in place and then follows WHO's recommendations for treatment. Interestingly, the school-based deworming programme is one of the most successful methods to reach non-enrolled school-age children, who often need treatment the most.

SHN programmes follow the FRESH approach (Focusing Resources on Effective School Health).³ There are four main components to this approach, each reducing worm infections in a different way:



Increasing health and nutrition services in schools. Schools are an ideal place to screen children for health problems and for teachers to give simple medications and treatments, such as micronutrient supplements and deworming tablets.



Increasing access to safe water and sanitation in schools. Lack of clean water and latrines in schools means that infections have every chance of spreading easily. Children cannot wash their hands if there is no water, and latrines rapidly become a source of infection if there are only a few for a whole school. Installing these facilities is a priority.



Encouraging healthy behaviours. Using special programmes and learning tools, children can be taught to adopt healthy behaviours (e.g. washing food before eating it) and avoid risky behaviours (e.g. urinating and defecating in a nearby water source) from an early age.



Promoting school health-related policies. Schools need health policies, which can range from the simple delivery of deworming tablets to creative incentives to keep young mothers in school.

For this issue of *Action Against Worms*, we asked Save the Children to send stories from their deworming programmes. Experiences from the Philippines – which highlight how a community's involvement is crucial – and from Malawi and Haiti are described. All three prove that with very few resources, an organization can add deworming to their current activities. All three programmes share clear similarities.

² Save the Children-USA is a global non-profit-making children's relief and development organization. For more information, see <http://www.savethechildren.org>

³ For more information on the FRESH approach, see <http://www.freshschools.org/>

SIMILARITIES BETWEEN THE DEWORMING PROGRAMMES IN THE PHILIPPINES, MALAWI AND HAITI

All three programmes:

- carry out baseline assessments before taking action;
- spend time and energy to involve the communities before launching any programme;
- use teachers to deliver the drugs;
- make efforts to reach as many non-enrolled school-age children as possible;
- generate and capitalize on building partnerships to carry out the work.

THE PHILIPPINES

Meding Santos, a 32-year old housewife from Masville with five children says *"It's natural for children to have worms. A kid is not a kid if he does not have worms"*. Her comments reflect the frequent belief held by people who live in endemic areas that worms are simply an inevitable part of life.

Masville is a congested slum in Paranaque City, in Metro Manila. It is densely populated, with 7000 low-income households – a perfect breeding ground for worms. Masville's Elementary School is one of four in the Metro area and one of 75 partner schools across the Philippines where Save the Children is implementing an SHN programme which will reach nearly 25 000 children. These programmes deliver a package of health and since worms are one of the most important health problems in the Philippines, treating the children and educating them on how to avoid reinfection is a priority action in the package.



Masville Elementary School has ~ 2250 enrolled children, 60 teachers and a principal.

Discovering, Dreaming, Designing and Delivering

"The best way to act against intestinal parasitic infection among schoolchildren is to involve the community", remarks Ms Beth San Miguel, manager of Save the Children's Metro Manila programme. Ms San Miguel is one of the proponents of and a great believer in an approach which brings the community and schools together to tackle health problems. *"Tapping the strengths of local partners and focusing resources around a central issue are essential to respond to problems like soil-transmitted helminths in an urban setting"*, she says. Save the Children does this by encouraging communities to use the **"4Ds"**

The *Discovery* phase



Photo 1. © SCF

In 2001, a baseline survey was carried out in the Metro area which found that in three of the four schools, 67.5% of the children were infected with worms. Once this information was shared with the teachers, it made immediate sense to them. Here was the reason why their students frequently complained of stomach aches or felt sluggish and were inattentive in class – well over half of them were infected with parasites. Mass deworming began followed by weekly iron supplementation for all the pupils: the results were impressive, just one year later the prevalence had dropped to 50.8%.



Photo 2. © SCF

For Masville Elementary School, however, the story was different. Despite a 98% compliance rate with the treatment programme, the overall prevalence of worm infections did not drop, in fact it rose from 49.7% in 2001 to 56.1% in 2002 and many children still showed moderate-to-heavy intensities of infection. This led the community and the school staff to question whether the programme could be strengthened in some way. The conclusion they reached was that the problem had to be attacked at its source – at the point where the children were becoming infected, i.e. in their communities.

The *Dream* and the *Design* phases



Photo 3. © SCF

As a planning device, two "spot" maps were created by the village health workers and teachers. One pinpointed the houses where the moderately to heavily infected schoolchildren lived, and the other mapped the water-supply points and sanitary toilet facilities. A community meeting was then called, the spot maps were pinned on the wall and the discussion began. With this simple approach, the response was astonishing: the residents could see the problem in their own neighbourhoods and see that the homes of the most heavily infected children were clustered in the most overcrowded areas and where sanitation was particularly bad.



Photo 4. © SCF

What also became clear was that no matter how systematic the treatment was at school, the children still went home to parasite-ridden communities and were immediately reinfected. The response for action was overwhelming, and under the motto "Healthy children living in a healthy environment", the community began planning how to reduce infection rates in both the enrolled and non-enrolled school-age children in their neighbourhoods.

Photo 1: A class of children taking their deworming tablets.

Photo 2: Masville residents formulate a plan of action to control and prevent worm infections in their community.

Photo 3: Masville community residents at the consultative meeting where the spot maps were presented.

Photo 4: Community residents, parent volunteers, school teachers and Save the Children staff locate the homes of children who underwent stool exams on a community map.

The *Delivery* phase

The Masville residents gave themselves at least one year for their delivery phase and recognizing that children are the most vulnerable to worm infections and also the most effective players in control programmes, they put them at the heart of their plan. Following the lead of other SHN programmes, girls and boys from Grades 4–6 were trained as junior health partners (JHPs) to assist the school health staff in their work. For the deworming programme, the JHPs remind their fellow pupils to submit their stool specimens on time, give health talks using flipcharts and videos on proper hand-washing, using latrines, the importance of keeping finger nails clean and short and how shoes protect from infection. On the treatment day, they assist with giving out the tablets.

"I am very proud to be a member of the junior health partners in my school because I get to help our teacher in the school clinic and make new friends. I can also apply what I learnt about health at home because I have a lot of younger brothers and sisters", says Rose, a Grade 6 pupil at Masville Elementary School, when asked about sharing information to prevent worm infection.

Embedding health in the curriculum and making learning fun

To make both learning and teaching about worms more fun, Save the Children has developed a number of teaching tools which use songs, drawings, games, contests, puzzles and story telling to help to relay the messages and change the children's behaviour. The approach has been so successful that enhanced lesson plans have now been developed using the same approach and these are now part of the official curriculum in areas outside Metro Manila. *"The enhanced lesson plans are a great innovation in controlling worm infections. Many of the teachers enjoy them because the methods are active and very creative, which means the children are more attentive and learn a lot more easily",* comments Ms Melanie Bagsit, District Supervisor of San Rafael Town.

"It may sound like a cliché, but indeed, it takes a village to raise a child", says Ms Socorro Rivera, one of the active District Supervisors of Paranaque City and a proud alumna of one of the partner SHN schools. And it is this philosophy which underpins Save the Children's deworming work in the Philippines. By involving the community, they become much more aware of how the environment and certain behaviours contribute to their children's health and what they can do to reduce the risks of infection. Only when children and adults work together in the schools and the community can a long-term solution be achieved in preventing and controlling worm infections.



Photo 5. © SCF



Photo 6. © SCF



Photo 7. © SCF



Photo 8. © SCF

Photo 5: Wearing their yellow vests donated by the local Rotary Club, Masville school JHPs help the school clinic teacher to take the weight and height of the younger schoolchildren.

Photo 6: JHPs using a flipchart to teach other children about worm infections.

Photo 7: A teacher uses the enhanced lesson plan to teach science and health conveying the key messages on how to prevent worm infections through story telling.

Photo 8: Schoolchildren lining up to receive their deworming tablets (a single dose of albendazole in a 400-mg tablet) from their trained classroom teacher.

MALAWI

Kazembe's story

Kazembe is a 15-year old boy in Class 6 at St Augustine II Primary School in Mangochi District. He lives in Ntagaluka village with three older brothers, two younger sisters and both his parents. Kazembe plays football every afternoon and often swims in the Shire River that runs close to his village. He is a friendly outgoing boy, who hopes to be a famous footballer one day.



Kazembe clearly remembers when he had schistosomiasis (also known as bilharzia). *"I had a tough time as a footballer because I suffered from bilharzia for many years. Often when I was playing football I would realize that I was wetting my shorts without meaning to because of the illness. I would have to leave the football pitch to pass urine and that was very painful. At night I would also have pains in my groin area which made me uneasy.*

"I heard that there would be bilharzia treatment at my school and I knew that I needed it. It wasn't long before we pupils received the treatment. Although the medicine made me dizzy and tired, I managed to stand up to it. Later that week I felt much better and was able to carry out my household chores. Now I can play with friends and do well in football without any problems ... I don't have to leave the game and I can concentrate on becoming a better player"

Malawi shares almost the entire length of its eastern border with Lake Malawi, and schistosomiasis is rife. In partnership with the Ministry of Health and Ministry of Education, the SHN programme here is one of Save the Children's largest, oldest and most comprehensive, targeting 142 000 children in 171 schools in Mangochi and Balaka Districts.

For these children, schistosomiasis is just one of many diseases which affect their ability to attend school and learn effectively. Save the Children therefore concentrates on delivering a package of health, which includes vitamin A and iron supplements, treatment for malaria as soon as the first symptoms are detected, and screening for vision and hearing problems. In 2000, praziquantel was added to the package on an annual or biennial basis depending on the prevalence in the area.⁴



Eating porridge before treatment.

⁴ Save the Children's programme follows WHO's protocol for treatment: high prevalence areas are treated annually and mid-range prevalence areas are treated every two years.

SCHISTOSOMIASIS AND ANAEMIA

- In 1998, before the SHN programme began, 36% of schoolchildren in Mangochi District were infected with schistosomes, with >80% infected in some coastal schools.
- 47% of the children were anaemic and children with schistosomiasis had significantly lower haemoglobin levels than those with no infection (118 g/l versus 123 g/l, P ⁵
- One year after treatment, the prevalence of schistosomiasis fell to 20% and the prevalence of anaemia to 34%.⁶

BUYING DRUGS

Save the Children buys the praziquantel tablets at a cost of US\$ 89 per 1000 tablets. On average, each child needs two tablets per treatment round, which means it costs just US\$ 0.18 to treat a child.

Reaching non-enrolled school-age children

Where school enrolment is low, the question of how to reach non-enrolled children becomes important. In Malawi, multiple tactics are used to get the word out that a treatment day will be held on a certain day and that all children, whether enrolled or not, should come. The tactics include:

- radio spots to advertise the venue and the day;
- travelling drama groups, which act out stories about why worms are bad for health;
- community meetings to discuss the issue and disseminate the message;
- teachers giving notes to the children in their classes to take home and give to their parents. These notes explain in pictures and words why the parents should bring *all* their children to the school on the treatment day;
- using a buddy system. Each schoolchild is asked to bring as many non-enrolled friends, siblings, cousins and other family members with them on the deworming day, an approach which has been very successful in other countries.



Using the praziquantel dose pole to calculate the correct number of tablets according to the height of the child.

⁵ Bobrow EA. *Child health in learning and development settings: a baseline report for the School Health and Nutrition Initiative in Mangochi District, Malawi*, Save the Children-USA, Malawi Field Office, January 1999.

⁶ Ayoadé RB. *Child health and learning in development settings: School Health and Nutrition Project, Mangochi District, Malawi. Post intervention survey report*, Save the Children-USA, Malawi Field Office, June 2000.

Entrusting teachers

As trusted community members who are in constant contact with children, teachers are ideally placed to deliver the deworming tablets, which are safe and simple to administer. The teachers are trained by health surveillance assistants and supervised by them on the treatment day. On average they can treat about 50–100 children per day and the impact is almost immediate. As one teacher remarked: *"They complain less of stomach pain and are more motivated – this treatment programme has really boosted the children's zeal to be in school."*



Children lining up for treatment with cups to put the tablet into.



Taking the tablets.

A question which Save the Children wanted to answer was, "Has the SHN made any difference?" By examining some of the routine data the SHN programme had collected, several things became clear: the SHN schools had higher exam pass rates, lower rates of class repetition and lower drop-out rates compared with non-SHN schools. The teachers and parents also reported that they noticed that the children's health had improved. *"Because illnesses have been drastically reduced, most pupils can now attend classes regularly and write all of their exams."*⁷

"Parents want their children to go to school now for education and immediate treatment."⁷

Building trust

Having a community's trust is paramount to a successful deworming programme. When the Mangochi programme started in 1999, despite all the work to discuss and explain the benefits of treatment, a rumour spread that the tablets were a form of contraception. The result was that many parents simply refused to bring their children for treatment. The coverage was just 45%. Focus group discussions with the parents, children, and others in the communities began in earnest. Probably the most persuasive argument, however, was that the children who had been treated became rapidly and visibly healthier. Since 1999, the coverage has steadily climbed and is now almost 70%, with many parents who accompany their children to the treatment day now asking why they are not receiving treatment themselves.

⁷ School Health and Nutrition Newsletter, April 2004. Save the Children-USA.

HAITI

The Maïssade Region, the focus of Save the Children's activities in Haiti, is 140 km north-east of Port-au-Prince, in the Central Plateau. This is one of the most vulnerable areas in the country, where soil erosion and deforestation threaten the predominantly agricultural way of life – all too evident in the devastating mud slides this June. There is no running water, no electricity, very limited educational and health services and a net enrolment in schools of just 51% – the lowest in the country – compounded by an annual drop-out rate of 8–18%.⁸

Assessing the situation

In 2002, a baseline survey found that 67% of the children in Maïssade were infected with intestinal worms, 53% were anaemic and those with hookworms were more likely to be anaemic (66% versus 51%; $P < 0.0001$).

First steps: building trust and training teachers

The first step was to explain the problem to the community, to dispel any misinformation and respond to any concerns. Simple flyers were distributed and meetings were held to describe why the children needed to be treated. In tandem with this, training sessions were held so that the teachers knew how to organize a deworming day at their respective schools and how to record the number of children they treated on the monitoring forms.

Installing confidence on the day

In May 2003, the campaign began and was an astounding success. At 54 schools, no less than 12 000 children were lined up, class by class, and each child was given a single albendazole⁹ tablet. Since the practice of teachers delivering health is new in Haiti, the need to instil confidence and gain the community's trust was especially important on the day itself and so each teacher was observed by education and health monitors. Members of the school management committees were also invited. *"We had to let the community see that we were monitoring the process and to show that we cared for the children's welfare"*, says Mr Jean-Marc Zamor, Save the Children's Education Specialist. When some of



One of the 54 schools in the treatment programme.

the children complained about side-effects, time was taken to carefully explain that the drugs are safe and that side-effects are not harmful and only last a short time. The hard work paid off – at the second round of treatment, no complaints were received. The programme organizers even said that they felt that many of the initial concerns came from a general nervousness rather than concrete concerns. Teachers have also reported that the parents were now more confident about the programme. *"There is no question about this,"* says Mr Zamor, *"there is a total and new level of trust that has been forged between the community and the teachers who are responsible for the distribution."*

⁸ Recensement scolaire 1997.

⁹ There are 4 WHO recommended drugs to treat STH: albendazole, mebendazole, levamisole and pyrantel. See *Action Against Worms* January 2004: Issue 1.

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Reaching non-enrolled schoolchildren

With the low enrolment rates in the region, it was essential to reach children who did not go to school, as well as those not in the targeted schools. *"This was a challenging task, which turned out to be very satisfying"*, says Mr Zamor. *"It forced us to work together. We had to create cross-sectoral teams, each one with an education monitor and a health agent, and methodically plan how to reach these children. It was important, for example, to keep really good reporting forms so that we did not treat the same child repeatedly and promoting the activity took a lot of time. In some places we used large megaphones to spread the news and we always sat down with the elders and asked them to help us."* The whole month of February 2004 was dedicated to reach these children. A total of 63 distribution posts was set up and when the numbers were finally tallied, just under 10 000 children had been treated for worms: 3628 children aged between 3 to 5 years and 6253 children aged between 6 and 18 years.



By improving children's health and reducing some of the behaviours which expose them to disease, children are better able to benefit from their schooling.

School Health and Nutrition programmes contribute to the "Education for All" goals – an international commitment to make sure that all children enjoy a basic and good quality of education.

"We are extremely excited", says Gerda Campion, the SHN Coordinator in Haiti. *"I hope this is a programme which really lasts, not only because the community sees how good it is, but because they are truly involved. Reaching that many non-enrolled children was also amazing as these are children who really need treatment."*



Lines of children on treatment day.



Smiling faces after treatment.

We very much hope that *Action Against Worms* is both enjoyable and informative. If you have any comments on existing issues or suggestions for areas you would like to be covered in the future, please do not hesitate to contact us by e-mail at wormcontrol@who.int

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