



**Save the Children**

USA

# School Health and Nutrition Newsletter

*Supporting programs for school-age children to be healthy to learn and to learn to be healthy*

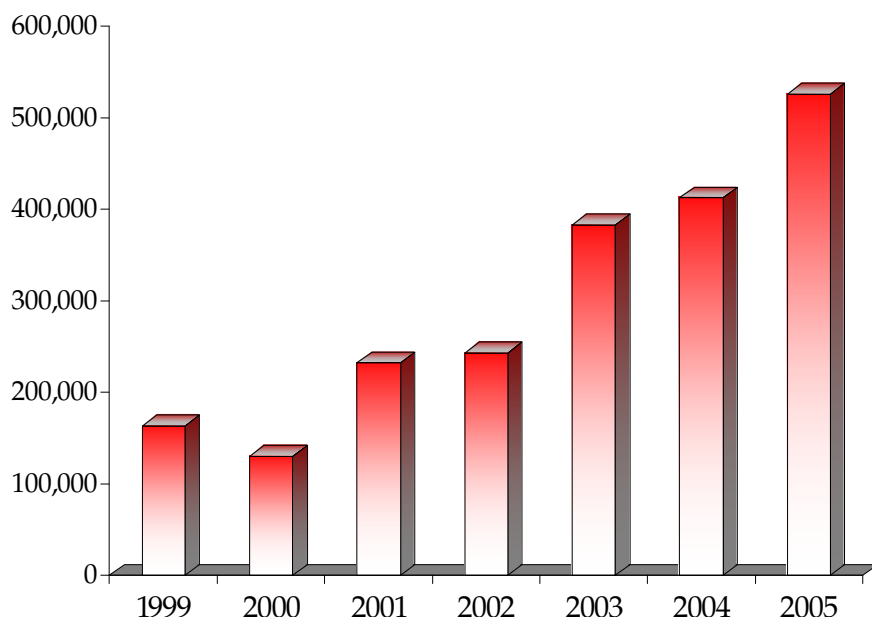
August 2005

*This is the second edition of the annual School Health and Nutrition (SHN) Newsletter.*

## The Growth of School Health and Nutrition

Save the Children's School Health and Nutrition (SHN) programs are expanding every year. In 2005, SHN reached over 500,000 school-age children in 1125 schools in 14 countries across Africa, Asia, the Middle East and Central and Latin America (listed in Programs and Contacts, p.15). Two more countries (Tajikistan and Uganda) are due to launch a program in 2006-2007. In each of these locations, Save the Children's approach is to create model SHN programs in partnership with governments, communities and local organizations and use these programs to advocate for and support efforts to scale up the program nationally. Internationally, Save the Children is one of the leading non-governmental organizations (NGO) in SHN and in many countries, the only international NGO implementing a comprehensive SHN program.

Number of children reached by SHN programs every year



### What is SHN?

SHN addresses the critical health and nutrition factors that keep children out of school and reduce their ability to learn. The aim of SHN is to improve children's health and nutrition status and establish healthy behaviors. All programs follow the principals of the international FRESH<sup>1</sup> framework which are based on best practices and include the following four elements:

- 1) health and nutrition services
- 2) safe water and sanitation
- 3) promotion of healthy behaviors including HIV/AIDS prevention
- 4) health-related school policies.

Note: for more on SHN go to:  
[www.savethechildren.org/health/school/](http://www.savethechildren.org/health/school/)

### Inside this issue:

The Growth of SHN.....	1
Program Updates.....	2-7
Technical Updates.....	8-12

Recent Meetings and Courses.....	12-13
Recent Publications.....	13
Useful Documents and Websites.....	14
Programs and Contacts.....	15

# Program Updates

## Influencing National SHN Programs

When Save the Children launched its first SHN programs in 1998, few countries had a school health related policy and where a policy existed, rarely was it being implemented. Thanks to efforts from the World Bank, the World Health Organization, the Partnership for Child Development and others, many countries around the world now have a national SHN policy. By developing and piloting model SHN programs in partnership with

governments and communities, Save the Children is influencing and moving national SHN policies and programs forward. The following table and case studies summarizes Save the Children's role in different countries and shows how Save the Children uses its experience to advocate for, influence and support the national SHN strategies.

### How is Save the Children influencing national SHN strategies?

Save the Children is ...

- ★ Implementing a model SHN program (or activities) in select districts
- ◇ Presenting program results in national meetings or conferences
- Supporting the creation of a national SHN working group
- Helping draft the national SHN strategy and/or guidelines for implementation
- ✚ Providing technical and/or financial support to advance the national SHN strategy
- ◆ Participating in efforts to improve the national health curriculum for primary schools
- Advocating for a comprehensive national SHN program

Country	National SHN Strategy		Save the Children's role
	Policy	Program	
Afghanistan	yes	no	★●✚●
Bangladesh	yes	no	★◇■●✚●
Bolivia	no	no	★
Burkina Faso	yes	no	★◇■●✚●
Egypt	yes	yes	★◆
Ethiopia	no	no	★■
Guinea	yes	yes	★✚
Haiti	no	no	★◆
Malawi	yes	no	★◇■●✚◆●
Mali	yes	no	★◇■●✚●
Mozambique	yes	no	★◇■●✚◆●
Nepal	no	no	★◇■●✚●
Philippines	yes	yes	★◇■●✚◆●
Sudan	yes	no	★
Uganda	yes	yes	●

### Bangladesh: Using field experience for advocacy

Save the Children has used its experience implementing SHN in Nasiragar to advocate for further expansion of SHN by the government and partners. In March and May 2004, two national workshops were set up with the Ministries of Primary Education and Health and Family Welfare. Save the Children presented results from its baseline survey and highlighted the extent of schoolchildren's health problem in Bangladesh and the huge need for SHN. They also showed how health

education sessions improved hygiene practices in Nasiragar.

The workshop provided an excellent forum for discussion between the Ministries and partners. Participants stressed the need for a stronger collaboration between the health and education sectors and both Ministries committed to scale up their SHN activities based on Save the Children's experience. SHN has now been included in the governments' Health and Nutrition Program Strategic Planning document and partners promised to support the scale up.



*SHN Workshop reported in national Bangladesh newspaper.*

Save the Children initiated the SHN program partnership forum, providing a regular medium for organizations to share experiences in SHN, and helped document strategic principles and guidelines for a coordinated and effective implementation of SHN programming in Bangladesh. Some of the tasks include: - incorporating SHN in the national school curriculum, - improving the school-based health education materials under guidance from the Ministry of Education and Health, and - advocating for a country-wide deworming campaign of all school age children, which has already begun in some regions.

### **Malawi: A demonstration of SHN**

Save the Children in Malawi has been implementing a comprehensive SHN program in Mangochi District since 1998, reaching 101 schools and 130,000 children. The program in Mangochi has been very popular with the communities, and nationally, as improvements in both health and education were reported (see 'Focus on Malawi' in April 2004 SHN newsletter).

The government, with support from key partners including Save the Children, have begun planning a national SHN program to reach all primary schools countrywide. In June 2004, a workshop facilitated and attended by key stakeholders was organized in Mangochi district, which included a visit to Save the Children's SHN program. This visit allowed stakeholders to visualize an SHN program at ground level and discuss practicalities with the children, teachers and health staff. The main objective of the workshop was to create an overall framework for the national SHN program and develop next steps. Following the visit and discussions with local and national officials, stakeholders decided that the national SHN program would be modeled after Save the Children's program in Mangochi.

### **Mali: Sharing results with partners**

Save the Children has been piloting a comprehensive SHN program in Kolondieba cercle in Sikasso since 1999, reaching 187 schools and 56,000 children. Since the start of the program, Save the Children ensured that all key players were involved. In February 2005, following an

evaluation of the program by the Institut National de Recherche en Santé Publique, the results were presented to partners at a national meeting. Participants were very appreciative of Save the Children's efforts in developing a model SHN program, that the national program could learn from. The meeting also provided an opportunity for all partners to discuss the progress of the national SHN program. One of the key tasks identified by the different partners was a need for more coordination, and it was suggested that Save the Children, as the leading NGO in SHN, should assist in this coordination.



*School-children in a community school in Mali (photo by Djibril Doumbia)*

### **Nepal: Coordinating a national SHN workshop**

Until recently, there was no government-led SHN Program in Nepal. Various International NGOs were implementing SHN in their own style, but with minimal government involvement. With no national coordination in place, activities risked being duplicated in some areas, leaving other areas with nothing.

In September 2004, Save the Children approached the Child Health Division at the Ministry of Health and organized jointly, with support from other stakeholders, a national workshop on SHN. The aim of the workshop was to finalize the national strategy for SHN and create an action plan to start implementing the program. Thirty nine participants from 20 organizations, including the Ministries of Health and Education, helped finalize the strategy paper. Amado Parawan from Save the Children Philippines also attended the workshop and provided valuable technical support. The Director General of the Department of Health Services said that Save the Children's role in moving the national SHN program forward had been crucial and emphasized the need to

clarify the roles of the Ministries of Health and Education. The strategy paper is now waiting to be endorsed by both Ministries and the National Planning Commission. Save the Children is piloting a comprehensive SHN program in partnership with local NGOs in 243 schools in Siraha, Kailali and Kanchanpur districts, reaching 93,437 children.

### **Philippines: A reference for SHN**

By developing model approaches and conducting research in SHN, Save the Children has contributed enormously to the advancement of SHN in the Philippines. Last November, Save the Children was invited by the Department of Education to present these experiences at the National SHN Summit in Baguio City. The summit was attended by more than 2,000 delegates from all the 17 regions of the Philippines. The experiences presented included: - using the Appreciative Community Mobilization and Behavior Change Communication approach to tackle re-infection with intestinal worms; - carrying out supplementary feeding and multi-micronutrient supplementation during the lean months; - evaluating school-based weekly iron supplementation; -

and organizing a local multi-sectoral Municipal Children's Protection Council to support SHN, Early Childhood Development, Education and Adolescent Reproductive and Sexual Health related interventions. By acting as a judge of other local SHN programs on a summit related competition, this was also an opportunity for Save The Children to promote best practices more widely.

A UNESCO-funded review of the elementary schools health curriculum was carried out by a number of organizations, including Save the Children, and the recommendations were used to improve the current teaching materials. These were presented to top officials in the Department of Education, national policymakers and key academics in June 2005, before being distributed nationwide. More recently, Save the Children was invited by the Department of Health to be a member of a steering committee to assess the current national program on the control of soil-transmitted helminthiasis in the Philippines.

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## **A Safe School Policy in Uganda**

With Save the Children's support, Wabigalo RC Primary School in Wabinyonyi Subcounty, Uganda, has just put in place a Safe School Policy. The Safe School Policy is a set of guidelines, formulated by children, teachers, parents, school management committee members and other young people to help create a safe supportive learning environment and promote healthy behaviors and positive lifestyles. A five step approach was used to develop the policy (see box), encourage dialogue and engagement between the groups, and strengthen their commitment to enforcing the policy.

In Wabigalo Primary school, the priority issues were teenage pregnancy, defilement by teachers, absenteeism, corporal punishment and ridiculing. Preventative regulations and courses of actions when the regulations are broken were drawn up for each issue e.g. to prevent defilement, no teachers are allowed to send a pupil of the opposite sex to his residence. If this rule is broken, the teacher faces a disciplinary committee. This approach is currently being initiated by Save the Children in 18 schools in Nakasongola District in Uganda.

### **Five steps to a Safe School Policy**

Step 1: Building support: Trainers, with community input, identify key community leaders and groups (teachers, children, parents, etc) and present the objectives of the initiative.

Step 2: Exploring safety: Each group lists characteristics of a safe and unsafe environment and prioritizes them

Step 3: Harmonizing priorities: Similarities between safety issues of each group are identified and prioritized and a Safety Improvement Team is set up.

Step 4: Planning together: Roles are defined and policies are drafted

Step 5: Signing the policies: The policy is signed by members and sent to all key stakeholders. The Safety Improvement Team is then responsible for monitoring the policy and providing feedback.

## Focus on Mali

The SHN program in Mali reaches 187 schools and 56,000 school and non-school children in Kolondieba and Bougouni districts, in Sikasso Region. It's a comprehensive program tackling the four key elements of SHN:

1. **School Health services:** Every year, children are dewormed, supplemented with vitamin A twice and with iron weekly for 12 weeks.
2. **Promotion of healthy behaviors:** Teachers in 70 schools were trained to use the Child to Child approach to teach about hygiene, malaria and HIV/AIDS. The approach encourages children to be more pro-active in their community and share the information with their families and out of school friends .
3. **Water and sanitation:** In partnership with the schools and communities, 92 latrines, including 58 exclusive girl latrines, 600 drinking water taps and 120 hand and face washing facilities have been constructed.
4. **School Health policies:** Hygiene committees have been set up in every school to ensure that latrines, drinking and hand washing facilities remain clean and are used properly.

### Five years later: are children healthier?

In December 2004, exactly five years after the baseline survey, Save The Children and the Institut National de Recherche en Santé Publique in Mali carried out a post-intervention survey to evaluate the SHN program in nine of the ten schools surveyed back in 1999 . One school had closed and could not be re-surveyed.

Both surveys used the same methodologies and instruments. The evaluation survey was carried out approximately twelve months after the last deworming, eight months after the last vitamin A distribution and six months after the end of the weekly iron supplementation.

#### Less parasites

The prevalence of hookworm has halved, from 31% to 15%. The re-infection rate has fallen so much over the years, that a whole year after the last deworming, the prevalence of hookworm is still only half what it was five years previously.

#### Improved nutritional status

The prevalence of stunting and underweight has also nearly halved since 1999. Older children are more likely to be stunted than younger children but are considerably less likely than they were back in 1999.

Only 15% of children under 10 and 33% of children 10 years or older are now stunted compared to 33% and 51% respectively in 1999 (see figure). Other factors may have also contributed to these changes, especially amongst the younger children who have only been in school for a couple of years. Annual deworming, water and sanitation and healthier behaviors, alongside micronutrient supplementation, however, are likely to have played an important role, especially amongst the older children.

#### Prevalence of health problems at baseline (1999) and at evaluation (2004)\*

	Baseline <sup>a</sup>	E valuation <sup>b</sup>
Hookworm (Eggs in stool)	31%	15%
Underweight (Weight for age < 2 Z scores)	32%	22%
Stunting (Height for age < 2 Z scores)	42%	25%
Wasting (Weight for height <2 Z scores)	5.2%	3.7%
Anemia (cut-offs: 5-11y, 11.5 g/dl, 12-14y, 12g/dl)	65%	65%
Vitamin A deficiency (Bitot spots)	5.9%	0.2%
Iodine deficiency (Total goiter rate)	9.6%	0.2%
Iodized salt (iodine in salt >= 45ppm)	69%	87%

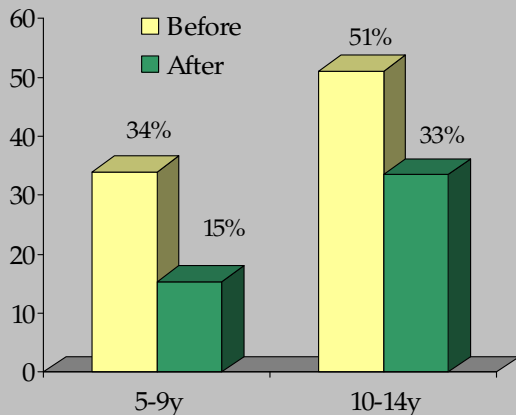
\*At baseline, the sample size ranged between 391 and 396 for all variables except wasting, which was 190. At evaluation, the sample size ranged from 547 and 551 for all variables except wasting, which was 269.

The prevalence of anemia is similar to what it was five years ago. Unlike vitamin A, iron supplements cannot be stored in the body and the impact on hemoglobin levels are only short-term, hence the need for weekly supplementation for a longer duration. The last iron supplement was given six months prior to the survey, which is far too long for effects to still be noticed. A randomized control study in 60 community schools in Kolondieba in 2000, found that weekly iron supplementation for 10 weeks both prevented a fall in hemoglobin levels (as observed in the control group), and improved them substantially too<sup>1</sup>.

The prevalence of bitot spots and goiter, clinical signs of vitamin A and iodine deficiency, fell from nearly 6% and 10% respectively in 1998 to 0.2% in 2004.

According to criteria from the World Health Organization, both deficiencies were public health problems at baseline, but are no longer so today.

Percentage of stunted children at baseline and at evaluation by age group



**Improved hygiene behaviors**

The same survey also compared children’s reported behaviors in the same nine schools with children from five neighboring schools in Bougouni, who had received no health education: 37% of children said they washed their hands with soap and 78% said they used the latrines at school, compared to only 18% and 54% in the neighboring schools.

A qualitative survey carried out in 4 villages in the same area in August 2004<sup>2</sup> also indicated that children’s behaviors had improved, influencing their families and community and motivating parents to keep their children in school:

*“Now our schoolchildren always wash their hands before eating and automatically cover the food to protect them against flies. We’d like it if the other children who don’t go to school also have these behaviors”*

-Parent

*“There’s much better communication between parents and children and more and more parents want their children to go to school. All communities now want a school”*

-Teacher

One of the main challenges for Save the Children in Mali is to transfer more of the program to the communities and local government, allowing the program to continue with little or no support from Save the Children.

*Limitations of a before-after evaluation*

Although the health and behaviors of schoolchildren in Kolondiéba have improved since the introduction of the SHN program, causality cannot be attributed without a comparison group. A comparison group allows us to separate the effect of other factors which may also be influencing the results.

**Why children refused deworming in Malawi?**

When Save the Children launched its SHN program in Mangochi, the overall prevalence of schistosomiasis was 36%, with over 80% of children infected in some coastal schools<sup>3</sup>. One of the first and main interventions was mass deworming with Praziquantel. In most countries, deworming is widely accepted and a high coverage is relatively easy to achieve. In Mangochi however, only 40% of children took the tablets at the first distribution. The others were either absent on distribution day or refused to swallow the tablets. One child said later:

*“We kept the pill under our tongue and spat it out later when the teacher wasn’t looking.”*

-Pupil



A deworming campaign in Mangochi (photo by Humphreys Kalengamaliro)

### Why did children refuse treatment?

To understand the problem, Save the Children carried out in-depth interviews with students of different ages, parents, teachers and leaders and found that the main fear stemmed from their parents who believed that the tablets were contraceptive pills. Knowing that not all children had bilharzia, they couldn't understand why all children should be treated, and why, if their children were not visibly ill, they needed treatment. Children were also scared of swallowing the tablets because they were too big, had a strong smell and they were worried about getting stomach pains afterwards.

Since parents attitudes played the most important role, pictorial letters were developed, radio spots broadcasted and community meetings targeted especially at parents, informing them about deworming and encouraging them to participate during distributions. On the day, children did drama and poetry to encourage other children and parents to attend. As a result of these efforts, the deworming coverage improved the following year from 40% to 69% and the prevalence of schistosomiasis fell from 36% to 22%. The use of monitoring data and qualitative research enabled program managers to identify and understand the problem and address the issues in a targeted and effective way.

## NEW PROGRAMS

**Afghanistan:** With funding from the America's Fund for Afghan Children, Save the Children is near completion of a one-year pilot joint School Health and Nutrition and Child Protection project in two rural districts of Afghanistan: Sayad Abad District in Sar-i Pul Province and Belcheragh District in Faryab Province. Both projects aim to improve children's learning capacity, -by improving their health and nutrition status (SHN) and -by increasing their opportunity for safe play and child-friendly learning environments (Child Protection). A baseline survey for the health and nutrition part of the project was carried out in September 2004 and found that vitamin A and iodine deficiency are public health problems. A nationwide survey by the ministries of Public Health and Education found that nearly half the school children surveyed had single or multiple infections. The main interventions carried out this year include mass deworming and vitamin A supplementation to all school-age children, and the start of a number of Child-Focused Health Education activities:

1. School-based Health Open Days for the community were designed to include the 50% of children who do not attend schools. Key health messages are shared with the community through posters and banners, songs, role plays, etc.
2. Training of teachers to use the nutrition and vaccination modules
3. A Child-to-Child training focusing on violence and corporal punishment.

**Sudan:** With minimal funds, Save the Children has managed to ensure basic water and sanitation facilities and supported a school feeding program in five schools in Um Ruwaba District, in North Kordofan State, in northern Sudan. A clean water supply system, pit latrines and hand washing facilities were set up, and kitchen utensils

provided to support the school feeding program, run in collaboration with the World Food Program and the Ministry of Education. To support and maintain these new facilities, a Health Association made up of trained pupils under teachers' supervision was set up in every school. Their role is to ensure that the water and sanitation facilities at school are functioning and used properly, and to conduct regular health education sessions with other students. The Sudan Field Office is hoping to build upon these activities, and create a more comprehensive results-oriented SHN program reaching more schools and children.

**Guinea:** Despite having no funds specifically allocated to SHN, Save the Children's Education program, in partnership with local village associations, has carried out basic SHN activities in schools in Mandiana district, since 1998. These have included the installation of latrines and clean drinking water taps, and regular visits by the Village Health Committees to discuss health topics or deliver vaccinations during outbreaks. Recently, following a meeting with the Director of the National SHN program, Save the Children decided to pilot an 'expanded' deworming and micronutrient supplementation campaign in Mandiana, currently being done in all schools by the government, to all non school children as well. The Village Health committees and Parent-Teacher associations that Save the Children created back in 1998 in every village, have grown strong over the years, and their role will be crucial in ensuring that all non-school children, even in villages where there is no school, are covered. Save the Children will also be supporting the national program by developing teaching materials on health and nutrition.

# Technical Updates

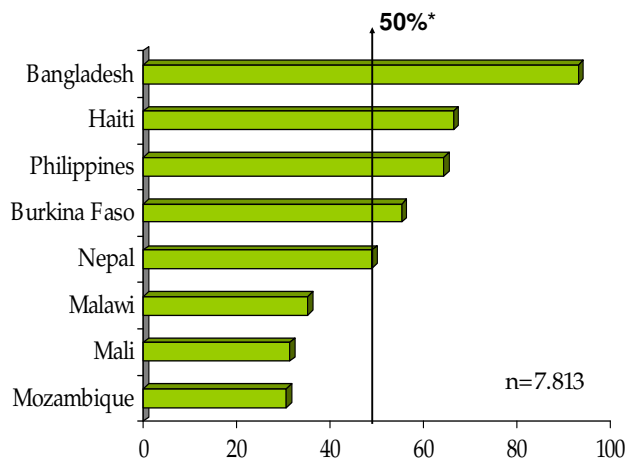
## How healthy are school- children?

Before implementing a SHN program, Save the Children collects baseline data on the health and nutrition status of school-age children to help plan and evaluate the program. These data were gathered from every country and re-analyzed using standard data analysis procedures. The results are summarized below.

### How many children have parasites?

Intestinal worms account for 11-12% of the total disease burden in this age group and represent the single largest contributor to disease of the 5-14 year age group. Chronic worm infection causes anemia, vitamin A deficiency, stunted growth and damage to the liver, intestine and urinary tract. It is also linked to poor intellectual development, impaired cognitive function and increased school absenteeism<sup>4</sup>.

Prevalence of parasites by country



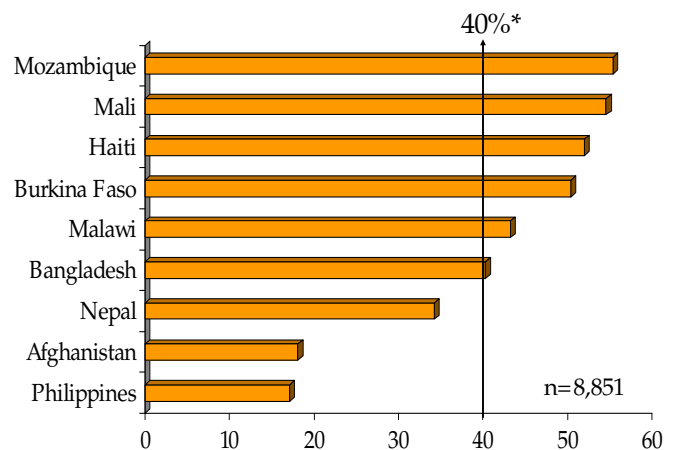
An analysis of stools and urine samples collected from schoolchildren in eight countries between 1998 and 2004<sup>5</sup> shows that over 30% of the schoolchildren had intestinal worms or bilharzia in all countries. In five countries over 50% were infected and in Bangladesh, almost every child had one or more parasites (93%). Most had multiple infections.

### How many children are anemic?

Anemia represents the lowest level of iron deficiency. For every anemic child, there are approximately 2 to 5 times more iron-deficient individuals.

Iron deficiency affects children's cognitive performance, their behavior and growth. It also adversely affects their immune system and increases their morbidity from infections.

The prevalence of anemia by country



Hemoglobin levels of schoolchildren in nine countries were estimated<sup>6</sup> and anemia was calculated using the latest WHO cut-offs<sup>7, 8</sup>. In six countries, the prevalence of anemia was above 40%, signifying a severe public health problem according to WHO categories<sup>8</sup>. It was a moderate (>20%) and mild (5-19%) public health problem in the other three countries. These results mean that the majority of schoolchildren in most countries are likely to be iron deficient.

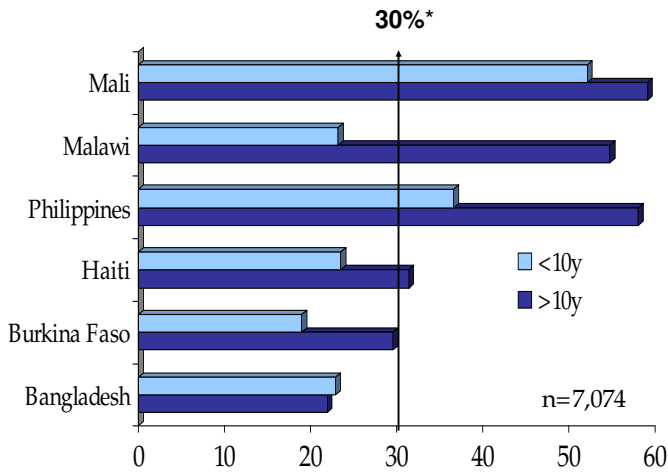
### How many children are undernourished?

Height, weight and age, were collected from schoolchildren in seven countries in Asia, Africa and Central America and used to assess malnutrition<sup>9</sup>.

Stunting (low height for age) is an indicator of chronic and long term malnutrition often linked to poor mental development and late school enrolment<sup>10</sup>. Between 20% and 57% of children were stunted depending on the country, with the highest rates in Mali and Malawi (57% and 52% respectively). In five of the six countries with large enough samples in both age groups, older children (≥10 years) were significantly more stunted than younger children (<10 years).

In Malawi, the prevalence of stunting was more than twice as high in the 10-14 year group compared to the 5-10 year group (55% versus 23%). In four countries, boys were also significantly more stunted than girls. In Malawi, 60% of boys were stunted compared to 44% of girls.

Prevalence of stunting by country and age group



These findings are similar to a number of other large studies that show an increase in the degree of stunting with age. In Zanzibar, boys and girls accumulated height deficits of 11.9cm and 8.5cm respectively by age 13. Although it seems that part of the height deficit accrued through

childhood is made up through delayed and extended pubertal growth, SHN related interventions may also play a role in preventing a rise in growth retardation during their school years<sup>10</sup>.

Wasting (low weight for height), an indicator of acute malnutrition is generally expected to be much rarer amongst school-age children. However, these findings suggest that in a number of countries wasting is still high. In Bangladesh, Philippines and Malawi, 15%, 12% and 11% of children respectively were wasted. Wasting was significantly higher in older children than younger children in five of the six countries.

Underweight (low weight for age) is an indicator of both chronic and acute malnutrition and the findings were similar to that of stunting. All seven countries had a prevalence of at least 20%. Mali, Malawi and the Philippines had the highest prevalence with 43%, 42% and 39% respectively. Boys were significantly more likely to be underweight than girls in four countries, with the largest difference in Malawi (54% versus 23%). Other studies observed similar differences and suggested that it may be due to a bias in the school population or that it reflects a delayed onset of puberty amongst boys<sup>10</sup>.

\* Note: Prevalence above which the health problem is categorized as a severe public health problem.

## Water and sanitation

Water-related diseases caused an estimated 3.4 million deaths in 1998, 2.2 million through diarrheal diseases<sup>11</sup> (World Health Report, 1998). Approximately 400 million school-age children are infected with intestinal worms, often with multiple infections causing malnutrition and growth retardation. Although school-age children are less likely to die from these diseases compared to children under 5 years, they are more at risk of infection. Children with heavy worm burdens are likely to be more absent from school and have poorer learning outcomes compared to those who are lightly infected or free from worms<sup>12</sup>

Regular deworming keeps the worm burden down, but without adequate water and sanitation facilities and healthy hygiene practices, children eventually become infected and rely on deworming to prevent higher worm loads. Other diarrheal diseases such as those caused by protozoas (amoebae, giardia, etc.), cannot effectively be treated on a mass scale: partly because there are no cheap single dose

treatments available, and secondly if the environmental and behavioral context remains the same, re-infection, parasite multiplication and the consequent diarrhea will re-occur almost immediately.

### Reduces infections

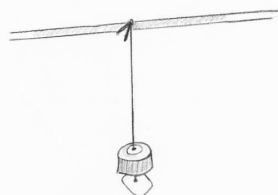
A review of 144 studies assessed the impact of improved water supply and sanitation facilities and found that the medium reduction in morbidity for diarrhoea, trachoma, and ascariis was 26%, 27% and 29% respectively and child mortality (of under fives) fell by 55%. Safe disposal of faeces and hand-washing with soap after contact with stools had the greatest impact on diarrhea (36% and 35% medium reduction in diarrhea)<sup>13</sup>. A recent study in Pakistan found that hand-washing with soap reduced the incidence of diarrhoea and acute respiratory infection by half<sup>14</sup>. In Kenya the reported incidence of diarrhoea following the introduction of a hand washing program

decreased by 40% over two years, while increasing by 70% over the same period in the neighboring community<sup>15</sup>.

### **Wash your hands with soap<sup>16</sup>**

is the most important hygiene message

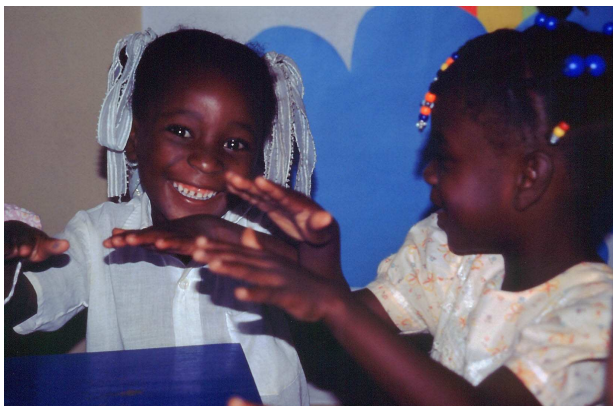
Washing hands with water alone does not help. Ash or mud with water is better than water alone, possibly because we have to rub our hands to get them off. But soap is best to prevent diarrhoea, intestinal worms and other infectious diseases such as coughs, colds and more severe respiratory infections. Making sure soap and water are available next to the toilet facilities and that children use them, is therefore essential.



*To economize on soap, suspend it on a string protected by an empty upside-down tin. Any soap will do.*

### **Improves girls education**

Adequate water and sanitation does more than prevent diseases, it improves girls attendance and enrolment. Without safe, clean, separate and private sanitation facilities in their schools, many children and in particular girls during menstruation will prefer not to attend school rather than use the alternatives. Lessons from a study in 1994 and 1998 in Bangladesh showed that provision of water and sanitation facilities in schools increased girls' attendance by 15% and another school sanitation program increased girls' enrolment by 11%, a level that is beyond the reach of conventional educational reform. They also found that demand for sanitation facilities at home were seen in 80% of children where those practices were acquired at school<sup>17</sup>.



*School girls in Haiti (photo by Luc Vanhoorick)*

### **Clean drinking water in Ganesh primary school!**

At Ganesh primary school in the district of Kanchanpur in Nepal, the temperature in the summer goes up to 42 Celsius and with no drinking water on the school premises, children become thirsty and restless and some even faint. The President of the School Management Committee, who lives near the school allowed children to drink water from his pipe, but there were so many children using it that eventually it had to be stopped. In February 2004, the Nepal National Social Welfare Association and Save the Children helped the community install a thirty-foot pipe and hand pump, providing clean drinking water to the whole school. The children were delighted to have water on the school premises.



*Children enjoying the new water pump at Ganesh primary school (photo by Surendra Thagunna)*

Save the Children found that 50%, 86% and 88% of school children in Siraha, Kailali and Kanchanpur did not have access to safe drinking water at school<sup>18</sup>. Alternative water supplies were often dirty and put children at risk of diarrheal and other diseases. Save the Children has now helped build 50 pumps in 50 schools in Kailali, Kanchanpur and Siraha Districts providing drinking water to 93,437 children. Installing a pump costs approximately \$200. The school and community contribute financially, and provide materials and labour needed for the installation and maintenance of the pumps.

## The impact of school health on cognitive function

A review by Mathew Jukes, the Partnership for Child Development.

*Mathew Jukes has been working for eight years on the cognitive and educational benefits of good health and nutrition in schoolchildren at the Partnership for Child Development in Imperial College, London. Over the next year, Mathew will be working with Save the Children to develop cognitive tests to evaluate the impact of SHN programs in the Philippines. This review summarizes the evidence to date linking SHN and cognitive function.*

Of the 1,200 million school age children in the world, estimates suggest that 300-420 million harbor worm infections, 580-720 million are stunted and 640 million are iron deficient<sup>19</sup>. Many would argue on health grounds alone that such conditions should be treated. However, school health programs are increasingly being justified in terms of the benefits they bring to children's education. Here we consider the evidence that improving school children's health can improve their school attendance and intellectual abilities.

### Nutritional Deficiencies

It is well established that hunger affects performance in cognitive tests<sup>20</sup>. Feeding children breakfast can improve their performance, especially for those who are chronically malnourished. One study in Jamaica found that providing breakfast improved malnourished children's scores significantly (equivalent of more than 3 IQ points) in comparison with well nourished children<sup>21</sup>.

Chronic undernutrition is also related to school attendance and school performance. Stunted children enroll later in school, possibly because their mothers perceive them as less mature<sup>22</sup>. They also perform poorly at school. Children with a low height for age have lower scores in education tests<sup>23</sup>, are less attentive and active during class<sup>24</sup>. School feeding programs have been successful in improving school performance but it is not clear whether this improvement is achieved because the feeding programs improve children's health or because the food acts as an incentive for them to attend school.

There is good evidence that iron deficiency anemia (IDA) affects children's cognitive performance<sup>25</sup>, especially amongst infants and preschoolers. IDA also affects performance at school. School children with anemia and/or iron deficiency score more poorly on tests of educational achievement and of general reasoning ability. Iron supplementation can reduce these deficits.

For example, a study in Indonesia<sup>26</sup> found a substantial increase in concentration and school performance of iron deficient children after supplementation.

It is established that iodine deficiency in utero and early infancy impairs cognitive development. Iodine deficiency in school-age children is related to general cognitive abilities and mathematics tests scores<sup>27</sup>. However, there is no conclusive evidence that iodine supplementation improves cognitive abilities in this age group<sup>28</sup>.

There is growing interest in multiple micronutrient supplementation and there is some evidence that they can be more effective than single interventions<sup>29</sup>.



A visual memory test in Bagamoyo, Tanzania (photo by Mathew Jukes)

### Disease

School children infected with worms perform poorly in tests of cognitive function<sup>30</sup> and are absent from school more frequently<sup>31</sup>. When infected children are given deworming treatment, immediate educational and cognitive benefits are apparent only for children with heavy worm burdens or with nutritional deficits in addition to worm infections. But for most children, treatment alone cannot eradicate the cumulative effects of lifelong infection nor compensate for years of missed learning opportunities. Deworming does not lead inevitably to improved cognitive development but it does provide children with the potential to learn. Children in Tanzania who were given deworming treatment did not improve their performance in various cognitive tests but did benefit more from a teaching session in which they were shown how to perform the tests<sup>32</sup>.

This suggests that children are more ready to learn after treatment for worm infections and that they may be able to catch up with uninfected peers if this learning potential is exploited effectively in the classroom.

Children entering school are found to have poorer cognitive abilities if they have suffered repeated attacks of malaria<sup>33</sup>. Malaria prophylaxis in early childhood has a long-term benefit for cognitive abilities and educational achievement<sup>34</sup> but there is as yet no clear evidence that malaria prophylaxis or treatment in school age children improves educational achievement. Malaria infection is a leading cause of school absenteeism<sup>35</sup>. There is surprisingly little evidence that malaria treatment improves school attendance but one study in the Gambia found that malaria protection in preschool children more than doubles girls' chances of enrolling in school<sup>34</sup>.

It is perhaps not surprising that sick children do not learn well in class and fail to attend school regularly. What is surprising is the size of the educational impact. Even relatively mild chronic conditions can have substantial effects on children's school attendance and learning. The argument for treating these conditions is strong. In comparison with other education interventions, school health programs can be simple and cost-effective, can treat conditions affecting the vast majority of school-age children worldwide, and always confer the greatest benefits to the most disadvantaged children<sup>19</sup>. It is for these reasons that school health programs could be crucial for delivering quality education to all the world's children.

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## Recent meetings

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### Joint SHN Adolescent Reproductive and Sexual Health Program Learning Groups.

Pretoria, South Africa 4-8 October 2004 and Hanoi, Vietnam 17-21 January 2005

Save the Children Adolescent Reproductive Sexual Health and SHN program managers and technical staff came together for two Program Learning Groups (internal capacity building workshops), one in Pretoria which focused on the Africa region and Haiti, and the other in Hanoi focusing on Asia and Bolivia.



*Program Learning Group in Pretoria, South Africa, October 2004 (photo by Kent Klindera).*



*Program Learning Group in Hanoi, Vietnam, January 2005 (photo by Glo Ramat)*

Several guest speakers were able to join: Celia Meier from the Partnership for Child Development made two presentations in Pretoria and Hanoi, one on cognition and SHN and the second on HIV/AIDS and Education; Antonio Montresor from the World Health Organization spoke in Hanoi about worms and the importance of regular treatment to keep the worm load low. CD-Roms with all the presentations are available. Please contact Natalie Roschnik for a copy.

**Global Health Council 32nd Annual Conference, Health Systems: Putting Pieces Together.** Washington DC, USA 31 May-3 June, 2005.

This year, SHN made more of an impact than ever before and delivered three separate presentations:

1. Kenziebell Ndovie (Save the Children, Malawi) talked about 'Improving Coverage of Services through Participant Input' in the From Diet to Diarrhea to Deworming: The Basics of Child Survival panel.

2. Maria Kere-Sorgho (Save the Children, Burkina Faso) made a presentation on 'Scaling Up Health in Partnership with the Ministry of Education' in the Bridging Boundaries: Cross-Sectoral Partnership for Health Improvement Panel.
3. Seung Lee (Save the Children, Africa Region), with co-authors Fadima Maiga and Bame Diallo (Save the Children, Mali) presented a paper on 'Communities Creating Innovative Solution for Health' in the A Growing Circle of Light: Case Studies in Trachoma Elimination panel.

## Recent publications

.....**Save the Children Publications**.....

**Weekly iron supplements given by teachers sustain hemoglobin concentration of schoolchildren in the Philippines** (Roschnik N et al., 2004<sup>36</sup>)

A randomized control trial of weekly iron supplements to schoolchildren in the Philippines found that iron supplements prevented a fall in hemoglobin levels, even where anemia is only a mild public health problem. The prevalence of anemia rose from 14% to 26% in the control group and fell slightly in the intervention group. This study also highlights the importance of having a control group, since without it, one might have wrongly concluded that the iron had no impact on hemoglobin concentrations.

**Save the Children – Deworming in schools** (Action Against Worms, 2004). The

Partnership for Parasite Control dedicated its latest Newsletter to Save the Children's SHN programs. The newsletter focuses on the Philippines, Malawi and Haiti, and summarizes each country's experience with school-based worm control: - involving the community to tackle re-infection in the Philippines, building community trust in Malawi and reaching non-enrolled children in Haiti. Contact Natalie Roschnik for a hard copy or download one: <http://www.who.int/wormcontrol/newsletter/en/>

.....**Other Publications**.....

**Learning to Survive: How education for all would save millions of young people from HIV/AIDS.** (A report from the Global Campaign for Education, 2004).

This report highlights the importance of basic Education in preventing HIV infection. A complete primary education gives the most vulnerable groups in society, especially young women, the status, independence and confidence they need to assert themselves in relationships, and act on what they know about staying safe. New data suggests that receiving at least a primary school education can halve young people's risk of contracting HIV. By adding well designed sexual and reproductive health education programs into basic education programs, the protective impact of schooling can be considerably

enhanced. The full report can be downloaded from: <http://www.schoolsandhealth.org/>

**Modeling the effects of health status and the educational infrastructure on the cognitive development of Tanzanian schoolchildren.**

(Bhargava A et al., 2005<sup>37</sup>)

This paper models the proximate determinants of school attendance and scores on cognitive and educational achievement tests and on school examinations of over 600 schoolchildren in Tanzania. The results showed the importance of variables such as children's height and hemoglobin concentration for the scores, especially on educational achievement tests.

# Useful Documents and Websites

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## General SHN

<http://www.schoolsandhealth.org> provides up to date information on SHN and HIV/AIDS and Education. There are also links to organizations working in SHN, resources to download, a full bibliography of publications and news of past and up and coming events.

Strengthening SHN programmes course CD-Rom, PCD (2005) contains useful documents on SHN related topics. Save the Children staff may contact Natalie Roschnik for a copy.

## School policies

<http://www.unesco.org/education/fresh> has tools to download on every element of SHN including the following on school policy:

School Health Policy Development: Basic First Steps, UNESCO (2004) can be used to identify issues for which policies should be developed to meet the established needs of a given school (or district).

Basic Guidelines for the Development of School Policies Governing Nutrition Interventions, UNESCO (2004) sets out the basic principles to follow when developing school policies and a framework to guide schools in planning, implementing and evaluating health promotion.

[http://www.who.int/school\\_youth\\_health/resources/information\\_series/en/](http://www.who.int/school_youth_health/resources/information_series/en/). The World Health Organization, has developed information series on different aspects of SHN, including the following:

Creating an environment for emotional and social well-being WHO (2003). Is a tool to help school personnel assess the environmental qualities which support emotional well-being and improve upon those that don't.

Steps to Becoming an Inclusive Learning-Friendly Environment, UNESCO (2004) suggests steps that school staff might take to create a more "inclusive, learning-friendly environment" at their school.

Evaluating the Psycho-Social Environment of Your School, UNESCO (2004) contains a questionnaire (the Psycho-social Environment Profile) which evaluates the extent to which a school's environment contributes to the social and emotional well-being of its students and staff.

## Water and Sanitation

<http://www.unicef.org/wes/> has seven useful manuals on water and sanitation to download. Go to [/resources/publications/technical guideline series](#).

<http://www.irc.nl/>, the IRC International Water and Sanitation Centre website, provides up to date news and information on water and sanitation. The new online series of Thematic Overview Papers (TOPs) combine recent experiences, expert opinions and foreseeable trends with links to the most informative publications, websites and research information.

<http://www.unesco.org/education/fresh> also has tools on water and sanitation in schools including those listed below:

Water and Sanitation: A Checklist for the Environment and Supplies in Schools, UNESCO (2004) sets out a number of strategies that will help ensure that schools and educational facilities have adequate water, sanitation and hygiene facilities.

Guidelines for the Provision of Safe Water and Sanitation Facilities in Schools, UNESCO (2004) provides optimal and minimal acceptable standards for the provision of safe water and sanitation facilities in schools.

Simple Technology for Filtering and Disinfecting Water at School, UNESCO (2004) describes a simple method schools can use to disinfect water to make it safe for drinking and using in food preparation.

Selecting an Appropriate Technology for Water Supply Projects, UNESCO (2004) provides information that could help schools seeking to develop or improve their water-supply facilities to choose suitable and sustainable technologies. A number of water-supply technologies are described, with particular emphasis on the operations and maintenance requirements of each.

Child-friendly hygiene and sanitation in schools, Zomerplaag J and Mooijman A (2004) provides guidelines for the design of child-friendly facilities that are part of the learning environment, and that not only 'facilitate', but also enable, stimulate and promote appropriate hygiene practices. Available on the 'Strengthening SHN Programs' CD-Rom (PCD, 2005)

## Programs and contacts

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Save the Children is the leading independent organization creating lasting change for children in need in the United States and around the world. For more than 70 years, Save the Children has been helping children survive and thrive by improving their health, education and economic opportunities and, in times of acute crisis, mobilizing rapid life-saving assistance to help children recover from the effects of war, conflict and natural disasters.

Save the Children USA is a member of the International Save the Children Alliance, a global network of 27 independent Save the Children organizations working to ensure the well-being and protection of children in more than 110 countries.

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- <sup>6</sup> In eight countries, hemoglobin levels were estimated using the Hemocue B-Hemoglurometer, except in Bangladesh where the cyanmethaemoglobin method was used.
- <sup>7</sup> Children aged 5-11y, 115g/l; children aged 12-14y and non pregnant girls aged  $\geq 15y+$ , 120g/l; boys aged  $\geq 15y$ , 130g/l.
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