

School Health and Nutrition Manual:

A guide on how to implement programs in Malawi



A boy aged 9 drinks clean water from a borehole installed in Mangochi by Save the Children.



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Abbreviations and acronyms

ACT	Artemisinin Combination Therapy	KAP	Knowledge, Attitude, and Practice
ADC	Area Development Committee	MALDECO	Malawi Development Cooperation
AIDS	Acquired Immune Deficiency Syndrome	MICAH	Micronutrient and Health
BCC	Behavior Change Communication	MK	Malawian Kwacha
BMI	Body Mass Index	NGO	Non-governmental organization
CAC	Community action cycle	NTU	Nephelometric Turbidity Unit
CASP	Common Approach to Sponsorship-Funded Programming	PEA	Primary Education Advisor
CDA	Community Development Assistant	PTA	Parent-Teacher Association
CHAM	Christian Health Association of Malawi	PTK	Pupil treatment kit
CHN	Community Health Nurse	PZQ	Praziquantel
DHS	Demographic and Health Surveys	RIPT	Results Indicator Planning Tool
DM&E	Design Monitoring and Evaluation	SHN	School health and nutrition
DPD	N,N-diethyl-p-phenylenediamine	SMC	School Management Committee
EDC	Education Development Center; Incorporated	SO	Strategic objectives
EFA	Education for All	SP	Sulfadoxine and pyrimethamine
FAK	First aid kit	SSP	Safe School Policy
FPE	Free Primary Education	STH	Soil-transmitted helminths
FRESH	Focusing Resources on Effective School Health	STI	Sexually transmitted infection
Hb	Hemoglobin	TIP	Trials of Improved Practices
HIV	Human Immunodeficiency Virus	UNAIDS	Joint United Nations Programme on HIV/AIDS
HSA	Health Surveillance Assistant	UNDP	United Nations Development Programme
IDA	Iron deficiency anemia	UNESCO	United Nations Educational, Scientific and Cultural Organization
IEC	Information, education and communication	UNICEF	United Nations Children's Fund
IGA	Income-generating activities	US	United States
INGO	International non-governmental organization	WASH	Water, sanitation, and hygiene
IQ	Intelligence Quotient	WHO	World Health Organization
IR	Intermediate results	WMA	Water Monitoring Assistant
IU	International Unit		

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Background

School health and nutrition programs

Rationale

In recent years, great progress has been made in improving child survival and increasing access to education for school-age children (aged 6 to 18 years) in the developing world. Though they suffer lower mortality than younger children, school-age children continue to face high levels of illness and malnutrition during their crucial growing years, decreasing their ability to pay attention and progress in school. It is estimated that 210 million school-age children suffer from iron deficiency anemia (IDA), 60 million from iodine deficiency, 85 million from vitamin A deficiency, and close to 800 million from soil-transmitted worms [1]. If left untreated, these diseases can cause permanent impairment to their intellectual capacity, chronic illness, and poor growth.

Ensuring that children are healthy and able to learn is essential for an effective education system. Good health increases school enrollment and reduces absenteeism, and brings more of the poorest and most disadvantaged children to school, many of whom are girls. It is these children who are often least healthy, most malnourished, and who will gain the most educationally from improved health. Once healthy and well-nourished, they not only stay longer in school, they also learn more and become healthier and more productive adults.

School health and nutrition (SHN) programs address the critical health and nutrition conditions that keep children out of school and inhibit their ability to learn, while creating a safe and supportive environment that promotes healthy behaviors. Simple interventions such as regular deworming and micronutrient supplementation prevent children from becoming anemic and thus, have a substantial effect on their school performance. The promotion of hygienic behaviors in schools, such as hand washing with soap is among the most effective ways to prevent diarrheal diseases and pneumonia, which together are responsible for the deaths of more than 3.5 million children under five.

Schools are also a cost-effective option to identifying and addressing priority health and nutrition problems in children. School-based micronutrient supplementation and mass deworming do not require diagnosis and selective treatment, and cost anywhere between 4 and 30 US cents per child. They have been shown to improve school performance and restore losses of up to 21 IQ points [1-2]. Because there are generally more schools than health centers, school-based health interventions reach more homes and more children, including non-school going children and their families.

The international FRESH framework for SHN

At the Dakar World Education Forum in 2000, international organizations including the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the World Bank agreed that SHN was essential to reaching the Education for All (EFA) Goals. A framework was thus developed outlining the key elements of SHN programming. FRESH or Focusing Resources on Effective School Health is the framework for a common approach to SHN programming (see Figure 1 below). It forms a starting point for program design and establishes the basis for country programming. The four components of the FRESH framework are:

1. **Safe school environment:** This includes provision of safe portable water, adequate sanitation and the promotion of good hygiene practices for a safe and healthy school environment.
2. **School health and nutrition policy:** This includes advocacy, support and promotion of national and school level SHN policies.
3. **School-based delivery of health services:** This includes micronutrient supplementation, deworming, vision and hearing screening, school-based management of minor illnesses and injuries.
4. **Skills-based health education:** This component is centered on a behavior change approach to the promotion of good health, nutrition and hygiene and prevention of HIV.

In addition, the success of the program and sustainability of its achievements hinges on some key supporting strategies:

- 1) Effective partnerships between teachers and health workers, and between the education and health sectors.
- 2) Effective community partnerships.
- 3) Pupil awareness and participation.

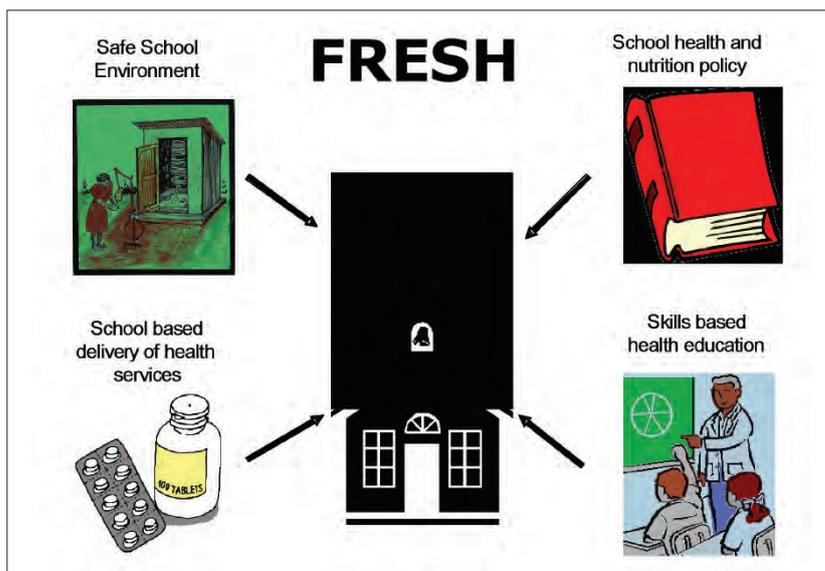


Figure 1: The FRESH framework.

Save the Children's SHN experience in Malawi

Save the Children is one of the leading international non-governmental organizations (INGOs) in the field of SHN. SHN is one of the main program areas of Save the Children's efforts to support marginalized communities with quality education. Implemented in 20 countries across the globe, Save the Children reached nearly 1.5 million with its SHN programs in 2008. Other program areas of Save the Children's education work are early childhood development, basic education and adolescent learning.

In Malawi, Save the Children has served children since 1983, beginning with child-sponsorship programs in 39 government schools in Mangochi district. Over the years it has built a strong partnership with the Government of Malawi Ministries at both national and district levels. It has supported the government through implementing village-based schools, strengthening the quality of education in government schools, and a partnership project to enhance child survival and reproductive health.

In 1994 the Government of Malawi took an important step of introducing Free Primary Education (FPE). With this move, primary school enrollment increased almost by 50% as families who previously could not afford to send their children to school could do so with the introduction of FPE. However, one of the key challenges faced by families who were impoverished was to ensure that their children were sufficiently healthy to learn effectively in school.

A baseline survey in Mangochi district in 1998 and in Balaka district in 2003 found that over 30% of children were infected with bilharzia; in some coastal areas the prevalence was as high as 80%. Over 40% of children were anemic and stunted in both districts. Hygiene conditions in schools were also very poor. Malaria was known to be prevalent in Malawi, particularly in Mangochi where it is endemic. Malawi was also experiencing a generalized AIDS epidemic, making it a concern for the education system [3].

In order to address these problems, in 1998 Save the Children initiated a SHN program, in partnership with the District Health and Education authorities, schools and communities. The program started in 43 primary schools in Mangochi district, and by 2008 – the year Save the Children phased out of both districts – it had expanded to reach a total of 171 schools and 124,000 schoolchildren. The main components of the program were in line with the FRESH framework and comprised of the following activities [3].

- **School-based delivery of health services:** Bilharzia treatment once a year in coastal schools; vitamin A and iron supplementation; pupil treatment kits (PTKs) to treat malaria and other common health problems; screening for vision and hearing, classroom remediation and referral.
- **Safe school environment:** Provision of safe water and sanitation facilities at school and in communities.
- **Promotion of healthy behaviors:** School and community-based health communication activities around HIV/AIDS, bilharzia, malaria, hygiene and nutrition; the promotion of Cool Parent Guides to improve parent-child communication; and teacher peer counseling to promote voluntary testing and counseling amongst the teachers.
- **School and community support:** Training of school and community committees on health and nutrition issues to support all the above activities.

After 10 years of support, Save the Children phased out of Mangochi and Balaka in 2008. The programs endline study showed some impressive gains in children's health and nutritional status. The prevalence of bilharzia among schoolchildren was nearly negligible as compared to a near 30% at the start of the program. There was also a reduction of more than 50% in children who were stunted. More details on the results and lessons learned from Mangochi and Balaka can be found on <www.schoolsandhealth.org>. Save the Children in Malawi have now expanded their SHN program experience by initiating activities in a new impact area in Zomba district.



Mathews Chavunya, HIV/AIDS Officer for Save the Children/Malawi leads a Teacher Peer training on HIV counseling for teachers.

Introduction to the manual

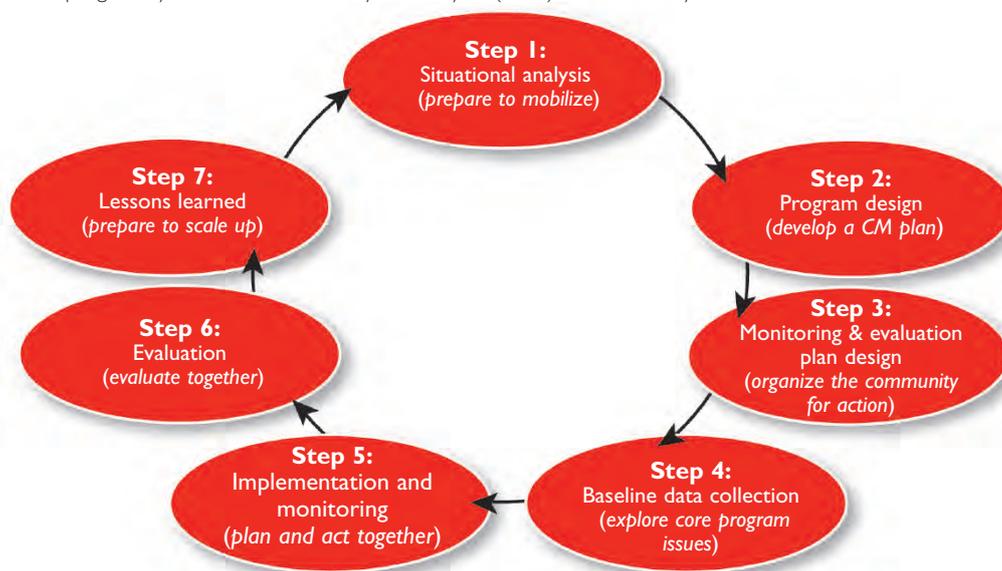
The purpose of this manual is to guide Save the Children staff and its implementing partners in Malawi on how to implement a SHN program in primary schools at district level. The guidance comes from Save the Children's program experience in Mangochi district and is mainly aimed at helping staff involved with the new SHN program in Zomba. In particular, the target audience for this manual is the SHN program manager (at the Save the Children national office) and SHN program officers and assistants at both field and national levels. The manual can be used for reference purposes during program design, planning, implementation, and monitoring, by field staff and program managers.

In 2007, the Government of Malawi launched a national SHN program with financial support from the World Bank. This program was modeled after Save the Children's SHN program in Mangochi and Balaka district. We hope that this manual will assist the government as they continue to implement SHN at the national level.

The manual builds on collective evidence relating to SHN programs and draws on Save the Children's SHN program experience in Malawi. It is structured around Save the Children's recommended program cycle approach used in its child-sponsorship funded programs. Also known as the Common Approach to Sponsorship-Funded Programming (CASP), the cycle includes seven standard steps to planning, monitoring and evaluating activities so that implementation can be continually modified and improved. The steps are: (1) Situation analysis; (2) Program design; (3) Monitoring and evaluation plan design; (4) Baseline data collection; (5) Implementation and monitoring; (6) Evaluation; and (7) Lessons learned. The manual expands on each of these steps by providing guidance on how to implement them, including program tools as well as examples of what was done in the SHN program in Mangochi and Balaka. In particular, Step 5 is most relevant to SHN as it contains practical guidance on how to implement the different SHN interventions. Through each step in the manual there is also guidance on how to mobilize communities and ensure their participation. Community mobilization (CM) is an essential part of programming, necessary for long-term sustainability of activities and their impact once the program phases out. The community action cycle (CAC) is the process through which communities are mobilized. The phases of the CAC, which fit within the CASP, are shown (*in parenthesis*) in Figure 2 below.

Throughout the manual Save the Children's CASP SHN Module, *Design Monitoring and Evaluation (DM&E) Module* [4] and the CASP compendium for community mobilization (*Mobilizing Communities for Education, Health and Social Change* [5]) have been used as a point of cross-reference.

Figure 2: The CASP program cycle and the community action cycle (CAC) for community mobilization.





Step I: Situation analysis

This step summarizes what information to collect prior to designing an SHN program, and how to collect it. Implementers should refer to the Key Questions to Guide a Situational Analysis (Annex A) and the Situation Analysis Summary Tool (Annex C) while conducting a situation analysis. Implementers should also prepare to mobilize communities during this step.

Conduct a situation analysis

A situation analysis must be conducted prior to designing an SHN program in an impact area in the district. It involves collecting, and analyzing information to identify and define key problems that can be addressed by an SHN program. This analysis is different from an impact area selection process that is conducted prior to identifying an impact area. During the selection process, based on a set of criteria, data is collected and analyzed to shortlist potential impact areas [6].

A situation analysis is a more in-depth analysis of the impact area to identify local needs and capacity to implement SHN. It also allows implementers to examine the context (e.g. demography, cultural values, and taboos etc.) of local communities, and to identify partner capacity in SHN programs. Ideally, a situation analysis should be planned and conducted along with Save the Children's other sponsorship funded program areas (i.e. basic education, early childhood development and adolescent development) that are planning to initiate a program alongside SHN.

The key questions that need to be asked in a situation analysis are in Annex A [1] and covers six main areas: 1) health and educational status, 2) availability of SHN services, 3) quality of the school environment, 4) knowledge, attitudes and interest, 5) community support and policy, and 6) Save the Children's capacity. The first five areas correspond to the SHN Results Framework (see Step 2) while the final relates to Save the Children's capacity to implement an SHN program. Only those questions that are relevant to the local context should be selected.

The required information should be gathered via primary and/or secondary data collection:

- **Primary data:** This information is obtained directly, for example, from the community or school. It gives a better understanding of the quality of health services; educational status in the impact area; opportunities; challenges; as well as local beliefs, traditions and taboos. This is however, an expensive method for gathering information.

The methods used for primary data collection include in-depth interviews and focus group discussions. Mapping the community and services help identify local service delivery points (i.e. health clinics, schools, community centers etc.) and local resources. Visits to service delivery points (e.g. schools) help assess the quality and safety of services; and discussion with service providers (e.g. teachers, and nurses) and children help assess their experiences, needs, and interactions between them (e.g. between children and teachers).

Thus, the key sources for primary data are community leaders, headteachers, teachers, experienced staff, service providers, parents and children.

- **Secondary data:** This information is usually gathered from available reports and studies of the local area and can usually be obtained from health and education information systems, national surveys and previous studies reported by either Save the Children or other institutions. Reports from population-based surveys such as the Demographic and Health Surveys (DHS), and from international organizations such as UNICEF, WHO, the United Nations Development Programme (UNDP), the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Bank (via direct contact in-country or website) also provide useful country/regional information. Reports from government agencies such as the Ministries of Education and Health provide national /sub-national data. This method is not as expensive as primary data collection and therefore should be utilized as much as possible before collecting primary data.

Box 1: Sources for primary and secondary data during the situation analysis in Mangochi district

In Malawi, the information for the situation analysis was collected through the following channels:

- **Primary data:** Meetings were arranged with local government, development partners, such as World Vision International, school headteachers and the community leaders to gather information for program development. This included a two-day meeting with government officials from education, health, agriculture and social welfare.
- **Secondary data:** Data was collected from various sources such as the district hospitals, the District Education Office, and from other organizations such as from Save the Children and other non-governmental organizations (NGOs).

After collecting the information, a brief situation analysis report documenting the key findings should be drafted (see Annex B for the results of the situation analysis in Malawi). The Situation Analysis Summary Tool (see Annex C) should then be used to highlight and prioritize the main findings into categories that directly correspond with the intermediate results (IR) of the SHN Results Framework (see Step 2). Also any gaps in the available information should be noted. For example, if the prevalence of parasitic infections among children enrolled in target area schools is not currently available, a note of this on the Summary Tool should be made. If this information is critical and relevant to the program, it may be important to collect it as a part of the baseline data collection and monitoring and evaluation process [4].

Prepare to mobilize the community

Community mobilization is an essential part of program development, planning, implementation, monitoring and evaluation, and it is necessary for long-term sustainability of activities and their impact once the program phases out. It helps communities and schools to participate in the program and take ownership. Save the Children's community mobilization approach is summarized in the field guide *How to Mobilize Communities for Health and Social Change* [7] and in the CASP compendium *Mobilizing Communities for Education, Health and Social Change* [5]. Both documents describe the CAC – a series of steps which should be followed by program staff and/or the community during every stage of the program. They include: *Prepare to mobilize; Organize the community for action; Explore the health issue and set priorities; Plan together; Act together; Evaluate together; and Prepare to scale up.*

The situation analysis is the first opportunity for implementers to mobilize and build a relationship of trust and understanding with communities. Therefore, preparations for mobilizing (phase one) should be initiated at this time. It includes setting up a community mobilization team among program staff; training them in skills such as facilitation; gathering information about the sociocultural aspects of the community; and identifying community resources and constraints. Finally the team should develop a community mobilization plan. This is done during program design (see Step 2).

Step 2: Program design

In this step implementers will create an SHN Results Framework, choose SHN strategies for the program, develop a summary implementation plan, and develop a community mobilization plan. Examples are provided on the strategies chosen (Box 2) and the summary implementation plan developed (Annex E) for the Mangochi SHN program. Implementers will use the Results Framework Tool (Figure 3); Key Strategies Matrix (Annex D); and the Summary Implementation Plan Tool (Annex E) for designing the SHN program.

Once information on the needs and resources of the target community are available from the situation analysis, this information should then be used to design an SHN program. To help design the SHN program, an SHN Results Framework needs to be developed.

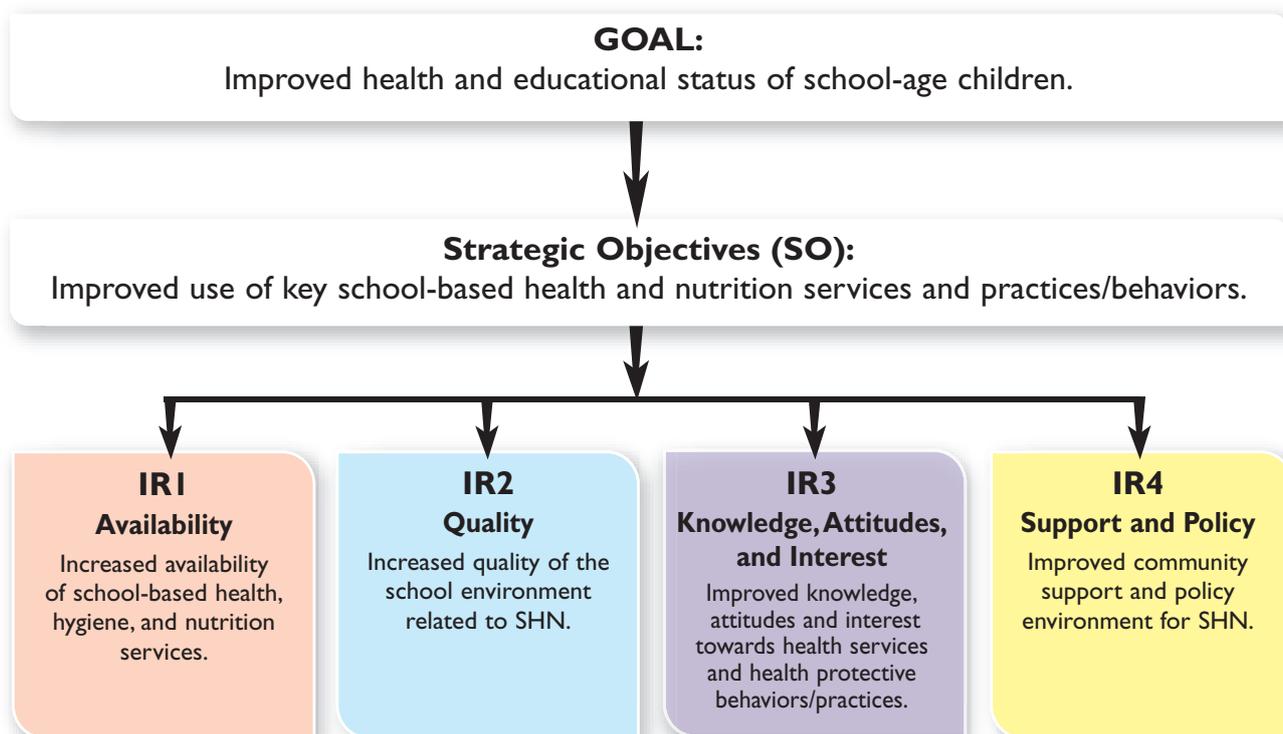
Create an SHN Results Framework

The SHN Results Framework is a diagram which shows how a program will reach its goal of bringing about positive change for children. It shows the links between the desired goal, and the long-term or strategic objectives (SO) needed to reach the goal. It also links the SO with intermediate results (IR) of activities which are necessary to reach the objectives. The four main sections of an SHN Results Framework are:

1. **Goal:** This is usually difficult to measure. The goal represents the “big picture” change the program aspires to achieve.
2. **Strategic Objectives (SO):** These are the changes in behavior that are needed to reach the goal.
3. **Intermediate Results (IR):** These are the results of the activities/strategies that are required to meet the SO.
4. **Indicators:** These are measures to assess progress made towards achieving the goal, SO and IR. The indicators, however, are not displayed in the SHN Results Framework diagram, but are included in the monitoring and evaluation plan (Step 3) under the Results Indicator Planning Tool (see Annex G).

The SHN Results Framework is crucial for designing and monitoring a program. During the design phase, it allows implementers to build consensus on program objectives and activities and to communicate those ideas with partners. During program monitoring and evaluation, it helps assess progress towards achieving the program’s desired results (e.g. IR and SO). The generic SHN Results Framework diagram, also used by the program in Mangochi is displayed in Figure 3. Though this framework is largely consistent across all Save the Children SHN programs, it may be adjusted by local programs depending on needs and priorities on the ground.

Figure 3: Save the Children's Generic SHN Results Framework.



Select SHN strategies

Based on the findings of the situation analysis and the descriptions of the IR in the SHN Results Framework, gaps towards reaching the IR should be identified with a view of potentially addressing them. Following the identification of these gaps, a choice on the type of interventions for the SHN program should be made after careful consideration of requirements for implementation. The program manager should refer to the interventions under the Key Strategies Matrix in Annex D to help with this decision making.

Box 2: Interventions selected and implemented in Mangochi district

Bilharzial/Schistosomiasis: Training on how to administer praziquantel tablets was provided to teachers, Health Surveillance Assistants (HSAs), Primary Education Advisors (PEAs), and School Management Committee (SMC) members. To raise awareness, dispel myths and to encourage out-of-school children and schoolchildren to attend treatment days, radio broadcasts were aired, tapes were played in classrooms, and materials were distributed using a Behavior Change Communication (BCC) approach (billboards, congregation areas, and pamphlets/notes). Treatment days involved various performances to celebrate the day (dramas, poems and songs). A single dose of praziquantel was given based on the child's height using a dose pole. Teachers kept a record of all children treated (name and dosage given). Prizes (sports uniform, clock and world map) were given out to those schools that had 80% of schoolchildren treated and a good percentage of out-of-school children treated.

Micronutrient deficiencies: Vitamin A capsules containing 200,000 IUs were given once a year, a week after bilharzia treatment since intestinal worms are known to affect absorption of fat soluble vitamins. Distributions were always combined with nutrition education.

Vision and hearing screening: Four teachers from each school, who were trained by specialists, performed vision and hearing screening of children. At the start of the program, all children were screened as part of an initial assessment of their hearing and vision capacity. In subsequent years, teachers only tested school entrants and those detected with problems. Mild problems were immediately resolved in school by moving the child to the front of the class, while those with severe problems were referred to the health facility for follow up.

HIV/AIDS prevention: Save the Children followed a behavior change approach to identify and develop an innovative HIV prevention intervention called the Cool Parent Guide. The objective of the CPG was to help parents talk in a 'cool' and calm way to their children about sex and HIV/AIDS before they became sexually active. Ten Cool Parent Guide distributors were chosen in each community, totaling 1,010 distributors within Mangochi district. Distributors received training on how to distribute the Guide and how to counsel parents on the use of the Guide. Distributors visited parents at their homes taking 30 minutes to 1 hour to counsel parents on how to use the Guide.

Malaria: Pupil Treatment Kits (PTKs) were introduced in schools to address all common health problems which can easily be treated at school, including malaria. Approximately 3 teachers per school were trained to dispense medication. Teacher training lasted for 5 days. After training a PTK manual and a PTK treatment poster (to help teachers identify the treatment required for the common health problems) was given to the teachers. A cash register was kept at each school to record community contributions, and records were kept of all children treated, including a monthly report of problems and medications used.

Water and sanitation: This involved four approaches: provision and rehabilitation of safe drinking water points (to ensure all schools had safe drinking water); provision of latrines and hand washing facilities; community capacity building (training community members on how to manage these facilities); and BCC (adopting healthy hygiene behaviors).

Complete a Summary Implementation Plan Tool

Next, implementers should complete a Summary Implementation Plan Tool in order to plan the activities of the program to achieve the IR in the Results Framework. The Summary Implementation Plan should be reviewed and updated on an annual basis.

The standard Summary Implementation Plan Tool or a Detailed Implementation Plan (DIP) used by the Save the Children program in Mangochi (see Annex E) provides the following information under each IR component:

- **Key SHN activities:** Indicates the most important activities required to achieve the IR.
- **Person Responsible:** Indicates who is responsible for the key SHN activities.
- **Others Involved:** Indicates the donors, government ministries, other partners and team members who are also involved in carrying out the key SHN activities.
- **Implementation Timeframes:** Indicates the timeframe when the activities will be implemented within the fiscal year, where some activities may occur throughout the year (e.g. supervision) and some are likely to occur only once a year (e.g. training).
- **Budget Allocated:** Indicates the financial resources available needed to implement the key SHN activities.

In addition to completing the Summary Implementation Plan Tool, it is important to write a program description to describe the rationale and to plan the SHN program. It communicates in narrative form the why, what, who, how, and when of the SHN program. As with the Summary Implementation Plan, the program description should be reviewed by program staff annually and updated to reflect any changes to the SHN program. A suggested outline for the program description is as follows:

- **Rationale:** This would describe the special health needs of children and communities and why the SHN program is being implemented.
- **Results framework:** This would expand on the goal, SO and IR the SHN program plans to achieve, and discusses the challenges related to each IR.
- **Target population:** This section would include an estimate of the number of children and community members to be reached, with a description of the population.
- **Program strategies:** This section would describe the main and supporting activities and overarching strategies to be used to achieve the IR.
- **Budget:** This would include the total amount of funds available for the various SHN program activities for the fiscal year.

Develop a community mobilization plan

During program design, a community mobilization plan should also be developed by program staff. This plan describes in detail how the phases of the CAC will be carried out. This is not a community action plan that will be developed later by the communities themselves.

At a minimum, a typical community mobilization plan should contain the following seven elements:

1. Background information.
2. Program goal (the overall goal of the mobilization effort).
3. Program objectives (the overall objectives of the effort).
4. Community mobilization process (the overall process you and the community will go through to achieve the goal and objectives).
5. Monitoring and evaluation plan.
6. Project management plan.

For further details refer to the field guide *How to Mobilize Communities for Health and Social Change* [7] and the CASP compendium *Mobilizing Communities for Education, Health and Social Change* [5].

Step 3: Monitoring and evaluation plan design

In this step implementers will develop a monitoring and evaluation plan for the SHN program. The SHN Indicator Reference Sheets (Annex F) can be used as a guide for selecting indicators. The Results Indicator Planning Tool records results level indicators (an example from Mangochi is in Annex G). The Process Indicator Tool (Annex H) is used to record target outputs for each activity. This is also the time to organize the community for action.

Designing a monitoring and evaluation plan is essential for planning the assessment of outcomes of an SHN program. The key elements to a monitoring and evaluation plan are SHN indicators and the means of verifying each indicator:

- **Key SHN indicators:** Indicators are measures that quantify or qualify the current status or progress made in a program. Each SHN indicator needs to be specific and measurable; therefore they should be accompanied with a definition and method of calculation.
- **Means of verification for each SHN indicator:** This should include data requirements for each indicator, and where (the source), how (the collection method), when (the frequency) and by whom (the person responsible) it will be collected.

Complete the Results Indicators Planning Tool

Indicators that measure higher level changes, such as in the goal or SO are called results indicators. In Save the Children's child-sponsorship programs, the monitoring and evaluation plan for results indicators is called a Results Indicator Planning Tool (RIPT). This should be completed following careful selection of results indicators (see Annex F). The SHN Indicator Reference Sheets (see Annex F) which contain a menu of SHN indicators can be consulted prior to the selection of indicators. Some of the key questions to ask during the selection process are as follows:

- Will the data be available and will it be easy to analyze?
- Is the indicator relevant to the program design?
- Is the indicator useful for communicating program results?
- Will the indicator help in decision making to improve the program?

The SHN RIPT for Mangochi district can be found in Annex G.

Complete the Process Indicator Tool

Indicators that measure activity level changes in the program are called process indicators. In order to decide on process indicators, the completed Summary Implementation Plan Tool should be reviewed to find the strategies and activities that are most significant to accomplishing the IR. These are to be documented in the first two columns of the Process Indicator Tool (see Annex H), following which simple process indicators that measure the outputs of activities should be identified. The process indicator is noted in the third column, and should be followed by the target planned for the year. As with results indicators, the SHN Indicator Reference Sheets (see Annex F) should be consulted prior to the selection of process indicators.

Organize the Community for Action

It is now time to formally approach the community and begin their involvement in supporting important SHN issues. If the community is approached prior to the baseline survey, community members can be involved and assist in data collection efforts, analysis and dissemination of results. Key to communities getting organized is ensuring those most affected and interested in SHN will participate, have a central role, and will benefit.

Program staff should follow the steps below while organizing a community:

1. Orient the community. Various activities took place in Mangochi to orient stakeholders at both the district and community levels. See Box 3 below for details.
2. Build relationships, trust, credibility and a sense of ownership with the community.
3. Invite community participation.
4. Develop a 'core group' for the community – developing and supporting a core group of community members is one of the most important jobs that will be undertaken by program staff within the CAC. The core group will represent the community and will lead the mobilization effort throughout the SHN program. As a pre-existing structure, the SMC is a good place to look for people who might be interested in becoming core group members. What might be useful in order to ensure active participation and maintain group cohesion is to form an SHN sub-committee within the SMC. Once the group is identified, it is important to develop them into an effective team. For strategies on team building, role of members, and group norms, refer to the field guide *How to Mobilize Communities for Health and Social Change* [7] and the CASP compendium *Mobilizing Communities for Education, Health and Social Change* [5].

Box 3: Community orientation in Mangochi district

In Mangochi district, a District SHN Committee, comprising the District Commissioner and participating ministries at the district, carried out the initial orientation of the larger District Executive Committee (comprising government heads of department at the district level) which it was part of as well as the District Development Committee (comprising traditional authorities and members of parliament). The Committee was also responsible for orienting the Area Development Committee (ADC) (which was comprised of traditional authorities, group village headmen and government extension workers).

Schools and their communities were visited and the goal of the program was shared and discussed. The implementation process was also discussed with the communities including the surveys that were to be carried out.

Community Development Assistants (CDAs) are experts in the community mobilization process. This group was instrumental in organizing and carrying out community orientation in school communities. The CDAs were trained and involved in all SHN activities. They mainly helped to raise awareness on program issues, and empowered communities to take an active role in implementing SHN activities. They also helped to develop leadership skills in different committees that took part in SHN activities.

Step 4: Baseline data collection

In this step implementers collect and report baseline data, as well as with the community core group explore key program issues. An example (Box 4) is provided on the baseline data collected in Mangochi. Implementers will use the RIPT in Step 3 (Annex G) to identify the sources and tools to collect the baseline data.

Baseline data are referred to the first measures of the indicators prior to the implementation of the SHN program. The baseline data need to be accurate, and the methods and tools used for collecting the information need to be well documented as these same methods and tools will need to be applied to collect data in future. Baseline data are important because they:

- Identify and/or confirm the health problems of schoolchildren in the local area.
- Determine the coverage of services prior to the SHN program.
- Confirm the interventions needed for the SHN program.
- Work as a basis for monitoring and evaluating the effectiveness of the SHN initiative, as they are a regular point of comparison and help to examine the effect of the program.

Collect baseline data

As a first step, the completed RIPT and Process Indicator Tool (see Step 3, Annexes G and H) should be used to identify sources and tools to collect baseline data. For data that can be gathered during program activities, such as for the indicator percentage of pupils receiving vitamin A, data collection forms should be designed and used at baseline and during the future program activities. For sample data collection forms and analysis guidance, refer to *Monitoring School Health and Nutrition Programs: Guidelines for program managers* [8].

For data that need to be gathered less frequently (i.e. 2 years or more) from the population, a method of randomly sampling the population should be determined. For this, assistance from Save the Children's national or regional monitoring and evaluation advisors and home office technical support staff should be sought. The methodology applied comprises of:

- Determining the research design for the overall program, namely whether/how a comparison group should be used to strengthen the rigor of the results.
- Determining the sample size of schoolchildren to be surveyed.

Refer to the *Evaluation Approach to Sponsorship Programs* [9] for general principles on doing a baseline survey.

The following data and data collection methods should be considered for an SHN baseline survey:

- **Anthropometric data:** Measurements of body weight, height and mid-upper arm circumferences to assess the percentage of children that are malnourished (stunted, underweight and with a low Body Mass Index [BMI] for age).
- **Hemoglobin (Hb) levels:** Blood samples by finger pricks to measure Hb concentration, to assess the percentage of children who are anemic.

- **Iodized salt tests:** Salt samples to measure the prevalence of iodized salt.
- **Vitamin A deficiency:** Eye exams to assess presence of clinical signs of vitamin A deficiency e.g. Bitot's spots. This must be carried out by a trained ophthalmologist.
- **Iodine deficiency:** Palpation of the goiter. This must be carried out by a trained person.
- **Parasitic infections:** Urine samples for the presence of blood and to count the number of eggs for bilharzia. Stool samples to count the number and types of intestinal worms found.
- **Physical examinations:** For any other signs of ill health.
- **Child interviews:** Individual interviews with children to assess their Knowledge, Attitude, and Practice (KAP) of key health practices.
- **School observation:** Observation of the school environment, assessment of the presence and quality of water and sanitation facilities, and the overall safety of the school.
- **School Director and SMC interview:** Interviews with the School Director and SMC members to assess the school and SMC functionality, awareness of SHN issues, and key challenges.
- **Education data:** Review of educational records to collect education statistics (such as enrollment, drop out, repetition rates, and exam grades).

As with the situational analysis, the baseline survey should be planned and conducted along with Save the Children's other program areas. A report should be written following baseline data collection. The layout would comprise of:

- **Introduction:** A summary description of the planned program.
- **Methodology:** A description of the overall evaluation approach, how the data was collected, the sampling method, and the tools applied to generate the results.
- **Results Indicator Planning Tool (RIPT):** The RIPT can be annexed to show data sources and how indicators were calculated.
- **Findings:** A detailed description of the results presented in tables showing results by sex, age group, and geographical area. Include means and percentages with standard deviations.
- **Conclusions and recommendations:** The interpretation of the results and recommendations for future programming.

The results from the baseline data collection in Mangochi district is summarized in Box 4.

Box 4: Summary of the baseline survey report for the SHN program in Mangochi district

Methodology

- **Schools:** Mangochi district was divided into 2 environmental zones: coastal and upland. Six schools (3 intervention and 3 control groups) were randomly selected within each zone.
- **Subjects:** One hundred schoolchildren were randomly selected in each of the 12 schools (100 x 12 schools = 1,200 schoolchildren). Equal number of boys and girls were selected (25 boys and 25 girls from each grade/level).
- **Community and survey preparation:** Community sensitization was conducted in each school. An advance team visited the schools a day before the survey to prepare communities for the survey which was conducted the following day. A research team visited the school on the planned day of the survey.

Results

- **Anthropometric data:** Overall 47% of pupils were stunted and 40% were underweight. A higher percentage of Standard 3 boys in the upland zone (low socioeconomic status) were stunted and underweight.
- **Hb levels:** Overall 40% of the children examined were anemic. Anemia was more prevalent in children 12 years and older. There was also a low mean Hb level in children with bilharzia.
- **Nutritional behavior and knowledge:** A 24 hour nutrition recall revealed there was a need to increase children's consumption of nutrient and protein rich foods. Around 63% had dark green leafy vegetables, 50% had yellow, orange fruits and vegetables, and 47% had a source of protein (i.e. meat, chicken, fish, or eggs) the previous day. The survey also revealed that more education was needed on specific micronutrients. Around 60% had heard of vitamin A, 51% heard of iodine (73% were salt positive for iodine), and 13% had heard of iron.
- **Parasitic infections:** Overall 85% of the children in the survey had heard of bilharzia. Whilst the overall prevalence for bilharzia was 36%, the prevalence in some coastal schools was found to be as high as 87% [10].
- **Physical examination:** Almost 1% of children were identified with Bitot's spots during physical examination which signified that there were high levels of vitamin A deficiency.
- **Water and sanitation:** The baseline survey in Mangochi found that only 42% of schools had access to clean water (boreholes) and none of them had hand washing facilities. Although most schools had latrines, many were standard pit latrines rather than the recommended ventilated improved pit latrines and only 54% of schools had separate facilities for girls [10-11].
- **Sexual activity:** The mean age of sexual initiation was extremely young, 12.8 years overall, with 12.4 years for boys and 13.4 years for girls. The mean number of partners was 4.

Support communities to explore SHN program issues

This is the next phase of the CAC. It aims to help community members explore their current knowledge, beliefs, and practices related to the SHN program issue(s), to learn from each others' experiences and the perspectives of the broader community. Program staff should undertake the following steps with the community:

1. Explore the SHN program issue first with the community core group.
2. Explore the SHN program issue with both the community core group and with the broader community.
3. Analyze the information.
4. Identify priority SHN program issues.

There are many types of participatory research tools and methods that can be used with the communities to examine issues around the SHN program. For more information refer to the field guide *How to Mobilize Communities for Health and Social Change* [7] and the CASP compendium *Mobilizing Communities for Education, Health and Social Change* [5].

Step 5: Implementation and monitoring

This step explains the activities required for program implementation and monitoring. Tools to assist with implementing the various SHN interventions are included (Annexes J to O). Examples (Boxes 5 to 8 and Annex I) show the Mangochi experience on program implementation.

Program implementation

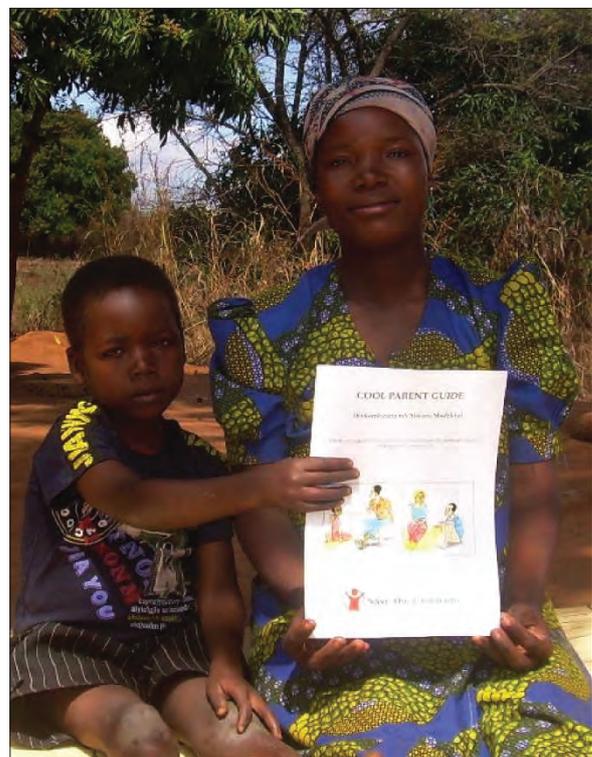
In order to successfully implement an SHN program, staff must carry out the following:

1. Support the creation of a national SHN policy.
2. Support the formation of SHN committees (at both the national and district levels).
3. Support the community to plan and act together.
4. Build capacity of all stakeholders involved in program delivery on its implementation.

These activities will support the implementation of the activities under each of the four IR.

Support the creation of a national SHN policy

As an NGO, Save the Children's role is to advocate and facilitate the development of a national SHN policy that can inform SHN programs throughout the country. Thus, Save the Children's SHN program should present evidence from its SHN situation analysis, baseline survey, and monitoring and evaluation exercise, in order to inform policy and for the development of a long-term strategic plan. The SHN program manager should also participate during policy development and review workshops in order to voice and address the concerns of communities, NGOs and other district level implementers. Once the national SHN policy and the strategic plan is developed, Save the Children should support the district level to disseminate and implement the program at both the district and school levels. This must be done in partnership with local authorities as per institutional mechanisms that have been put in place to implement the policy.



Mrs Salaf and her family participated in Save the Children's SHN program in Mangochi

Box 5: Creation of the National SHN Policy for Malawi

In Malawi, a group of consultants with support from the World Bank helped draft a National SHN policy as early as 1998. Save the Children worked with the Ministry of Education consultants to draft the national SHN policy; identify interventions to be implemented; and propose an institutional framework within which the policy would operate.

Additionally, Save the Children facilitated a workshop to review the draft document with key technical officers from five government ministries namely: the Ministries of Education; Health; Agriculture; Women, Youth and Community Services; and the National Economic Commission, with donors, and NGOs. Every effort was made by Save the Children to keep the Malawian Government informed about its SHN program.

Support the formation of SHN committees

Save the Children's SHN program should also support the development of a national SHN steering committee. This committee would typically comprise of various national ministries and development partners. The role and objectives of the committee may include:

1. Advocating for and coordinating the development of a national SHN strategy.
2. Providing skills and expertise to guide SHN program development and implementation by different partners across the country.
3. To assess the performance and findings of SHN programs and ensure that results are fed back into policy and national SHN program development.

At the decentralized level, a district SHN committee should also be formed comprising all district level partners involved and interested in SHN. The role of the committee and its members should be defined and agreed upon by the committee. It may include the following:

1. Participate in the design, planning, implementation, monitoring and evaluation of the SHN program.
2. Develop and guide procedures and practices and ensure that they are aligned with program goals and government policy.
3. Safeguard the welfare of schoolchildren.
4. Promote SHN amongst district level partners and communities and ensure the goal, rationale and main elements of SHN are clearly understood.
5. Discuss challenges and help resolve them.
6. Ensure that the national SHN steering committee is regularly informed of the progress of the program.
7. Create and promote partnerships with other NGOs concerned with the health and education of children.

Box 6: SHN committees that were formed in Malawi

The National SHN Steering Committee in Malawi was established and was served by representatives from the following sectors:

- **The Ministry of Education:** As the lead ministry responsible for education policy, teachers, curriculum development, health education, and the welfare of schoolchildren.
- **The Ministry of Health and Population:** As the ministry which can provide technical skills to support health services and health education.
- **The Ministry of Women, Youth, and Community Services:** As the ministry responsible for young people's welfare and development and with skills in community mobilization.
- **The Department of Local Government and Rural Development:** As the ministry responsible for school buildings, for school finances, and also with skills in community mobilization.
- **The Ministry of Water:** As the ministry responsible for adding the water component to the SHN package.
- **The Ministry of Agriculture:** As the ministry with the skills, staff, and outreach to promote school gardens and best agricultural practices.
- **The Ministry of Planning and/or a representative of the Office of the President:** As the ministry to ensure that the needs of the SHN program are considered at the highest levels in the government.

Save the Children worked with the District Commissioner and the participating ministries to constitute the District SHN Committee within the existing structure of the District Executive Committee. The responsibility of the SHN sub-committee was to develop the SHN program in Mangochi district.

Due to the frequent change of people in positions, the operations of the two committees (national and district) became weak during the lifespan of the program. It was very difficult to hold meetings but Save the Children continued to share their products with the Ministry of Education.

Support the community to plan and act together

In this next phase of the CAC, program staff should support the community core group to develop a community action plan to address the priority SHN program issues identified in Step 4. The action plans should be from the community's point of view and the role they will play in the overall SHN program. The key community SNH issues discovered during the explore phase and the priorities set should be the foundation for the community core group action plan. The development of an action plan can be divided into three sub-steps, first, determining who will be involved in the planning session and their roles and responsibilities; second, designing the planning process; and third, facilitating the planning session to create an action plan. Once the plan is ready, the community mobilization team must strengthen the capacity of communities to implement their community action plans. Experience has found that in addition to the important SHN capacities, community core groups often need program management skills to carry out their CAC. Such skills as effective leadership, resource management, planning, monitoring, and conflict resolution may be needed. Carrying out a capacity assessment of the community core groups will help determine their needs.

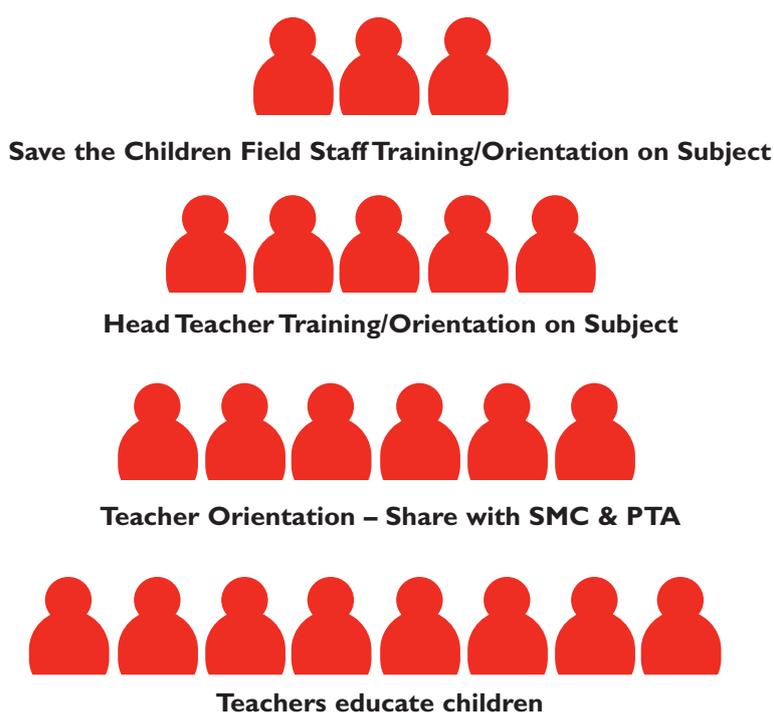
For details refer to the field guide *How to Mobilize Communities for Health and Social Change* [7] and the CASP compendium *Mobilizing Communities for Education, Health and Social Change* [5].

Build capacity of all stakeholders involved in program delivery

A key first step to building capacity of stakeholders involved in program delivery is for the SHN program manager to develop a training tree to describe how stakeholders at each level will be oriented and trained on the program (see Figure 4 for an example). This tree should be based on the identified training needs at each level (country office, district and school).

Once the tree has been developed, details of the training, such as materials required (e.g. training manual, health education materials, and monitoring forms etc.) and resource persons, as well as a capacity building plan/schedule should be worked out.

Figure 4: Pictorial depiction of a possible training tree.



Box 7: Capacity building in the SHN program in Mangochi district

Training of stakeholders has been an important component of the program to build capacity to deliver health and nutrition services; and health education.

Training of trainers: Initially teachers, PEAs, HSAs, health coordinators and some community members were trained as trainers on various health and nutrition concerns and SHN activities during a one-week residential training course organized by Save the Children. This group was responsible for supporting program implementers in the schools and monitoring SHN activities.

Training of schoolteachers and community members: Trainers conducted intervention-specific school-based training of teachers. To avoid confusion, information for each intervention was taught separately.

Wherever feasible, the school-based training included all teachers in schools (though only few teachers were trained on PTKs). Almost all teachers in schools were reached and this reduced implementation time during mass treatments for bilharzia/schistosomiasis, vitamin A and iron supplementation. Schools with high enrollments (i.e. over 2,500 schoolchildren) were able to administer mass treatments to all children in a day. This led to minimal disturbance of classes. The training was provided a few days before activity implementation in order to ensure the information was still fresh in the minds of teachers.

Most schools in rural areas had very few teachers and this led to the SHN program training community members (those who were able to read and write) to assist the teachers. Trained community members assisted teachers in the distribution of: bilharzia treatment to in-school and out-of-school children; distribution of the Cool Parent Guide to parents; implementation of safe school committees; and monitoring SHN activities.

Development of program materials

Save the Children developed training manuals (booklets) to describe how implementers should carry out different interventions. For example, for deworming the manual explained how to use a dose pole to administer the drug praziquantel. After the first training, the manuals were reviewed to see what worked well, and areas that were deemed lacking were modified.

Implement the SHN program strategies

Each of the four IR sub-sections below introduces individual SHN strategies and explains how it should be implemented. For details on the strategies implemented by the SHN program in Mangochi, refer to Annex I.

IR1: Availability of SHN services

School-based health and nutrition services are simple and easy to administer by the teachers. The typical and most cost-effective services include mass deworming to treat worm infections and micronutrient supplementation (vitamin A and iron) to improve children's health and nutritional status. It is inexpensive and has an immediate impact on children's health and nutritional status and consequently their ability to concentrate and learn in school. Micronutrient supplementation should be provided a week or so after deworming so that intestinal absorption of nutrients is effective. Usually vitamin A supplementation is provided a week after deworming. This is followed by weekly iron supplementation.

Other services that are provided through schools include vision and hearing screening and first aid kits (FAKs), also called PTKs in Malawi.

Iron supplementation

Iron deficiency anemia (IDA) is the most common nutritional deficiency in the world and school-age children is one of the groups most severely affected. IDA causes fatigue, low productivity and apathy. Among school-age children it results in poor physical and cognitive development and inevitably poor academic performance. The most common causes of anemia are poor diet and parasitic infections such as bilharzia/schistosomiasis, hookworm and malaria. Other nutritional deficiencies, such as vitamin A deficiency may also play a role.

Despite the great social and economic cost of iron deficiency, little progress has been made towards its global elimination. Most community-based supplementation has been largely unsuccessful because of operational issues and low compliance. Schools are now increasingly seen as a more effective system through which to deliver iron supplements because the supplementation can be supervised by teachers; it is as effective in increasing Hb as daily supplements; and has fewer side effects therefore increasing compliance. On average, weekly supplementation is provided over a 12 to 16 week period (3 to 4 months) in a year. Besides supplementation, teachers also educate children about foods that have the highest and most absorbable iron content. These include red meat and liver. Iron can also be found in green leafy vegetables, banana, beans, papaya, lentils, wheat, and molasses.

Vitamin A supplementation

Vitamin A deficiency among school-age children is a public health concern in many low income countries. Around 85 million school-age children or 7% of the school-age population are vitamin A deficient. Due to their lower immunity, those with vitamin A deficiency are at risk of infections. In the long-term, vitamin A deficiency can cause night blindness, Bitot's spots in the eye, corneal ulcer followed by blindness, roughness of skin, and an interruption of physical growth due to malnutrition.



A teacher counting the number of tablets needed for supplementation.

The provision of adequate amounts of vitamin A in the diet and/or through supplementation reduces child mortality related to vitamin A deficiency and susceptibility to diarrhea and other infectious diseases. Foods containing vitamin A include green leafy vegetables, yellow fruits, small fish, tomatoes, bananas, carrots, milk, butter, egg, and liver. As with iron, meat products have the highest amounts of vitamin A. Supplementation is usually carried out twice yearly, 6 months apart. Care should be taken to not extend vitamin A supplementation to pubescent girls who might be pregnant, as a high dose of vitamin A can damage the fetus.

Deworming

Worms infect more than a third of the world's population, with the most intense infections in children and the poor. There are several types of worms, for example roundworm, hookworm, whipworm (collectively called soil-transmitted helminths – STH), as well as urinary and intestinal schistosomes which cause bilharzia/schistosomiasis. Depending on the type of worm, the parasite enters the human body through the mouth or by penetrating the skin of a person who enters an infested water body or soil. The parasite then migrates to the bladder or intestine, depending on the species. The symptoms of infection include abdominal discomfort, diarrhea, loss of appetite, blood in stools or urine, and a swollen abdomen. The worms affect the absorption of nutrients needed for growth and cause internal bleeding, which leads to anemia and malnutrition in children. This makes the children too tired to attend school, or concentrate and perform in class and in the long-term the infection could affect their mental development, and physical growth. Other long-term effects seen in adults are liver fibrosis, intestinal damage and bladder cancer. In Malawi, bilharzia or urinary schistosomiasis is a widespread problem, especially around Lake Malawi. The passing of blood in urine is the most common symptom of urinary schistosomiasis, but since it is so common in the local area, it is usually ignored by children.

Though a serious health problem, the prevention and control of worms is extremely simple, safe and inexpensive. As per WHO recommendations [12], a mass treatment method is used to treat for both schistosomiasis and STH. This is because mass treatment is more cost-effective than individual diagnosis and treatment and the drugs for treatment are safe even when taken by uninfected children. See Annex J for the method on how to conduct a rapid assessment and plan for mass deworming. The frequency and target groups for mass deworming are based on the prevalence of worms, as shown in the decision charts in Annex J.

The most commonly used drugs for STH are albendazole (400mg) and mebendazole (500mg). Both are administered as a single tablet to all children, regardless of size or age, and cost as little as 0.02 US dollars (3 Malawian Kwacha – MK). For schistosomiasis, the drug of choice is praziquantel (600mg) and costs on average 0.20 US dollar (MK30) per treatment. The number of tablets required per treatment depends on the size of the child determined by either using a weighing scale or an inexpensive “dose pole” (see Annex K for further details).

How to implement:

1. First, the SHN team should determine the number of tablets required by each school in the impact area. The number would depend on the number of enrolled children in the school for that year (N_e), the number of times treatment takes place in the year (T), and the number of tablets per treatment (f). Therefore the number of tablets required would be **$N_e \times T \times f$** .

Where out-of-school children are also reached, such as in deworming (see Annex J for details), the total number of tablets required will be **$(N_e + N_o) \times T \times f$** (where N_o is the number of out-of-school children). As mentioned earlier, the total number of tablets per treatment and the frequency of treatments per year for worms depends on their prevalence and size of the child: for **STH $T = 1$ or 2 and $f = 1$** , and for **bilharzia/schistosomiasis $T = 1/2$ or 1 and $f = 1$ to 5** .

For iron, generally two 200mg tablets (f) are provided to each child on two separate days in a week for about 16 weeks (T) in a year. Therefore the total number of tablets will be **$N_e \times 16 \times 2$** .

For vitamin A supplementation, one vitamin A capsule of 200,000 IU (f) is required twice yearly (T), 6 months apart. Therefore, the total number of tablets will be **$(N_e + N_o) \times 2 \times 1$** .

2. The tablets should be sourced either from the Ministry of Health, a local donor or a pharmaceutical company, or in case the SHN team does not have the funds, it should contact its SHN technical support office in Washington D.C. for assistance.

3. Once received, the tablets should be distributed to the headteachers in the primary schools in the impact area, based on their requirement. If the tablets were sourced by the national office, then the tablets should be distributed to the field office(s) for onward distribution to schools. The national and field offices, as well as schools should maintain inventories of the tablets received and distributed with information such as name, manufacturer; dosage, manufacture and expiry date, number of tablets received/distributed/left in stock, and source of donation/purchase.

4. Headteachers of schools should have already been oriented on the usage of the tablets (see Annex L) and on how to organize a school level distribution as per the capacity building plan/schedule. Similarly the teachers in the school should have already been trained by their headteachers during their SMC or other meetings on how to conduct a distribution session.

5. On the day of the distribution the class teacher must first provide health education on the tablets to the children using relevant health education materials provided by the program. Only then should the teacher provide the tablet(s) to each child with a cup of water. Each child should be observed consuming the tablet. The teacher should also maintain a register on the tablets distributed to each child.

Vision screening

Vision problems can significantly affect a child's ability to participate and learn in school given that 75% to 90% of classroom learning occurs using visual aids. In particular, uncorrected refractive errors, which are easily diagnosed and can be inexpensively corrected with spectacles, are the most important cause of vision impairment in school-age children.

Vision screening is the process whereby a trained teacher checks the eyesight of schoolchildren using a vision chart to identify abnormal visual acuity and other eye problems which may be preventing children from seeing the blackboard and following classes. There are two types of vision charts which can be used: E chart or Snellen's chart. The E chart is a chart that contains rows of the letter E, where the child has to specify which way the limbs of the letter E are facing (up, down, left or right). This chart is used for those children who are not yet able to read the alphabet. The Snellen's chart is similar but contains block letters on eleven lines, where the first line is one large letter and the remaining lines contain letters that decrease in size from the top line to the bottom line. The child covers one eye with one hand and reads out the letters on each line starting from the top until the child can no longer read clearly the letters. The line on which the child is unable to read the letter determines their visual acuity in that eye. This process is repeated for the other eye. With normal visual acuity i.e. "6/6" or "20/20" vision" a child should be able to clearly read letters above the 6th row of the E chart and above the 8th row of the Snellen's chart (see Annex M) and differentiate the blank spaces from a distance of 6 meters or 20 feet. Vision screening should usually take place once a year.

How to implement:

1. First, all schoolteachers, both at primary and pre-school levels, should be trained on how to use the E chart and Snellen's chart and conduct school-wide vision screening.
2. Next, teachers should develop vision screening plans for the school. This includes selecting grades to be screened, setting up a screening schedule, preparing the materials required for screening and recording, and contacting the local eye specialist for student referrals.
3. Prior to vision screening sessions, teachers should inform children about the purpose of vision screening, how it will be conducted, what problems may be identified and what will happen if a problem is found.
4. Teachers should then test the children's vision using the standard steps outlined in Annex M, and record all children identified as having vision problems using a prescribed form. All children identified with vision problems should then be referred to an eye specialist at selected sites.
5. If possible Save the Children, in coordination with a partner organization, support necessary medical treatment or, eyeglasses. SMCs should take an active role in supporting teachers and parents to ensure compliance with the treatment prescribed for the child at school.

Hearing screening

Children who have a hearing impairment can have a distinct disadvantage, developmentally and educationally, over their peers. Hearing screening is therefore conducted for primary school entrants so that any suspected hearing loss can be diagnosed and corrected as soon as possible. Where hearing loss is permanent, the child can be taught techniques for healthy learning and social interaction. Some of the common causes of hearing impairment are:

- **Glue ear:** When the middle ear fills with thick glue-like mucus due to an ear infection. This may affect hearing (in varying degrees) when sounds cannot be transmitted to the inner ear.



A young boy during a hearing assessment.

- **Infectious diseases:** Complications of mumps, measles and meningitis can affect a child's hearing in the long-term. A congenital cytomegalovirus infection could be another cause. Children may not have symptoms at birth, but may develop progressive hearing loss during early childhood between 1 to 6 years of age.
- **Ear wax:** A build-up of wax in one or both ears can affect a child's hearing when it occludes the ear canal completely.
- **Damage to the inner ear and hearing nerves.** This can be caused by a number of things including a head injury and exposure to very loud noise.

How to implement:

1. As always, teachers should first be trained on how to conduct hearing screening for primary school entrants.
2. The screening can be done either with or without an audiometer, depending on resources available. The teacher should conduct the test in a quiet room, without any interruptions.

An audiometer is a machine which produces sounds at various volumes and frequencies. During the test, the child will listen to the sounds through headphones and be asked to respond when they hear a sound by raising their hand. The teacher will be able to determine what level of sound the child is able to hear.

Alternatively, a speech perception test can be conducted. In this, a child's ability to hear words without using any visual information is tested. The words may be played through headphones or a speaker, or spoken by the teacher standing behind the child at a set distance. The teacher could make different sounds such as sand being shaken in a bottle, a whisper or a tone.

3. If the child fails either of the tests, even on a repeated attempt, they should be noted for further support in school and referral to the nearest health center for further testing. A simple measure to help a child with hearing impairment is to place them at the front of the class.

First aid kits or pupil treatment kits

Many health problems that children encounter at school, such as minor injuries, headache or diarrhea, can be treated at school with a first aid kit or pupil treatment kit (FAK/PTK). The purpose of the FAK/PTK is to provide immediate treatment to children at school to avoid them having to walk long distances to a health center and missing school, or to be left untreated. It is also a way to identify more serious health problems which should be referred to a health professional and which otherwise may be ignored until the point where the health problem becomes more serious.

In Mangochi the health concerns addressed using FAKs/PTKs were eye infections (with tetracycline), general aches and pains (with paracetamol), wounds (with bandages, gauze, and antiseptics) and diarrhea (with oral rehydration solution). Additionally, since malaria-specific mortality rate in Mangochi was particularly high for Malawi (0.42/1000), Fansidar (sulfadoxine-pyrimethamine-SP) for presumptive treatment of malaria was included in the FAKs/PTKs. This continued till the new drugs based on Artemisinin Combination Therapy (ACT) were introduced in Malawi.

How to implement:

1. First, SHN staff should organize first aid training for primary school headteachers and a class teacher (if resources permit) at the district or sub-district level. Ideally the local government health officials should conduct the training and it should be about one day long. SHN staff should discuss the training content with the health officials beforehand in order to ensure all local health concerns are included in the training.

2. The program should provide a FAK/PTK to each school in order to initiate first aid activities. The content of the kit will depend on the local health concerns and the number of children enrolled in the school. A booklet with general information on the content, its usage, and means for replenishment should be included in the kit. A register to record the contents of the kit and its usage should be kept along with the FAK/PTK. The kit should be placed in a part of the school which is secure, yet easily accessible, and away from direct sunlight and humidity. A large clearly visible first aid sign (such as a red or green cross) should be present at/near the first aid station.

3. Once teachers are trained in first aid, and the school has a kit to provide services, teachers should inform the students about the availability of first aid at the school premises and the location of the first aid station.

4. While providing first aid and dispensing medicines, teachers should maintain good hand hygiene (by hand washing with soap). They should update the register every time they use the contents of the FAK/PTK.

5. The SMC should be responsible for raising funds for replenishing the FAK/PTK and for refilling supplies. Annex N has a list of typical items in a FAK/PTK. Every time the FAK/PTK is replenished, the register should be updated. In addition, a cash register should be kept to record community contributions and expenditures on FAK/PTK supplies.

IR2: Quality of the school environment

The quality of the school environment depends on the availability of safe water for drinking and hand washing, and access to clean sanitation and hand washing facilities. In addition, a safe school environment should be clean, secure and free from all risks or dangers, and conducive to learning (see Box 8).



Separate, ventilated latrines with doors and hand washing facilities nearby, not only promote good hygiene but also enable girls to consistently attend school.

Box 8: Definition of safe drinking water, sanitary latrine and hand washing facilities

Safe drinking water is water which does not contain pathogens or germs harmful to the human body and which does not contain above the recommended dose of iron, metal or chemical elements such as arsenic. Safe water should be tasteless, colorless and odorless.

A **sanitary latrine** is a latrine where the human excrement is contained in a closed space in such a way that insects, animal, birds, water or the open air cannot come into contact with the excrement by any means. Germs and bad smells cannot spread through the excrement and contaminate the environment. The sanitary latrine helps to keep the environment safe and is the basis for a sustainable solution to the threat of water-related diseases. There should be separate child-friendly latrines for girls and boys and separate facilities for teachers in schools.

Appropriate **hand washing** facilities are those that are easily accessible (by being of suitable dimensions for children); allow appropriate drainage or disposal of water so that it does not lead to stagnation; are accessible to clean water; and include soap, ash or a similar cleansing agent. The facilities should be placed close to latrines since hand washing is most important after defecation.

Together, the provision of safe drinking water, adequate hand washing facilities and a sanitary latrine can prevent viral diseases, such as hepatitis A; bacterial diseases, such as typhoid and cholera; diarrheas; and worm infections, such as STH and schistosomiasis.

How to implement:

1. Every school should have access to safe water which is free of pathogens and contamination for drinking and hand washing purposes. In order to ensure water is safe, the quality of water should be monitored periodically (e.g. once per year) with the assistance of the local environmental health authority. For details on treatment of drinking water to ensure microbiological safety, see Annex O.
2. Sufficient water should be available at all times for drinking, hand washing and personal hygiene. Assuming primary schools are day schools, the amount of water recommended is 5 liters per person per day for all schoolchildren and staff. Additional quantities of water will be required for sanitation, depending on the type of toilet used locally. For pour-flush toilets, the quantity recommended is 1.5 liters to 3 liters per person per day, along with 1 liter to 2 liters per person per day for anal cleansing.
3. Reliable water points for both hand washing and for drinking water should be available in the school. Drinking water should be provided at clearly marked points, separately from water for hand washing and other purposes, even if it is from the same supply. Simple and low cost hand washing points can be made in various ways, including the following [13].
 - A pitcher of water and a basin (one person can pour the water for another to wash their hands; the waste water falls into the basin).
 - A small tank (e.g. an oil drum) fitted with a tap, set on a stand and filled using a bucket, with a small soakaway or a basin under the tap to catch the waste water.

- A “tippy-tap” made from a hollow gourd or plastic bottle that is hung on a rope and that pours a small stream of water when it is tipped.

4. Hygiene education should be a key part of teacher training and refresher training should be carried out regularly to sustain knowledge and awareness. Hygiene education, using a variety of participatory and other learning methods, should enable schoolchildren to develop the knowledge and skills with respect to water, sanitation and hygiene [14]. Hand washing is the most important hygiene behavior to promote, especially before eating and after using the toilet; younger schoolchildren often require help with this. Since schoolchildren are often heavily influenced by teachers who are seen as positive role models, they should be consistently demonstrating appropriate hygiene behaviors.

5. Sufficient numbers of toilets should be available – one per 25 girls and one for female staff; one toilet plus one urinal per 50 boys, and one for male staff. Toilets should be within school premises and easily accessible to all, including staff and children with disabilities. Male and female toilets should be separated. Toilets should also be appropriate to the local culture, age and gender, and providing privacy and security, as well as being accompanied by near by hand washing facilities. A cleaning and maintenance routine should be in operation to ensure that clean and functioning toilets are available at all times.

6. Appropriate facilities should be provided for menstrual hygiene for female teachers and older girls. Depending on the type of sanitary protection used and cultural practices, facilities should include things such as a private place to wash and dry cloths, waste baskets to throw away sanitary pads, and water inside toilet cubicles for cleaning. This is most important to encourage teachers and older girls to attend school, even when they are menstruating. Toilets should be separate and provide total privacy.

7. Other measures to keep the school environment safe and secure should also be followed. These may include reducing the number of disease vectors (such as mosquitoes and flies) in the school and managing solid waste disposal. The program staff should ensure there are links with the local health and administration officials for assistance on these.

8. On the whole, a healthy school environment should be promoted through the application of clear regulations and the participation of staff, schoolchildren and parents in planning and managing facilities and the school surrounding. The SMC should be given the task of ensuring facilities are installed and for regular maintenance. Schoolchildren can be given the task of carrying out activities such as cleaning toilets, carrying water within the school, and collecting solid waste. These activities should be organized fairly and transparently (e.g. with a publicly displayed roster that does not discriminate between boys and girls, or between schoolchildren from particular social or ethnic groups), within the limits of schoolchildren’s age and ability. These activities however, should never be used as a form of punishment.

IR3: Knowledge, attitudes, and interest

Skills-based health education is a process of sharing health-specific content in such a way as to increase knowledge, attitudes, and practices and thereby changing individual behavior. Classroom-based health education sessions are designed to incorporate health information and messages for children by subject and in a way that forms part of their existing grade-specific curricula. They help schoolchildren to learn more about personal hygiene, safe water and sanitation, food and nutrition, first aid treatment and HIV/AIDS. Health education sessions should help children to change their behavior regarding personal hygiene and food habits and also in protecting themselves from diseases such as water-borne diseases, worm infestations, malaria, HIV/AIDS and other common health problems.

In addition to in-class health education, peer education should also take place for students in senior classes in primary schools. Peer education involves students (peers) in peer groups demonstrating healthy practices among themselves in order to support healthy behaviors in the school and in the community. With this approach students share and learn from each other and also share their knowledge and awareness with community members. They thus, create a bridging relationship between schools and the community. Peer education also helps students develop leadership skills.

How to implement:

1. Program staff, with government support, need to train teachers prior to them conducting health education sessions. Female teachers should also be trained on menstrual management, for teaching sessions with girl students on the onset of puberty; this should take place at least twice a year. Staff should also train nominated teachers as peer educators in order to facilitate and support peer groups.

2. Health education sessions should be a part of class routines for all classes. The routine should be fixed by the teachers based on what fits best with the teaching schedule and curriculum. Teachers will need to conduct health education sessions for every class as per the adopted schedule and curriculum. Headteachers of each school will need to ensure regular health education sessions by the use of a tracking chart. The health education content may also be examinable depending on government regulations, especially for the school-leaving grade.

3. Teachers should also conduct health education sessions before events such as deworming, vitamin A and iron supplementation, vision screening, Global Hand Washing Day, Sanitation Month and Cleaning Week Campaigns.

4. Textbooks with health education content and an accompanying teacher's training manual should be used as teaching aids for these sessions. Any other health and nutrition materials endorsed by the government may be used as supplementary materials for these sessions.

5. For peer education, each peer group should be made up of 7 to 8 members, both boys and girls, from the same neighborhood. Each group should have a leader, and the nominated teachers for peer education should train each peer group leader about his/her responsibility. In school, each peer group should be involved in ensuring a safe and clean school environment (including hand washing facilities with soap and water), and assisting teachers during the provision of health services and health education. The peer group should also support learning in the community, with support from the nominated teacher and SMC. They should conduct community awareness activities regularly, either through health or cleanliness campaigns or through meetings with parents. During the meetings, parents meet each other to discuss health issues and to try and find ways to solve those issues, with the involvement of the peer group and teacher.

6. During the campaigns, peer groups should use different strategies to promote health-related behavior change. At the household level, each student can share health messages with their parents and help them in keeping a clean and hygienic home. Demonstrations of correct health and hygiene practices, such as hand washing, or oral rehydration salts preparation, can be conducted during house visits by each peer group volunteer.

7. Teaching and peer education methods should be interactive and participatory – learners must observe the skills being used by the teacher and then practice themselves. There should be opportunity for sharing experiences and knowledge between students in order to aid the learning and decision making process.

IR4: Community support and policy

As mentioned throughout this manual, the role of the community in programming is paramount to ensuring the sustainability of the program and its results. Some of the avenues for engaging parents and community members in health activities is through the school's SMC, Parent-Teacher Association (PTA), mother gatherings as well as during special events such as annual sports day, Global Hand Washing Day (15 October), and International AIDS Day (1 December) (a list of important days observed by the WHO can be found under www.who.int/mediacentre/events/annual/en/index.html).

How to implement:

1. The SMC and teachers who are nominated as peer educators should plan various opportunities to involve parents in the SHN activities during their annual school improvement planning process. They should budget for these activities and where required raise support from the community to contribute to activities.
2. The PTA and peer groups should be involved in the preparation of activities meant to engage parents and community members and in facilitating health-related discussions or activities (such as demonstrations, dialogue and debates) during the event.
3. As mentioned earlier under 'support the creation of a national policy', program staff should advocate and facilitate the development and promotion of policies that support the various SHN interventions with support from the communities. The staff should identify policies that support or hinder SHN interventions with officials and communities. Any policies that need changing should be discussed with community members and officials. Any evidence that can support a policy on SHN should be presented.
4. Consultation should take place with SHN technical assistance backstops (who are at Save the Children headquarters) as well as with international stakeholders. Save the Children's advocacy team should be engaged during policy development, promotion and assessment in order to work out the best strategies to promote policies.

Program monitoring

Program monitoring should take place as activities are implemented. Monitoring will help to tell if the program is performing according to set standards or targets, and helps to identify problems and improve the program.

The monitoring system should track process indicators, i.e. those relating program inputs (materials, goods or actions necessary to carry out the program), outputs (services provided) and outcomes (direct results of outputs) to assess whether a program is performing to plan. For this, four main types of data should be collected as part of regular activities- supplies data (e.g. number of tablets, vision screening materials, FAKs/PTKS, or health education materials required/delivered/used); services data (e.g. number of health problems treated using FAKs); school level data (e.g. percentage of schools with latrines, hand washing facilities, water supplies, functional SMC); and child level data (e.g. percentage of children dewormed, supplemented or screened). These process data should be analyzed against planned figures in the Process Indicator Tool (see Step 3) at least every 6 months in order to assess performance. An explanation should be provided for any variance and the implementation plan should be adjusted if needed.

The reporting system for these data should follow the organization structure, in a bottom-up direction. In Mangochi, the headteacher reported their school to the local HSA, who then reported to the Save the Children country office for the entire district.

Program staff should consult the Save the Children Monitoring guidelines for SHN programs – *Monitoring School Health and Nutrition Programs: Guidelines for program managers* [8] for sample formats for recording data and its analysis. If required, they should also consult with their home office technical backstop person. Annex P shows the various activities and tools used by the program in Mangochi to monitor SHN activities.

Step 6: Evaluation

This step explains why implementers need to evaluate the SHN program and the methods used for evaluation. This step overlaps with the 'evaluate together' phase of the CAC.

During the life of the SHN program, evaluations need to be carried out to assess the effectiveness and impact of programming. Evaluations allow implementers to observe any changes that have occurred throughout the course of implementation and to assess whether this change was a direct result of Save the Children programming. The results generated from the evaluations also help in future program planning, advocacy and policy efforts.

The evaluation process needs to be dynamic benefitting the SHN team, partners, and stakeholders to learn from past experiences so as to inform future program activities. Among the first actions in the 'evaluate together' phase of the CAC is to determine who would want to learn from the evaluation, and to thus, form a representative evaluation team comprising members with both program and technical expertise. The team must then determine what they want to learn about the program (i.e. what outcomes they want to measure) and then develop a relevant plan and evaluation instruments.

Periodic reviews of results indicators over the lifetime of a program indicate whether a program is moving towards achieving its desired results. However the changes observed cannot be attributed to the SHN program without a comparison group. The advantage of measuring changes in an area where the program is not being implemented (the comparison/control school) lies in the ability to measure 'secular change' (change over time) and in effect, subtract it from the change in the area where the program is being implemented (the intervention school) to estimate the benefit that can be ascribed to the program. This is particularly important if no changes are observed or if things get worse, for example, due to an epidemic. In such circumstances the comparison/control area can show what would have occurred without the benefits of the program.

A more **rigorous evaluation** would be the random allocation of schools to intervention and comparison groups. To make it more practical and so as not to discriminate, activities can be phased in over time, so that eventually everyone receives the intervention. Results data would be collected from both groups. This is the method that allows us to draw the strongest conclusions about whether Save the Children's programs in fact caused the changes it observed, or whether they were due to other factors. It allows the results, due to the program, to be differentiated from what would have happened anyway without the program. If it is a long-term program, data is collected during three points of time – baseline, mid-term, and endline – from the intervention and comparison groups. Comparisons are made between the two groups to assess if any differences had occurred; and where a difference is found, it is attributed to be the impact of the program.

Though randomly allocating schools is the most robust quantitative evaluation design, it is also the most expensive and time consuming. Save the Children's sponsorship programs are in the process of developing specific guidance on how to undertake such an evaluation. Country SHN programs must therefore check with their technical backstops in home office for the latest guidance.

In addition to the methods above, a more **comprehensive evaluation** can be carried out to understand the sustainability of the impact of programs once Save the Children has removed its support. For example, will the impact increase, decrease or level off over time? This evaluation would look beyond the core program to examine broader changes that occurred in the communities where Save the Children worked and the institutions with whom it worked with. Further guidance on carrying out a comprehensive evaluation of the impact of programs on the capacity of families, communities and systems will be forthcoming.

Step 7: Lessons learned

The final step of the program cycle describes why it is important to learn from the experiences encountered throughout the implementation of the program and how to use the information gathered about lessons learned for future programming. Examples from the SHN program in Mangochi are given, where Box 9 provides the overall lessons that were learned (generated from the experience), while Annex Q provides detailed lessons that were learned from each of the strategies. This step is the time to prepare to scale up in the CAC.

During the course of the SHN program and through completing Steps 1 to 6 of the SHN program cycle, lessons will have been learned along the way such as the best strategies to implement, useful approaches used with relevant partners, and how best to reach the target group. In order to document and act on this rich information, a program review session should be organized with relevant staff members. A review could take place once a year over the entire program period to allow an annual assessment of lessons learned. Government officials, teachers that the program staff work with, as well as representatives from donors, and the community, should also be invited to provide feedback on their impressions of the SHN program. The review session can be set up to look at where the program efforts were most or least effective. By the end of the session, it is crucial for all implementers to understand the lessons that were learned so that it can be followed up with steps to improve existing/future SHN programs and help in scaling up efforts.

The results of the review should also be documented and shared as part of policy, advocacy and programming efforts. The sharing should not just be limited to country SHN program and local counterparts, but must also include other Save the Children programs especially where lessons can be generalized more widely. The feedback and recommendations generated can also be presented to overseas specialists and advisors, either through Save the Children's publications (e.g. annual reports, and the SHN newsletter), published or unpublished articles, or during workshops and meetings. In Mangochi the lessons learned were documented in eight briefs by intervention area which can be downloaded from <www.schoolsandhealth.org>. A summary of the key lessons learned and follow-up steps taken to address them are provided below. While Box 9 highlights the lessons learned, Annex Q provides a more detailed account of the lessons that were learned within each strategy of the four IR implemented in the SHN program.

Preparing to scale up is the last step of the CAC and it immediately follows the lessons learned exercise. Scaling up programs is important in order to extend the positive benefits of the SHN programs to more children and communities who need it, and in order to reach a critical mass of people with positive health knowledge and skills so that underlying health problems are addressed. For the program, scaling up also helps maximize resources and investments in the program. From the very beginning of the program, staff should have a vision of scaling up, and upon evaluating and assessing lessons learned must assess the potential for scaling up. The program approach should be consolidated and refined, and efforts should be made in building consensus among key stakeholders to scale up. The process of scaling up would mean a repetition of the program cycle steps. Additional funding and resources should be also secured. For more details on mobilizing communities to scale up, refer to the field guide *How to Mobilize Communities for Health and Social Change* [7].

Box 9: Lessons learned in the SHN program in Mangochi district

Lessons Learned 1: In the first couple of years of deworming, there was a lot of suspicion about the treatment and less than 50% of children took the medication. Some community members believed that they were contraceptives and therefore prevented their children from attending school on treatment day. Many community members also considered bilharzia as normal – they had it all their lives and did not understand the need for treatment.

To reduce suspicion and raise awareness on the importance of treatment for children's health and education, Save the Children used multiple methods to educate the community, including radio broadcasts reminding parents of dates and importance of treatment; community awareness meetings with ADCs, school communities and surrounding villages; notes to parents encouraging them to participate in the distribution; and notes to headteachers to remind children of the importance and safety of the treatment. As a result, coverage improved to 82%.

Lesson Learned 2: Due to the low literacy rate and poor educational achievement in Mangochi, many parents found it difficult to understand the Cool Parents Guide once the distributor had counseled them on using it.

Thus, the Cool Parents Guide was revised to make it more user-friendly by including pictures and illustrations. A review meeting with parents and children in August 2008 found that the illiterate parents understood the Guide better and were more likely to remember key messages. The pictures also generated more interest from the children and were used as prompts for discussion. The distributors also found that it took less time to counsel parents with the presence of pictures.

Lesson Learned 3: With PTKs, initially sick children would seek care from the trained teachers throughout the school day. Teachers complained that this disrupted class too much.

Thus, lunch and tea breaks were used to administer medications to sick children, unless there was an emergency.

This allowed for prompt treatment and care of the child, with minimal interruption to class time.

Lessons Learned 4: Despite tremendous progress in improving access to safe water and adequate latrines, the hardware aspects of the program, hand washing with soap or ash remained a low priority for schools and communities. Hand washing facilities were not maintained and children rarely washed their hands with soap. A key recommendation at the end of the program was thus, to have a well researched education, BCC campaign on the importance of hand washing, targeting all population groups with context-specific messages.

Lessons Learned 5: It was challenging to implement SHN without an approved national SHN policy and with limited support, collaboration, and guidance from the Ministries of Education and Health.

With the launch of the national Ministry of Education-led SHN program in 2007, the situation improved enormously and each district had SHN responsibilities and point persons to implement the program.



A distributor counsels a parent on how to use the Cool Parent Guide to communicate with her children about HIV/AIDS prevention.

Glossary

Albendazole	Albendazole is one of the common anthelmintic drugs that can be used to treat children who have STH or intestinal worms. At school, albendazole tablets can be given safely to children from the age of 12 months and onwards irrespective of their height or age (after 12 months). One tablet is sufficient, where a child chews and swallows the tablet in front of the teacher.
Anthelmintics	Anthelmintics are drugs which destroy parasitic worms (helminths) from the body.
Bilharzia (schistosomiasis)	Bilharzia is also known as schistosomiasis and is a parasitic disease which can cause chronic illness damaging internal organs, and in children impairing cognitive development and growth. It does however, have a low mortality rate. Bilharzia is the second disease after malaria which can impact a country socioeconomically. It is most commonly found in low income countries such as Africa, Asia, and South America. Children can be contaminated through swimming or playing in infected water.
Cold chain	Cold chain is referred to as the process used to maintain optimal conditions during the transport, storage and handling of vaccines from the manufacturer to the administration of the vaccine to the patient. Wasting vaccine is costly and expensive and can disrupt the delivery of the vaccination thereby delaying the intervention and impact of the program.
Cool Parent Guide	The Cool Parent Guide is a simple educational material containing points in the local language on how to talk with young children and on the technical aspects of HIV/AIDS and sexuality. The material contains guidance for parents to clarify their own values and expectations for their children, HIV/AIDS facts, ideas on how to talk to children to help them delay sex, and it encourages parents to talk one-to-one with their children.
Deworming	Deworming is the provision of anthelmintic drug treatment. It can be used safely and cheaply on a mass scale to remove and destroy parasitic worms that are in the body of adults and children.
Dose pole	A tool which determines the correct number of praziquantel tablets that need to be given to a child based on their height.
HemoCue	A HemoCue is a portable and accurate method of measuring the Hb levels in the blood. It is useful in acute clinical situations and as a guide for blood transfusion requirements. It can be easily used by health workers after a short period of training.
Intestinal worms	See soil-transmitted helminths (STH).

Iron deficiency anemia (IDA)	IDA is the most common nutritional deficiency in the world and school-age children is one of the groups most severely affected. IDA causes fatigue, low productivity and apathy. Among school-age children it results in poor physical and cognitive development and inevitably poor academic performance. The most common causes of anemia are poor diet and parasitic infection such as bilharzia, hookworm and malaria. Other nutritional deficiencies, such as vitamin A deficiency may also play a role. However, very little is known about how much each of these factors contribute to IDA.
IU	An International Unit (IU) is used to measure vitamins and drugs based on their biological effect. Each vitamin has a different substance so one IU of vitamin A will not contain the same number of milligrams as one IU of another vitamin.
Mebendazole	Mebendazole is the other common anthelmintic drug that can be used to treat children who have STH or intestinal worms. At school, mebendazole tablets can be given safely to children from the age of 12 months and onwards irrespective of their height or age (after 12 months). One tablet is sufficient, where a child chews and swallows the tablet in front of the teacher.
Nutrition education	Teaching of nutrition in schools helps children to learn nutrition and practice good eating habits. Many eating habits are formed during childhood and they can last a lifetime. It is therefore important for children to learn the benefits of good nutrition and to develop healthy eating habits. Schools are an excellent setting for bringing nutrition education to children at an early age.
Praziquantel	Praziquantel is an anthelmintic drug used for adults and children who have bilharzia/schistosomiasis. At school, praziquantel tablets are given to children over the age of 4. The number of tablets given to each child is based on their height by using a dose pole. The child swallows the tablet(s) in front of the teacher.
Pupil treatment kit (PTK)	A PTK is a bag containing medical supplies for the treatment of common illnesses and minor injuries at school. The common contents of the PTKs are usually medicines for pain relief, common health problems like malaria, eye infections and simple wound dressings.
Refractive error	Refractive error is an error in the focusing of light by an eye which causes blurring of vision. The testing of refractive error in schools can be done using an E chart or Snellen's chart.

Safe School Policy (SSP)

The SSP is a set of guidelines that is formulated by teachers, parents, SMC members, PTAs, local leaders and pupils with the support of Save the Children. The SSP concept seeks to address pupils' protection issues at school and the community at large by linking education desired attainments, children's safety and community mobilization. It enables fostering the protection of children in school and in the community by providing guidance/course of action to decision makers in creating safe environments for pupils. The SSP also aims at creating and strengthening partnerships between parents, teachers, pupils, local leaders and other key stakeholders for effecting safety improvement and build their capacity as stakeholders to protect pupils.

Schistosomiasis

See bilharzia.

Soil-transmitted helminths (STH)

STH are commonly known as intestinal worms. These are transmitted from eggs excreted in human feces or urine that contaminates the soil in areas which lack adequate sanitation. Children and adults can be infected with intestinal worms when they ingest the infected eggs when they come into contact with food and/or hands that have been contaminated from the soil. The common worms are hookworm, roundworm, and whipworm.

Vitamin A supplementation

Vitamins are small elements of food which you cannot see but are important because they help the body to work properly. There are lots of vitamins such as vitamin A, vitamin B, vitamin C etc. Vitamin A is very important as it keeps the cells on the surface of the body healthy and this makes it difficult for infection to enter the body. These body surfaces are: skin, surface of the eye, inside of the mouth, lining of the gut (intestines), and cells in the lungs. Vitamin A can be found in dark green vegetables, yellow fruits, pumpkins, carrots, meat, milk and eggs.

List of useful resources

Deworming

1. Helminth control in school-age children: A guide for managers of control programs

This document is a guide for program managers on how to plan, implement, and monitor deworming programs in school-age children. It includes the old WHO decision charts.

<www.who.int/wormcontrol/documents/helminth_control/en/index.html>

2. How to deworm school-age children: Instructions for teachers

This is a simple guide to assist teachers to conduct a deworming activity in their school.

<http://whqlibdoc.who.int/hq/2003/WHO_CDS_CPE_PVC_2003_6_Rev1.pdf>

3. Health education material

This site includes health education materials used during deworming activities from various countries.

<www.who.int/wormcontrol/education_materials/en/>

4. Urbani School Health Kit: Teachers resource book

A useful resource for teachers, it contains key messages on worm control and hygiene and activities to help educate children.

Skills-based health education

1. Children for Health. Children as Partners in Health Promotion

This document focuses on enhancing good quality health education providing ways for children (whether on their own or in groups) to pass on health messages to their families, communities and to other children.

2. Child-to-Child. A Resource Book. Child-to-Child Activity Sheets

This book is useful for those wishing to include Child-to-Child in their programs, and includes 35 activity sheets with updated health information and 9 new activity sheets covering areas such as HIV/AIDS, early childhood care, sexual health, safe motherhood, bird flu and diabetes.

Community mobilization

1. How to Mobilize Communities for Health and Social Change

A field guide designed to help people to understand how to plan community mobilization programs through a series of phases with country profiles from Bolivia, Peru and the Philippines.

2. Mobilizing Communities for Education, Health and Social Change (CASP Compendium)

This compendium presents an approach to mobilizing communities for improved educational and health outcomes for children and their families during the design, implementation, and monitoring and evaluation process in sponsorship-funded programs.

WASH in schools

1. Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings

This document is designed to be used in low-cost settings with simple and affordable measures, to improve the hygiene and health of school-age children. The guidelines focus on: water supply (water quality, quantity and access); hygiene promotion; sanitation (quality and access); control of vector-borne disease; cleaning and waste disposal; and food storage and preparation.

2. Towards Better Programming. A Manual on School Sanitation and Hygiene

A document that guides programmers on how to bring about changes in schools in the hygiene behavior of children, and how these children can pass on the health behavior changes within their communities.

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Annexes

Annex A: Key Questions to Guide a Situational Analysis

You should select the questions from each list that are most relevant to your impact area. Some questions listed below may not be relevant for you, and you may decide to include other questions based on your experience and understanding of the local context.

Goal/SO: Children's health and educational status

[Q1] *What are the most significant health and nutrition problems among the school-age group? Provide any data readily available. List sources when available. Try to identify health issues such as parasites and micronutrient deficiencies that are recommended for a SHN program. If there is no data on school-age children, include data on other age groups to provide an indication of the status amongst school-age children.*

[Q2] *Does the education sector and, in particular, do schools within the impact area, suffer from low enrollments, high absenteeism, high repetition and dropout, and/or low school performance? How does this break down by age? Provide district level data where available or report results from a sample of schools. Consult the education team.*

[Q3] *Is it likely that poor health and nutrition among school-age children contribute to low school enrollments and slow progress in school? What evidence is there for this in the impact area/in the country? If data is not available, conduct focus group discussions, and ask school and community members for the main causes of low enrollment, dropout and absenteeism.*

[Q4] *What health services do school-age children seek? Where do they currently go for health care? How far is the nearest health centre from school/home?*

[Q5] *What behaviors are likely to be contributing to children's poor health and nutritional status?*

[Q6] *Are school-age children at risk of death and morbidity due to highly preventable diseases? Which ones?*

IR1: Availability of SHN services

[Q1] *Are schools easily accessible to the population? Are teachers available to handle the student load?*

[Q2] *Is girls' participation and progress in school a significant problem? Explain.*

[Q3] *Is the participation and progress of orphans and vulnerable children in school a significant problem? Explain.*

[Q4] *Do schools currently provide information about health? Is it regularly integrated into the curriculum?*

[Q5] *Do schools provide any health services to students? To non-students?*

IR2: Quality of the school environment

[Q1] *Do children in schools have access to potable water supplies/water that is safe to drink?*

[Q2] *Do schools have functioning latrines?*

[Q3] *Do school latrines have hand washing facilities and soap?*

[Q4] *Do school latrines include separate facilities for girls? If not, does this affect the school attendance of girls?*

If data is not available for the above, visit the schools and collect the information.

IR3: Knowledge, attitudes, and interest

[Q1] What do the community and children know about treatment for highly preventable diseases that are affecting school-age children?

[Q2] What is known about current behaviors and beliefs related to health and nutrition?

[Q3] Are children vulnerable to high-risk behaviors related to health, including sexual health, especially HIV/AIDS? What behaviors specifically?

[Q4] Are there health-related curricula that are used by the government, Save the Children, or other institutions? If so, have the teachers received training in the health curriculum? Is it utilized in the schools by the teachers? If so, do teachers use participatory teaching methods when teaching health topics?

[Q5] Are there training activities for teachers and local health agents for health services for school-age children?

IR4: Community support and policy

[Q1] *Are there existing health and nutrition programs for school-age children either within Save the Children or through government or other institutions? List all programs including target age and expected outcomes.*

[Q2] *Is there a national SHN strategy or program in place? And if so, what is the status of the program and what could be Save the Children's role in supporting the national strategy or program?*

[Q3] *Are there SHN-related policies in the health or education agendas, including those related to student abuse or corporal punishment? And are there requirements related to providing health services or education to children? If so, are they implemented/enforced?*

[Q4] *Is there regional support for this program area? Specify.*

[Q5] *Do officials in the Ministries of Education and Health demonstrate an awareness and understanding of SHN issues? At what levels? Explain. If they are aware, are they supportive?*

[Q6] *Do teachers perceive any link between school performance, health behaviors, and health status?*

[Q7] *Are the community/parents aware of all the health and nutrition issues identified by health officials/agents?*

[Q8] *Do parents perceive any link between school performance and health behaviors and health status?*

[Q9] *Is there demand from the community to address the health and nutrition problems among school-age children? If so, what needs are of greatest concern? How do you know?*

[Q10] *Has there been community support for school-based health and/or nutrition activities? What kind of support is there?*

[Q11] *Based on experience to-date, what has been the reaction from the community to existing school-based health activities?*

Save the Children/partner capacity

[Q1] *What is the level of awareness and understanding of SHN in the Country Office and impact area? Explain.*

[Q2] *Does your Country Office support programs in both the health and education sectors? If so, what are these programs?*

[Q3] *Does your Country Office have education programs that address issues related to the quality of basic education? What aspects of quality? Is Save the Children recognized for this work; does it represent “better practice?” Does it include SHN strategies?*

[Q4] *Does Save the Children have the local level capacity to develop and implement a SHN program? What/who specifically?*

Annex B: Results of the Situation Analysis in Mangochi district

At the beginning of the program Mangochi-specific data was sparse, and even at the national level school-age data was not available. Two sources provided ample evidence that the health of Malawi's school-age children was poor: MICAH Matters [15] (a publication of World Vision Canada documenting Micronutrient and Health – MICAH) had just released highlights from baseline surveys in five African countries, including Malawi, where 1,200 households and an unspecified number of schools were sampled. The Education Development Center, Incorporated (EDC) provided further evidence after reviewing secondary data for its 1995 National Primary School Nutrition and Health Assessment [16].

Protein energy and micronutrient nutrition: MICAH found chronic malnutrition to be common (55% of children were stunted), while wasting, a sign of acute malnutrition, was less common during the non-hungry season (4% of children). EDC, reviewing the 1992 DHS, noted that 49% of children under 5 years of age were stunted, and about half of these children were severely stunted. Interestingly, EDC reported findings from 1991 showing that high income Malawian children aged 2 to 5 years were 10cms taller than their low income Malawian counterparts. Finally, Malawian schoolteachers estimated that 50% to 90% of children go to school hungry [17].

MICAH confirmed an iodine deficiency problem in Malawi: 43% of schoolchildren had low urine iodide levels (17% were severe, and 26% were mild to moderate). The total goiter rate (19%) among these schoolchildren confirmed a mild public health problem. In addition, 90% of mothers were unaware of the benefits of iodized salt, even where it was available. Legislation in 1987 requiring iodization of imported salt had not been enforced [18]. A 1994 study by Shrestha [19] in the Ntcheu district, adjacent to Mangochi district, found that 86% of children were iodine deficient, and 52% were severely deficient. All 24 of Malawi's districts had some degree of iodine deficiency disorders [20].

There was an extraordinarily high level of anemia among pregnant women (59%), and children under 5 years of age (70%) in Malawi. EDC, quoting a thesis by Shrestha [19], found 18% of 6 to 8 year olds to be anemic.

Over 20 years ago, Chirambo et al. [21] reported the vitamin A deficiency problem to be greatest in the Shire Valley (Mangochi district) where, at that time, 1% of pre-school children were blind. Esconte et al. [22] reported that 15% of 6 to 7 year olds in Central Malawi were vitamin A deficient.

Parasites: EDC reported that the Ministry of Health statistics showed malaria to be the leading cause of death for children under 5 years of age and for children aged between 6 to 18 years. MICAH found high malaria parasitemia rates during the rainy season among both young toddlers aged 6 months to 24 months (28%) and women (32%). Likewise, 21% of children (age not specified) were positive for hookworm, and 35% of children had urinary schistosomes. Note that without treatment, the prevalence of both conditions increases with time, so these were conservative estimates of the burden among older schoolchildren. Moreover, it was expected that schistosomiasis would be much higher around Lake Malawi where Mangochi district is situated. Indeed, Shrestha found that 60% of 8 to 10 year old boys and 58% of girls had hookworm; and 26% of boys and 27% of girls had Ascaris [19]. Figures have also been reported showing at least 40% to 50%, and possibly 100% of the population had schistosomiasis [23-24].

Data on the parasitic infections of schoolchildren in Mangochi district were in very short supply. An atlas of schistosomiasis indicated that urinary schistosomiasis occurs particularly along the lakes and rivers [25], and a survey reported by the staff of the Koche Health Centre found that 73% of 384 schoolchildren in three schools were infected with *Schistosoma haematobium* (Swaleyi, personal communication to Andrew Hall).

Water, sanitation and other health problems: Thirty percent of Malawian households had no latrine; 16% shared a latrine; and 53% had a private latrine. One in three Malawian children reportedly had diarrhea in the preceding 2 days (sic). Other common problems included: skin conditions (i.e. scabies, ringworm), respiratory infections (including tuberculosis), and trauma.

HIV/AIDS: HIV seroprevalence in Malawi then was 13% for men and women aged between 15 to 49 years. Many Malawian school-age children were likely to be AIDS orphans, and many had already entered high risk age-groups for acquiring HIV/AIDS and sexually transmitted infections (STIs).

Education: Children in Malawi enroll in primary school at the age of 6 years for a period of 8 years of basic education. Introduction of FPE in 1994 led to an increased enrollment in primary schools. That year, enrolment at the primary level increased from 1,895,432 to 2,860,819 students, with 53% of the total increase in enrollment that year being in Standards 1 and 2. However, high rates of repetition in the early grades, as well as drop-outs and absenteeism since 1994, reflected the influence of low quality education upon pupil learning.

Save the Children/partner capacity: In Malawi, Save the Children was uniquely poised to coordinate a large-scale demonstration program by building upon and integrating its expertise in health and education programming. Save the Children had a successful history of a 10-year child survival program implementation in Malawi. In education, Save the Children helped communities establish 28 village schools and also worked in 35 government schools to enhance education quality.

Save the Children had a strong background in project partnership that existed with the Government of Malawi ministries at both national and district levels. Save the Children implemented a partnership project to enhance child survival and reproductive health by strengthening systems, capacities and infrastructures. Save the Children also worked in close collaboration with the District Education Office in implementing village-based schools and strengthening the quality of education in government schools. The communication between the two was strong allowing close dialogue on program design and implementation issues.

In Malawi, SHN issues are supposed to be handled by Community Health Nurses (CHNs) who should visit schools on a regular basis to screen children and provide health advice and support. Unfortunately, CHNs were very few and had little or no access to funds to support travel to schools and little time to do so, given that priority was given to maternal and child health services like under 5 year olds and antenatal clinics. CHNs have the responsibility for a broad range of preventive health services for the community which should include the school.

Most schools were far away from health facilities. In some instances children had to walk more than 10kms to a nearest health facility before they could access basic health services, and often the facility would not have the necessary essential drugs. At times, communities failed to access health services because their community was close to private health facilities which required them to pay for services.

Annex C: Situation Analysis Summary Tool (To Complete in Step 1)

Country Office:		
SHN Program Area:		
Results	Prioritize Important Findings <i>(from Situation Analysis)</i>	Strategies to Address Findings <i>(from SHN program)</i>
SO		
IR1		
IR2		
IR3		
IR4		
Save the Children/ partner capacity		

Annex D: Key Strategies Matrix (To Use in Step 2)

Health Concern/ Key Strategy	Frequency	Ease of Implementing	Costs	Issues/Comments
IRI Schistosomiasis - Mass treatment of school-age children with praziquantel (600mg).	<ul style="list-style-type: none"> • If schistosomiasis prevalence $\geq 50\%$ by parasitology (or $\geq 30\%$ by questionnaire for visible hematuria), treat all school-age children (enrolled/non-enrolled) once a year. • If prevalence $\geq 10\%$ but $< 50\%$ by parasitology (or $< 30\%$ by questionnaire for visible hematuria), treat all school-age children (enrolled/non-enrolled) every 2 years. • If prevalence $< 10\%$ by parasitology, treat all school-age children (enrolled/non-enrolled) twice during primary schooling (e.g. once on entry and once on exit). 	<ul style="list-style-type: none"> • Simple. • The common drug used to treat schistosomiasis is praziquantel (600mg). • The drug is effective for mass school-based deworming and children over the age of 4 years can be safely treated. • The number of tablets given to a child is determined by their height by using a dose pole [12]. 	<ul style="list-style-type: none"> • Low: Costs between 20 to 71 US cents per child including delivery costs. • Less than 2 US cents per actual treatment. • Training and supervision costs are minimal for this mass treatment approach when dose poles are used. 	<ul style="list-style-type: none"> • Drug procurement and distribution system needs to be coordinated with available, on-going systems for the intervention to be sustainable. • Prevalence surveys require technical assistance from laboratory technicians and others. • Needs to be linked to effective BCC for prevention (see hygiene and other practices) to improve sustainability. • Treatment-seeking behavior needs to be promoted especially when prevalence is too low for mass treatment. • Policy approvals needed from Health Offices to adopt new WHO recommendations for low prevalence schools and use height pole for dosage calculation.
Mass treatment of school-age children with albendazole (400mg) or mebendazole (500mg) for intestinal parasitic infection	<ul style="list-style-type: none"> • 2 times per year, if prevalence rate $< 50\%$. Once a year if prevalence is $> 20\%$ and $< 50\%$. • Mass treatment can be done when prevalence is lower if funding is available. 	<ul style="list-style-type: none"> • Simple. 	<ul style="list-style-type: none"> • Low: Costs between 3 to 20 US cents per year including delivery costs. • Less than 2 US cents per actual treatment. • Training and supervision costs are minimal for this mass treatment approach. 	<ul style="list-style-type: none"> • Drug procurement and distribution needs to be coordinated with ongoing systems if the program is to be sustained. • Children from the age of 12 months and onwards can be safely treated. A child is given one tablet regardless of their height and age. • Intervention needs to be linked to effective BCC program for prevention of intestinal parasitic infection (see hygiene practices) and to enhance the sustainability. • Treatment-seeking behavior needs to be promoted especially when prevalence is too low for mass treatment. • Policy approvals needed from Health Offices to adopt new WHO recommendations for mass treatment.
School-based mass distribution of vitamin A capsules for vitamin A deficiency.	<ul style="list-style-type: none"> • Every 6 months. 	<ul style="list-style-type: none"> • Simple. 	<ul style="list-style-type: none"> • Low: Costs 4 US cents/child including delivery. • Less than 2 US cents per actual treatment. • Training and supervision costs minimal. 	<ul style="list-style-type: none"> • Measuring vitamin A status is problematic; currently no reliable, quick, and easy field methods. • Need to ensure that girls who might be pregnant do not receive supplementation, since it is associated with malformations in the fetus. • Should not take away from vitamin A supplies for higher priority groups. • Needs to be linked to effective communication strategies focused on dietary practices to prevent vitamin A deficiency and promote the consumption of a diet containing vitamin A.

	Health Concern/ Key Strategy	Frequency	Ease of Implementing	Costs	Issues/Comments
IRI	School-based mass treatment with iodized oil capsules targeted at high risk groups where iodized salt is not available.	<ul style="list-style-type: none"> • Every 6 to 12 months depending on the severity of deficiency. 	<ul style="list-style-type: none"> • Simple. 	<ul style="list-style-type: none"> • Low: 30 to 40 US cents per child including delivery. • Iodine capsules are more expensive than other micronutrient treatments. • Training and supervision costs minimal. 	<ul style="list-style-type: none"> • Should be second priority to promotion of iodized salt. • Measuring iodine status in field conditions is problematic. • Total goiter rate is not accurate and inappropriate to measure program impact. • Less attention given to the need for distribution of fortified oil with the advent of efforts to fortify salt with iodine. • Need for continued promotion in areas of high risk not covered yet by salt fortification. • Should not diminish supplies of iodized oil for higher priority groups.
	Schools as a mechanism for promoting and monitoring the fortification of salt and its consumption.	<ul style="list-style-type: none"> • Periodic. 	<ul style="list-style-type: none"> • Simple. 	<ul style="list-style-type: none"> • Salt testing kits available from UNICEF. • Promotional materials. • Training of teachers and students. 	<ul style="list-style-type: none"> • Potentially an under-utilized opportunity for promoting consumption of iodized salt. • Must include the promotional element and be linked to behavior change strategies if it is to contribute to alleviating the problem area. • Supply issues may require advocacy at different levels before promotion of consumption of iodized salt can be effective.
	School-based mass treatment of iron on a weekly or twice weekly basis to alleviate anemia.	<ul style="list-style-type: none"> • Once or twice a week for 10 to 15 weeks during high-risk season. • Number of weeks depends on funding and number of weeks in school term. • One or two periods per school year. 	<ul style="list-style-type: none"> • Fairly simple. 	<ul style="list-style-type: none"> • Low cost. • Training and supervision costs more substantial to ensure compliance. 	<ul style="list-style-type: none"> • Time from teaching must be evaluated and minimized in light of the length of treatment. • Iron procurement and delivery system must be linked to available systems if programs are to be sustained. • Needs to be linked to effective behavior change strategies that prevent iron deficiency through diet strategies. • Should be linked to interventions that address other causes of iron deficiency – vitamin A supplementation, deworming, prevention of malaria, and avoidance of tea during iron-rich food intake.
	School-based access to reproductive/sexual health and HIV counseling and psychosocial support.	<ul style="list-style-type: none"> • Continuous. 	<ul style="list-style-type: none"> • Medium to difficult. 	<ul style="list-style-type: none"> • Heavy training of teachers, some counseling material. 	<ul style="list-style-type: none"> • Trust of children, and parents for using counseling. • Gender of the teacher/counselor will impact utilization. • Time required may need additional personnel. • Need referral system for abuse and other problems identified during sessions.
	School-based screening for vision and hearing.	<ul style="list-style-type: none"> • Once per year. 	<ul style="list-style-type: none"> • Simple to very difficult. 	<ul style="list-style-type: none"> • Low to negligible cost: for tools and teacher training. • High costs: for provision of glasses and hearing aids, making this impossible in most contexts. 	<ul style="list-style-type: none"> • Need to ensure that classroom management measures are taken in the absence of other actions (e.g. move children closer to blackboard). • Need to ensure that children who test positive for vision or hearing problems are not discriminated against by neglect of schoolteachers. • Need to ensure clear parent communication to follow-up with identified needs. • Need to link with referral services that include the provision of eye glasses and hearing aids.

	Health Concern/ Key Strategy	Frequency	Ease of Implementing	Costs	Issues/Comments
IR1	School-based presumptive treatment of malaria.	<ul style="list-style-type: none"> Continuous. 	<ul style="list-style-type: none"> Fairly simple. 	<ul style="list-style-type: none"> Training of teachers and supply of malaria treatment. 	<ul style="list-style-type: none"> Drug procurement and distribution needs to be coordinated with ongoing systems; parent contribution/commitment necessary if the program is to be sustained. Intervention needs to be linked to effective behavior change program for prevention of malaria infection, recognition of symptoms, and seeking of treatment. Changing policies on malaria treatment requires continued surveillance of policies, especially regarding effectiveness of treatment.
IR2	In-school potable water provision.	<ul style="list-style-type: none"> Continuous. 	<ul style="list-style-type: none"> Medium to difficult. 	<ul style="list-style-type: none"> Low: depending on the technique for purification of existing water; high for new water sources (boreholes, pumps). Moderate costs depending on the design. 	<ul style="list-style-type: none"> Requires mobilization and organization of the community to supply labor and on-going maintenance. Technologies for purification vary greatly. When a new water source is required, it means that the water is needed by everyone, not just school-age children. A method for sharing the water in the community is required.
	In-school hand washing facilities.	<ul style="list-style-type: none"> Once, with ongoing maintenance. 	<ul style="list-style-type: none"> Easy to medium, depending on type of facility. 	<ul style="list-style-type: none"> Low to moderate: depending on type of facility. 	<ul style="list-style-type: none"> Technologies for hand washing facilities vary greatly. They can be very cheap and simple or more sophisticated and expensive. Needs to be linked to effective BCC to promote use of water and soap, not just water. Difficult to practice behavior modeled in schools when households do not have necessary environment, therefore, work with communities to encourage household installation of hygiene facilities. Needs to be linked to provision of soap or other abrasive/cleansing materials for effectiveness of hand washing.
	Latrine construction.	<ul style="list-style-type: none"> Once with on-going maintenance. 	<ul style="list-style-type: none"> Medium; requires community organization and participation. 	<ul style="list-style-type: none"> Moderate: cost depending on the design. 	<ul style="list-style-type: none"> Requires mobilization and organization of the community to supply labor and on-going maintenance. Needs to be linked to effective BCC to promote use and care of these facilities. Difficult to practice behavior modeled in schools when households do not have necessary environment, therefore, work with communities to encourage household installation of sanitation facilities. May be a critical intervention to ensure enrollment and attendance of adolescent girls.
IR3	BCC to prevent malaria through promotion of the use of impregnated bednets.	<ul style="list-style-type: none"> Periodic. 	<ul style="list-style-type: none"> Medium to difficult. 	<ul style="list-style-type: none"> High: initial costs to develop the appropriate behavior change strategy. Cost of the bednet and the insecticide also high. 	<ul style="list-style-type: none"> Save the Children has little to no experience in trying to use the schools to promote this preventive approach. Family-focused intervention not specifically aimed at the school-age child.

Health Concern/ Key Strategy	Frequency	Ease of Implementing	Costs	Issues/Comments
IR3 BCC programs. Behavior centered health, nutrition, schistosomiasis, malaria, and hygiene education and training addressing: <ul style="list-style-type: none"> • Inappropriate dietary practices that contribute to malnutrition. • Unhealthy practices leading to intestinal and other parasitic diseases. • High-risk behaviors among youth such as unsafe and early initiation of sex, drug and alcohol use, etc. • Prevention of HIV/AIDS. • Prevention of traffic and home accidents. • Prevention of smoking. • Oral health practices. 	<ul style="list-style-type: none"> • Continuous. 	<ul style="list-style-type: none"> • Medium. 	<ul style="list-style-type: none"> • High to medium: initial cost for materials development or adaptation. • Requires training and support to teachers. • Requires awareness building of personnel and others for their support for this activity. 	<ul style="list-style-type: none"> • Effective programs and materials demand a process that identifies ideal behaviors, current behaviors and opportunities, feasible behaviors, major barriers, and major motivations for practicing behaviors. • A significant commitment both in financial and human resource terms must be made to implement the process. It requires time and a significant number of activities with the community and beneficiaries. If the process is shortchanged, the communications program is unlikely to be effective. The cost is reduced drastically once the materials have been developed/adapted and the initial set of trainers and teachers have been trained. • Effective BCC programs are critical to the sustainability of the benefits of medical and nutritional interventions. • Behavior is the bottom line for long-term changes in health and nutrition.
Parent-child communication Guide.	<ul style="list-style-type: none"> • Continuous. 	<ul style="list-style-type: none"> • Medium. 	<ul style="list-style-type: none"> • Low: Training need for lead parents /PTA/SMC members. 	<ul style="list-style-type: none"> • Requires cascading of training and responsibility. • Proper counseling and support of parents are essential to ensure the Guides are used effectively. • Geared towards community and not really school-based so not all children will benefit; only children of parents who take interest will benefit. • A model guide is the “Cool Parent Guide” developed by the Malawi Country Office.

	Health Concern/ Key Strategy	Frequency	Ease of Implementing	Costs	Issues/Comments
IR4	Advocacy for changes to school policies.	<ul style="list-style-type: none"> Continuous. 	<ul style="list-style-type: none"> Medium. 	<ul style="list-style-type: none"> Medium. 	<ul style="list-style-type: none"> May entail higher level contacts and issues where national policy changes are needed. Best when coordinated with other activities under other IR supported by the program.
	Capacity building for schools (e.g. training of PTAs or creation of groups for SHN).	<ul style="list-style-type: none"> Continuous. 	<ul style="list-style-type: none"> Medium. 	<ul style="list-style-type: none"> Low. 	<ul style="list-style-type: none"> Required at a range of levels - community, local, district, and national for effective, sustained support to SHN.
	Participant-Defined Safe Schools Policies.	<ul style="list-style-type: none"> Continuous. 	<ul style="list-style-type: none"> Medium. 	<ul style="list-style-type: none"> Medium: during initial community training/workshop using Partnership-Defined Quality method. Low: Once policies/Memorandum of Understanding is established. 	<ul style="list-style-type: none"> Requires communities that are fully engaged. Children are a full participant not just a recipient of this activity. May require referral to local authorities of teachers and others.
	Operational research.	<ul style="list-style-type: none"> Once at program initiation. 	<ul style="list-style-type: none"> Medium. 	<ul style="list-style-type: none"> Medium to high: for establishing research environment and hiring researchers. 	<ul style="list-style-type: none"> Best combined when planned ahead as part of evaluation of program. Data collected useful for advocacy. Staff and community may not understand the need for comparison/control groups. Allows Country Offices to experiment with new activity or activity not recommended by previous experiences.

Annex E: Save the Children's Summary Implementation Plan Tool for Mangochi district

IR1: Increased availability of school-based health, hygiene, and nutrition services.				
Key SHN Activities	Person Responsible*	Others Involved	Implementation Timeframes*	Budget Allocated*
Weekly Iron supplementation		Ministry of Education, Science and Technology – District Education Office; Ministry of Health – District Health Office; Education Centre for the Deaf; and SHN team.		
Pupil treatment kit (PTK)				
Vision and hearing screening				
Vitamin A supplementation				
Bilharzia/schistosomiasis treatment & prevention				
IR2: Increased quality of the school environment related to SHN.				
Key SHN Activities	Person Responsible*	Others Involved	Implementation Timeframes*	Budget Allocated*
Promotion of water treatment		Ministry of Health and Population; Ministry of Water; SHN team; and contractor if needed.		
Construction of safe water systems				
Construction of latrines at schools				
Provision of hand washing facilities				
IR3: Improved knowledge, attitudes and interest in health services and health protective behaviors/practices.				
Key SHN Activities	Person Responsible*	Others Involved	Implementation Timeframes*	Budget Allocated*
BCC related to:		Ministry of Health and Population; Ministry of Water; SHN team; and contractor if needed.		
Bilharzia/schistosomiasis treatment & prevention				
Malaria treatment & prevention				
HIV/AIDS prevention				
Hygiene				
Nutrition education				
IR4: Improved community support and policy environment for SHN.				
Key SHN Activities	Person Responsible*	Others Involved	Implementation Timeframes*	Budget Allocated*
Partnership development		SHN team; other Save programs; and local communities.		
Community income-generating activities				
Advocacy and action for clear policies				
Parental involvement in SHN activities				

*Person responsible, implementation timeframes and budget allocated have not been displayed.

Annex F: SHN Indicator Reference Sheets (To Use in Step 3)

Indicator Name	Definition		Means of Verification			Notes	
	Description	Calculation	Source	Tool	Freq.		
GOAL	Prevalence of anemia. Prevalence of intestinal parasites and/or schistosomiasis. Prevalence of other diseases or micronutrient deficiencies (e.g. trachoma, and goiter etc.)	It is recommended to have a comparison group when evaluating SHN on specific prevalences, because prevalences can change due to factors unrelated to Save the Children's programming such as agricultural seasons. A comparison group controls for these other factors and evaluates the impact of SHN only.	[Number of children who have specific health problems] X 100, divided by [Total number of children tested].	Survey. Seek technical assistance.	Hb analysis using blood Hb photometer (Hemocue) for anemia; Stool examination and/or urine analysis for parasites; Other biomedical collection process as appropriate.	Baseline and endline.	(1) The choice of indicators to measure the health status will depend on what the main health problems are in the country and what kind of results the program wants to show. The research design (i.e., sample size, choice of comparison group etc.) will affect how the results can be interpreted. Therefore technical assistance is recommended during the planning phase.
	Prevalence of stunting.	Stunting (i.e. low height for age) is an indicator of chronic malnutrition and tends to increase during school-age years. By addressing parasitic infections and micronutrient deficiencies, SHN has the potential to prevent children from becoming more stunted and can even reverse the stunting. However, differences would most likely be noticeable only in the long-term and a comparison group would be required to control for the many other factors which are linked to stunting, including programs for pre-school children. Underweight (i.e. weight for age), wasting (i.e. weight for height) and Body Mass Index (BMI) can also be calculated at the same time. This indicator relies on a relatively accurate estimate of children's age.	[Number of children who have a height for age <2 Z scores] X 100, divided by [total number of children tested].	Survey. Seek technical assistance.	Height, weight and age, collected using Leicester Height scale and a digital weight scale.	Baseline and endline.	

Indicator Name	Definition		Means of Verification			Notes	
	Description	Calculation	Source	Tool	Freq.		
GOAL	Student learning achievement.	Level of performance in language/literacy and numeracy/math at particular grade in the basic education cycle e.g. Grade 3 and/or Grade 5 on a national or regional test (disaggregated by sex). Please consult and coordinate with the education team in the country.	$\frac{[\text{Number of students in the target area/school who have performed above an acceptable standard (achieving 50\% or above) on a national or regional systematic test on language/literacy and numeracy/math}] \times 100}{[\text{total number of students who have taken the test in the target school/area}]}$	School, Ministry of Education, Testing Agency Records.	Form to gather school enrollment data from each Save the Children supported school.	Annually (use enrollment numbers from the beginning of the year).	(2)Any other indicator collected by the education team in-country can be used to evaluate the SHN program. Consult the education team in-country and/or in home office for other indicators regarding educational achievement. Where basic education and SHN are implemented together in the same schools, education indicators will illustrate the impact of both programs. Only where SHN is implemented separately from the basic education program can educational achievement/attendance be attributed to SHN interventions. A well thought out research design would then be necessary and a comparison group will be necessary to control for the many other factors affecting educational outcomes.
	Student attendance rate.	Percentage of students in school on a given day [disaggregated by grade and sex]. Please consult and coordinate with the education team in the country (2)	$\frac{[\text{Total number of students present in school on a given school day}] \times 100}{[\text{Total number of students enrolled in school}]}$ Reported number is average of three spot checks.	School spot check and classroom attendance records.	Spot check Attendance log.	Three times a year.	

Indicator Name	Definition		Means of Verification			Notes	
	Description	Calculation	Source	Tool	Freq.		
SO	Percent of schoolchildren dewormed or/and supplemented with micronutrients.	Dewormed refers to treatment with any deworming drug (albendazole, mebendazole or praziquantel). For all distributions, define within country the minimum number of tablets a child should receive to be fully treated/supplemented e.g. 2 capsules per year for vitamin A, 1 to 2 deworming treatments per year (depending on prevalence), a minimum of 10 to 15 iron tablets per year (depending on supplementation protocol).	[Number of schoolchildren dewormed or supplemented with micronutrients] X 100, divided by [Total number of schoolchildren enrolled in program schools]. For non-school going children, the absolute number of children dewormed is sufficient, since the denominator (total number of school-age children in the impact area) is hard to estimate.	Program records.	SHN Monitoring Form.	Annually.	
	Percent of schoolchildren reporting a specific behavior or observed practicing a specific behavior.	The behaviors that are measured should be addressed in the interventions e.g. through the school health curriculum or other school-based health promotion activities. Where possible, conduct observation of practices which is more objective e.g. count the number of children who wash their hands after using the latrines versus the number who don't.	[Number of children reporting a specific behavior OR observed practicing a specific behavior] X 100, divided by [Total number of children surveyed or observed].	Survey.	SHN KAP questionnaire and/or observation sheet.	Baseline and endline; use qualitative tools to check progress.	(3) All tools should be adapted to the local context and project needs and pre-tested.
IRI	Percent of schools providing mass deworming and/or micronutrient supplementation.	Please note the specific micronutrients or/and anti-parasitic drugs provided when reporting this result.	[Number of schools doing mass deworming and/or micronutrient supplementation] X 100, divided by [Total number of schools within target area].	Program records.	SHN Monitoring Form.	Annually.	(4) Number of schools within the target area is the number of schools that the program eventually wants to reach. e.g. if the aim in the next 5 years is for SHN to reach 100 schools, then the denominator should be 100 schools. The same denominator should be used in all "percent of schools" indicators.

Indicator Name	Definition		Means of Verification			Notes	
	Description	Calculation	Source	Tool	Freq.		
IR1	Percent of schools providing vision and hearing screening treatment and/or malaria treatment kits and/or psychosocial counseling and/or other SHN-related services.	SHN-related services should be evidence-based solutions that can be replicated/scaled-up and that address the needs of the children in the impact area. Choose appropriate indicators to match the program's interventions and specify the intervention.	$[\text{Number of schools providing vision and hearing screening or counseling or other SHN service}] \times 100$, divided by $[\text{Total number of schools within target area}]$.	Program records.	SHN Monitoring Form.	Annually.	
IR2	Percent of schools with access to potable water.	Access to potable water needs to be defined in-country (i.e. minimum distance from school, level of water quality, organization around water source, and equity of access/use etc.).	$[\text{Number of schools with access to potable water}] \times 100$, divided by $[\text{Total number of schools within target area}]$.	Program records/ School enrollment.	SHN Monitoring Form.	Annually.	
	Percent of schools with functioning latrines.	Minimum standards to define a 'functioning' latrine need to be set in-country. Develop a checklist to assess if latrine is 'child-friendly', clean, unlocked, etc. This indicator should parallel the indicator on hand washing facilities, i.e. number of schools with latrines should be similar to the number of schools with hand washing facilities.	$[\text{Number of schools with a functioning latrine}] \times 100$, divided by $[\text{Total number of schools within target area}]$.	Program records/ School enrollment.	SHN Monitoring Form.	Annually.	
	Percent of schools with hand washing facilities.	Minimum standards for hand washing facilities need to be set in-country e.g. they need to be close to the latrines, have soap and be child-friendly (appropriate height, easy to use, etc.).	$[\text{Number of schools with hand washing facilities}] \times 100$, divided by $[\text{Total number of schools within target area}]$.	Program records/ School enrollment.	SHN Monitoring Form.	Annually.	
IR3	Percent of schools that have taught at least (specify number) of health topics in the year	This indicator will vary according to the type of intervention being implemented. If health fairs or days are the main health promotion activity, the indicator should be adapted accordingly.	$\text{Number of schools teaching specific number of health sessions}] \times 100$, divided by $[\text{Total number of schools within target area}]$.	Program records/ School enrollment.	SHN Monitoring Form.	Annually.	

Indicator Name	Definition		Means of Verification			Notes	
	Description	Calculation	Source	Tool	Freq.		
IR3	Percent of children who know certain facts about health, hygiene, nutrition and/or HIV/AIDS prevention and have positive attitudes towards specific behaviors.	The knowledge and attitudes that are measured should be addressed directly in the interventions e.g. through the school health curriculum or other school-based health promotion activities and be adapted to children's grade and age.	$[\text{Number of children who know certain facts}] \times 100, \text{ divided by } [\text{Total number of children interviewed}].$	KAP Survey.	SHN KAP Questionnaire.	Baseline and endline. Use qualitative tools to check progress.	All tools should be adapted to the local context and project needs and pre-tested.
IR4	Percent of schools with functioning SHN Committees.	Identify the criteria you will use to determine whether or not a SHN committee is "functioning" (i.e. number of times it meets, degree of involvement, etc.) before conducting the assessment. Its links to SMCs should be part of the definition of "functioning". Note these criteria when reporting your results.	$[\text{Number of schools in target area with functioning SHN Committees}] \times 100, \text{ divided by } [\text{Total number of schools in target area}].$	SMC records; SHN committees may be an integral part of the SMCs.	SHN Forms.	Baseline and annually.	
	Notable change in policies related to SHN.	Examples of these types of supportive policy initiatives include governmental taskforces, regional/governmental initiatives, public education campaigns, etc. For example, the establishment of food safety standards at schools.	During your situational analysis or baseline study, a 'baseline' should be established regarding the policy environment for SHN in the target area. Each year monitor the policy environment and record any changes that have taken place.	Information about resources may be found in government/ education departments, other NGO reports, local initiatives and/or universities.	SHN Forms.	Baseline and annually.	

Annex G: Save the Children's Results Indicator Planning Tool (RIPT) for Mangochi district

Field Office: Malawi				Date:	
SHN Indicators	Data Requirements	Source	Data Collection Method	Frequency	Person Responsible for Collecting the Data

GOAL: Improved health and educational status of school-age children

Rate of anemia	Number of pupils who have anemia in a sample	Hb analysis	Sample survey	Baseline and endline	
	Total number of pupils sampled				
Prevalence of bilharzia/schistosomiasis parasites	Number of children* with bilharzia/schistosomiasis in a sample	Urine analysis	Sample survey	Baseline and endline	
	Total number of children in a sample				
Prevalence of malaria parasites	Number of children with malaria in the past month	Self-reporting cases of malaria	Sample survey	Baseline and endline	
	Total number of children in a sample				

STRATEGIC OBJECTIVES (SO): Improved use of key school-based health and nutrition services

School enrollment rate	Number of students enrolled	School records	Primary education project	Baseline & annually	
	Total number of school-age children in target area	Target population-Tool 5	Primary education project		
School attendance rate (Mean actual attendance rate)	Sum of the number of days each student attended school	School records	Primary education project	Baseline & each term	
	Sum of functioning school days in the year				
	Sum of students enrolled				

SO (SUB-SO LEVEL): Improved use of key school-based health and nutrition practices/behaviors

Percent of children who take bilharzia/schistosomiasis medicine	Number of children receiving praziquantel	School records	Meetings with teachers and HSAs	Annually after distributions	
	Total number of school-age children in target area				
Percent of children reporting avoiding urinating in water	Number of children who reported not urinating in water last time at lake	Self-reporting	Surveys	Baseline and endline	
	Total number of children sampled				
Percent of children reporting taking malaria medicine at school when ill with malaria	Number of pupils who reported seeking treatment at school when ill with malaria	Self-reporting	Surveys	Baseline and endline	
	Total number of pupils sampled				
Percent of children reporting sleeping under or next to a treated net	Number of pupils who report sleeping under or near a treated net every night of the year	Self-reporting	Surveys	Baseline and endline	
	Total number of pupils sampled				

Field Office: Malawi				Date:	
SHN Indicators	Data Requirements	Source	Data Collection Method	Frequency	Person Responsible for Collecting the Data
Average age of sexual debut	Age of sexual debut	Self-reporting	Surveys	Baseline and endline	
Percent of pupils who wash hands after using the toilet at school	Number of pupils who report washing hands after using the toilet	Self-reporting & observation	Surveys	Baseline and endline	
	Total number of pupils sampled				
Percent of pupils who use toilets to defecate at school	Number of pupils who report washing hands after defecating at school	Self-reporting & observation	Surveys	Baseline and endline	
	Total number of pupils sampled				
IR1: Increased availability of school-based health, hygiene, and nutrition services.					
Percent of pupils 10 years old and younger receiving vitamin A	Number of pupils receiving vitamin A	Program records	Meetings with teachers and HSAs	Annually after distributions	
	Total number of children enrolled in program schools	Enrollment records	Primary education project		
Percent of pupils with access to a PTK	Number of pupils enrolled in schools with PTK	Program records & enrollment records	Meetings with teachers and HSAs	Annually	
	Total number of pupils enrolled in program schools	Enrollment records	Primary education project		
Percent of children treated with praziquantel	Number of children receiving praziquantel	School records	Meetings with teachers and HSAs	Annually after distributions	
	Total number of school-age children in target area	Target population - Tool #5	Primary education project		
Percent of Standard I pupils receiving vision and hearing screening	Number of pupils in Standard I receiving vision and hearing screening	Program records	Meetings with teachers and HSAs	Annually	
	Total number of pupils enrolled in Standard I	Enrollment records	Primary education project		
IR2: Increased quality of the school environment related to SHN.					
Percent of schools with potable water at school	Number of pupils of schools with potable water	Program records	Surveys/ meeting with teachers and HSAs	Annually	
	Total number of pupils in program schools	Enrollment records	Primary education project		

Field Office: Malawi				Date:	
SHN Indicators	Data Requirements	Source	Data Collection Method	Frequency	Person Responsible for Collecting the Data
Percent of schools with functioning latrines for girls and boys at school	Number of pupils in schools with functioning latrines for girls and boys	Program records	Surveys/ meeting with teachers & HSAs	Annually	
	Total number of pupils in program schools	Enrollment records	Primary education program		
Percent of schools with access to hand washing facilities at school	Number of pupils of schools with hand washing facilities	Program records	Surveys/ meeting with teachers & HSAs	Annually	
	Total number of pupils in program schools	Enrollment records	Primary education program		
IR3: Improved knowledge, attitudes and interest in health services and health protective behaviors/practices.					
Percent of school-age children who know that those with/without bilharzia/ schistosomiasis symptoms should take praziquantel	Number of children who know that those with/without symptoms should take the medicine	School-age children	Survey	Baseline & every 3 years	
	Number of school-age children sampled				
Percent of school-age children who know how to avoid urinating in water	Number of children who can name at least one way to avoid urinating in water	School-age children	Survey	Baseline & every 3 years	
	Number of school-age children sampled				
Percent of school-age children who feel positively about taking praziquantel	Number of children who say that praziquantel is safe for children	School-age children	Survey	Baseline & every 3 years	
	Number of school-age children sampled				
Percent of pupils who feel positively about being treated for malaria at school	Number of pupils who prefer to get treated for malaria at school first	Pupils	Survey	Baseline & every 3 years	
	Number of pupils sampled				
Percent of pupils who know how to avoid sex	Number of pupils who can name at least three realistic strategies to avoid sex	Pupils	Survey	Baseline & every 3 years	
	Number of pupils sampled				

Field Office: Malawi			Date:		
SHN Indicators	Data Requirements	Source	Data Collection Method	Frequency	Person Responsible for Collecting the Data
Percent of pupils in relationships who have discussed safer sex with their partners in the past term	Number of pupils in relationships who have discussed safer sex with their partners in the past term	Pupils	Survey	Baseline & every 3 years	
	Number of pupils in relationships sampled				
Percent of pupils under 10 years of age with adequate skills to use toilets	Number of pupils under 10 years of age who can discuss how to use toilets	Pupils	Survey	Baseline & every 3 years	
	Number of pupils under 10 years of age sampled				
	Number of pupils sampled				
IR4: Improved community support and policy environment for SHN.					
Percent of schools with functioning SHN committees	Number of schools in target area with functioning SHN committees	SMC records	Meetings with teachers	Annually	
	Total number of schools in target area	Target area records			
Percent of parents who contributed to the PTK in the past year	Number of parents who contributed to PTK in past year	School records	Meetings with teachers and HSAs	Annually	
	Total number of parents in program schools	Target area records			
Percent of parents who accompanied children to the last praziquantel distribution	Number of parents who accompanied children to last distribution day	School records	Meetings with teachers and HSAs	Annually after distribution	
	Total number of parents in program schools	Target area records			
Percent of parents of pupils under 12 years of age who talk with them about delaying sex in the past month	Number of parents of pupils under 12 years of age who talked with them about delaying sex in the past month	Self-reporting	Survey	Baseline & every 3 years	
	Total number of parents in program schools				

Annex I: Strategies implemented by the SHN program in Mangochi district

Intervention	Rationale	Goal	Target	Implementation process
IRI: Increased availability of school-based health, hygiene, and nutrition services.				
<ul style="list-style-type: none"> Iron supplementation 	<ul style="list-style-type: none"> In Mangochi district, Save the Children found that schoolchildren suffered high rates of morbidity and mortality - 40% were anemic, and 35% to 100% of children were infected with bilharzia/schistosomiasis [10]. School-based weekly iron supplementation complements routine deworming with praziquantel by replenishing children's depleted iron stores once they have been dewormed, and in the long run, improves physical development, school performance, overall attendance, drop-out rates, and repetition rates. Weekly iron supplementation for anemia can be administered by teachers and is more effective than daily supplements with fewer side-effects (in Africa, Asia and South America). Save the Children's experience in Mali found that weekly school-based iron supplementations for 10 weeks increased compliance and reduced the prevalence of anemia by 17% compared to controls. In Zanzibar, weekly iron supplementation significantly improved cognitive development in pre-school children without an impact observed on Hb levels. 	<ul style="list-style-type: none"> To reduce anemia among schoolchildren. 	<ul style="list-style-type: none"> 6 to 19 year olds - all school-age children. 	<ul style="list-style-type: none"> Intervention: Weekly school-based iron supplementation was initiated as an operational research study to assess the effectiveness of the program. The intervention involved community sensitization, surveys, and treatment (in intervention/control schools). Community orientation: Orientation were done at the zonal and school levels to ensure schools adhered to the study and accepted/supported the weekly iron supplementation and survey methods (see below). At the zonal level all HSAs, headteachers, SMCs, parents and religious groups were represented and responsible to sensitize the school community. Survey: A trained team collected and examined blood samples (using a HemoCue) for Hb, and urine samples for bilharzia/schistosomiasis, and test scores for school performance. Information was collected 15 weeks pre- and post-exercise of iron supplementation. Treatment: HSAs/teachers were trained on how to organize and monitor iron supplementation. A week after the survey, children (in coastal, intervention/control schools and upland schools where children had bilharzia/schistosomiasis) were dewormed with praziquantel those in the intervention schools received weekly iron supplementation for 15 weeks. Each week of supplementation a message was given on the importance of iron and iron-rich foods which was discussed with children to help them to easily assimilate each message. A week after deworming, all children in Standard 2 and below received vitamin A capsules (200,000 IU). Children who had malaria during the survey were treated through the PTK.
Bilharzia/schistosomiasis treatment and prevention	<ul style="list-style-type: none"> MICAH (1998) found that 35% of children had urinary schistosomes with expected higher levels situated in Mangochi district where 40% to 50% and possibly 100% had schistosomes [23-24]. Data is limited on parasitic infections in Malawi. An atlas on schistosomiasis indicates that urinary schistosomiasis occurs along lakes/rivers [25]. A survey by staff of Koche Health Center found that 384 (73%) schoolchildren were infected with <i>Schistosoma haematobium</i> (Swaley, personal communication to Andrew Hall). 	<ul style="list-style-type: none"> To reduce the prevalence of bilharzia/schistosomiasis among schoolchildren. 	<ul style="list-style-type: none"> 6 to 19 year olds - all school-age children (in- and out-of-schools). 	<ul style="list-style-type: none"> Intervention: drug delivery, training and BCC, and mass treatment. Drug delivery system: Save the Children purchased drugs and distributed to schools directly as this was quicker than being stored in the district hospital as the district health system did not work well with drug distribution. Training: Teachers/headteachers/HSAs involved in deworming were trained. HSAs and PEAs attended a 2-day workshop for training of trainers on how to deworm. The HSAs/PEAs then conducted a school-based training for their teachers in each of their zones. This was cheaper and reached a large number of teachers. SMC and PTA members were separately trained on supporting teachers during deworming. The training focused on how to conduct mass treatment using a dose pole which is easier to use by teachers as you do not need to calculate the doses; training also included basic knowledge on bilharzia/schistosomiasis and how to complete treatment records.

Intervention	Rationale	Goal	Target	Implementation process
IRI: Increased availability of school-based health, hygiene, and nutrition services.				
Bilharzia/schistosomiasis treatment and prevention	<ul style="list-style-type: none"> Save the Children 1999 SHN baseline survey showed 36% overall prevalence of bilharzia/schistosomiasis (with high prevalence of 42% to 80% in coastal schools) [10]. WHO recommends that at least 75% of school-age children are to be covered in mass treatment of bilharzia/schistosomiasis for better effects on prevalence [26]. 	<ul style="list-style-type: none"> To reduce the prevalence of bilharzia/schistosomiasis among schoolchildren. 	<ul style="list-style-type: none"> 6 to 19 year olds - all school-age children (in- and out-of-schools). 	<ul style="list-style-type: none"> Treatment: All teachers and trained SMCs participated in deworming. Parents were encouraged to come with their children so that they could be treated on the spot. Deliberate effort was made to deworm out-of-school children. Community sensitizing on treatment/prevention was achieved prior to deworming using multiple methods such as radio, drama and community meetings. Children were measured with a dose pole to determine how many tablets each child needed. Administrators washed their hands with clean soap and water before giving out medication which was provided in a quiet classroom to minimize confusion. Any child ill (including fever, diarrhoea, and malaria) on the day of treatment would not receive medication. Praziquantel tablets were given in smaller pieces to younger children. Teachers observed children taking medication to prevent tablets being spat out. After taking medication the teachers watched children for 30 minutes to ensure no side-effects occurred and if a child vomited within 30 minutes of administration the full dose was repeated.
Pupil treatment kit (PTK)	<ul style="list-style-type: none"> Malawi is affected by malaria, and this leads to high levels of school absenteeism, long-term cognitive impairment (in severe disease), and development of anemia. Reports from the Save the Children program highlighted that a number of sponsored children had died from malaria - of 43 children who had died 25 died from probable malaria [27]. The reasons for death were: delay in care-seeking behavior, long distances to travel to health facilities, high costs in some health facilities, and unavailability of essential medicines in facilities offering free treatment. The PTK is for all children regardless of economic status (i.e. those who can and cannot pay). 	<ul style="list-style-type: none"> To improve the health and educational performance of schoolchildren by ensuring that common illnesses and minor injuries are accurately treated on time, preventing progression to severe disease or serious health problems which will interfere in learning. 	<ul style="list-style-type: none"> 6 to 19 year olds - all school-age children regardless of economic status. 	<ul style="list-style-type: none"> Intervention: Prior to starting PTK in Malawi, Save the Children sought permission from the Ministries of Education and Health to authorize teachers to dispense medication within schools as the PTK was a new intervention. As a result, the Ministry of Health approved/authorized a list of medications that could be safely administered by teachers. The intervention included community sensitization, training, treatment using PTK, monitoring, and BCC activities. Community sensitization: PEAs and CDAs were oriented on the intervention. They in turn sensitized the ADC members and school community members. Sensitization at school was aimed at promoting early recognition of malaria and prompt care-seeking behavior. Training: Teachers dispensing medication needed to be trustworthy, considerate, cooperative, committed and hardworking. Two to three teachers from each intervention school were selected as dispensers and at least one teacher from the school lived at the school premises, including during the school holidays. The teachers received training for 5 days to: diagnose/treat clinical malaria, eye infections and minor injuries; safe keeping and maintenance of PTKs; and keeping PTK records and the production of reports. Dispensers were also trained to give clear instructions to children taking additional doses at home and to follow-up and refer children who did not improve to health facilities. A detailed training manual developed in collaboration with the District Health Office and Red Cross partners was used during the training. HSAs were trained for 2 days on the supervision of PTKs to ensure that dispensers made the correct diagnosis, correctly used and stored medications, and kept accurate cash and medication records. A school-based management system was set up in each school (4 members from the school committee and the Parent-Teacher Association - PTA) to monitor implementation of PTKs, and ensure availability of cash and medications in schools.

Intervention	Rationale	Goal	Target	Implementation process
IRI: Increased availability of school-based health, hygiene, and nutrition services.				
Pupil treatment kit (PTK)				<ul style="list-style-type: none"> • Treatment using PTK: No-one other than the dispenser was authorized to give out the medication. Dispensers needed to: properly diagnose the condition before administering medication; dispensing drugs only to those sick and only for the complaint presented; always giving clear instructions on dosage for each drug; observing (30 minutes) each pupil after medication for side-effects and following-up where necessary to ensure medications were taken correctly; recording the name, problem, type of drug and dosage for each patient in the register; recording any other observations that would assist in improving the PTK operation; keeping medicines well labeled, and out of reach of children; keeping medicines and medical supplies in a clean, dry, cool place clear from cockroaches and rats, and cotton and instrument gauzes kept in sealed plastic bags; keeping emergency supplies of important medicines on hand at all times and replacing used ones as soon as possible; destroying expired/spoiled drugs (in front of the committee) and ordering fresh supplies; undertaking regular audits (by committee) and always keeping the box locked after use. • Sustainability of PTK operation: Parents and communities contributed towards purchasing medical supplies for the PTKs. School communities were requested to pay upfront, an initial contribution prior to the kit being provided to the school. All 101 primary schools secured PTK supplies. Save the Children subsidized costs of the initial supply of PTKs by 80% where communities paid the remaining 20%. The subsidy was gradually reduced, and by the 4th year schools/communities were responsible for paying the full cost of the supplies. The school committee/PTA developed plans on how medical supplies would be stocked up as the external support was phased out e.g. communities identified communal ways of raising funds such as working in people's gardens. • Monitoring: Quarterly review meetings were conducted with dispensers and HSAs to identify/rectify problems encountered in schools and to purchase medications at the meetings. An operational research was conducted to help shape the PTK sustainability, to find out what worked well and what needed to be improved. • BCC activities: Activities included a PTK poster to help dispensers with diagnosis and providing correct medication. Booklets on malaria prevention were produced. Every year Malaria Open Day was commemorated (including over the radio broadcasts and cassettes) to raise awareness and encourage the community to take responsibility of their own health.

Intervention	Rationale	Goal	Target	Implementation process
IRI: Increased availability of school-based health, hygiene, and nutrition services.				
Vision and hearing screening	<ul style="list-style-type: none"> Sight and hearing are important senses for learning and problems in these organs negatively affect children's learning ability. Information on problems to these senses are lacking partly due to these children not attending school. Those children who do attend school start their education at a disadvantage. Children with sight and hearing impairments receive little or no attention by teachers, as the basic training of teachers does not provide them with the skills on how to handle children with learning difficulties, including those with visual and hearing problems. 	<ul style="list-style-type: none"> To improve class achievement of all children with visual and hearing problems. 	<ul style="list-style-type: none"> 6 to 19 year olds - all school-age children with hearing and visual problems. 	<ul style="list-style-type: none"> Intervention: The intervention included training teachers; screening children, and sensitizing the community. Training: A one-day orientation was set up for teachers to equip them with the skills to screen for defective sight/hearing, and to provide remedial actions and referral services for children with problems. Teachers were trained to use an E chart to: identify children with visual problems and simple local materials (i.e. plastic bottle filled with sand) to check hearing; to follow-up on class achievement of these children and assist where necessary to improve their achievements. As the teacher training was short, a trial was done where teachers were trained for 1-week. These teachers were given more skills on how to deal with children with visual/hearing problems. Screening children: All children in the first year of intervention were screened for visual/hearing problems. Thereafter, Standard I children and those transferred in from other schools were screened during follow-up on those children who had problems. Initial assessment was carried out by trained teachers and remedial measures taken included: seating children with problems in front of the classroom, writing in big letters, speaking while facing the children and using visual aids (for hearing). Children with severe problems were referred by teachers for further management; they were followed-up by the ophthalmic clinical officer and an hearing impairment specialist who prescribed eye glasses/hearing aids to those children who needed them. Save the Children with the Education Center for the Deaf provided hearing aids and Clear Vision- US provided free eye glasses. Community sensitization: Trained teachers sensitized school communities to encourage parents/guardians to send children with visual/hearing problems to school as they have a right to education, and to explain to parents their responsibility in taking their children for further management to health facilities by explaining the importance of screening and referrals to a health facility.
Vitamin A supplementation	<ul style="list-style-type: none"> Vitamin A deficiency has been a problem in Mangochi district where 20 years ago 1% of pre-school children were blind [21]. In Central Malawi, 6 to 7 year olds were vitamin A deficient (15%) [22]. The 1999 Save the Children SHN baseline [10] survey showed 1% clinical deficiency in vitamin A amongst schoolchildren. Extraordinary high levels (70%) of anemia were found in children <5 years of age in Malawi. EDC states 18% of 6 to 8 year olds were anemic [19]. WHO recommends an increase in cultivation and consumption of vitamin A-rich foods in Malawi. 	<ul style="list-style-type: none"> To reduce vitamin A deficiency among schoolchildren. 	<ul style="list-style-type: none"> 6 to 10 year olds - primary school children. Target group below 10 year olds to avoid risk of giving vitamin A to pregnant school girls as vitamin A dosage of 200,000 IU is harmful to the unborn child. 	<ul style="list-style-type: none"> Intervention: Vitamin A supplementation and nutrition education. Vitamin A supplementation: Administered by teachers a week after bilharzia/schistosomiasis treatment. Supplementation was done once yearly for ease of logistics but recommended twice yearly. Vitamin A supplementation training was done with bilharzia/schistosomiasis treatment training. Nutrition education: Used to emphasize types of foods pupil should eat to avoid vitamin A deficiency. Teachers were trained on skills to use participatory approach in teaching nutrition to pupils by using locally available foods. A manual was given to each school to help teachers plan 1 lessons.

Intervention	Rationale	Goal	Target	Implementation process
IR1: Increased availability of school-based health, hygiene, and nutrition services.				
				<ul style="list-style-type: none"> • BCC: A BCC component was included to focus on specific behaviors. Information, education and communication (IEC) materials were developed with posters, leaflets, billboards and tape-recordings of plays. Bilharzia/schistosomiasis prevention activities through BCC were important as re-infection could raise the prevalence of bilharzia/schistosomiasis. All programs on bilharzia/schistosomiasis treatment should have a strong component on prevention.
IR2: Increased quality of the school environment related to SHN.				
Water, sanitation, and hygiene (WASH)	<ul style="list-style-type: none"> • Lack of safe potable water, basic sanitation and hygiene in schools adversely affects performance and continuity in schoolchildren. “About 1 in 10 school-age African girls do not attend school during menstruation or drop out at puberty because of the lack of clean and private sanitation facilities in schools” [28]. • A baseline study of schools in Mangochi district showed that: 16% had no latrines, 58% had no safe drinking water, and 100% had no hand washing facilities. Baseline study of schools in Balaka district showed that: 6% had no latrines, 18% had no safe drinking water, and 100% had no hand washing facilities. A qualitative survey showed: students travelled long distances to fetch water making them late or to miss class lessons; girls missed schools during menstruation due to lack of private facilities in schools; school absence also resulted in WASH-related diseases; girls were being harassed by boys to and from water points; children were unable to wash their hands after visiting the toilet due to no hand washing facilities; and based on observations in schools, facilities were not being used properly despite being available. 	<ul style="list-style-type: none"> • To increase access and usage of safe potable water, functioning latrines, and hand washing facilities in schools. 	<ul style="list-style-type: none"> • 6 to 19 year olds - all school-age children. 	<ul style="list-style-type: none"> • Intervention: Provision of safe potable water, provision of latrines and hand washing facilities, training and BCC activities. • Provision of safe potable water: Water Monitoring Assistants (WMA) identified schools with no safe potable water. Communities were involved in site selection and contributing resources e.g. sand and stones. Boreholes were drilled by contractors and the water quality was tested. Water point committees were formed (50% were women composing of 10 members, a village headman, and an ex-officio member) and trained to deal with boreholes on: maintenance, cleanliness, and water management. Non-functional boreholes in some schools were rehabilitated by WMAs with funding from the program to ensure that all schools had functional water points. Two schools had piped water tapped from other institutions such as the Malawi Development Cooperation (MALDECO) and the Christian Health Association of Malawi (CHAM) hospital. • Provision of latrines and hand washing facilities: Schools with no latrines and hand washing facilities were identified during the program review meetings. Communities were mobilized to provide materials (i.e. sand, bricks, and labor). Materials which required funding were provided by the program including hiring out contractors where the work was supervised by the program coordinators. • Training: Provided through Community-Based Management by officers from 3 key Ministries: Irrigation and Water Development; Health and Gender; and Child Welfare and Community Services. Water point committees had training (5 days) on knowledge and skills in carrying out preventive maintenance of boreholes. Training also involved: fundraising skills, problem solving steps, re-stocking spare parts, record keeping, a system reporting on major breakdowns, upkeep of water points, and preventive maintenance steps. Village Health Committees were trained on hygienic use of toilets so that they could train mothers on good hygiene practices and how to guide children in using a toilet. Training looked at: types of hygiene, good hygiene practices, feco-oral disease and preventive measures, why children do not use a toilet, and toilet use guide for mothers. Hygiene education was taught by health personnel to 2 teachers and 1 HSA in schools to provide knowledge and skills on good hygiene practices which would be taught to children in their respective schools. PEAs and health zone coordinators were trained as trainers on cholera prevention and management.

Intervention	Rationale	Goal	Target	Implementation process
IR2: Increased quality of the school environment related to SHN.				
Water, sanitation, and hygiene (WASH)				<p>Training was prior to the rainy season (when cholera spreads) in respective educational zones where 2 teachers per school and a HSA were trained on knowledge and to conduct cholera campaigns in schools/communities.</p> <ul style="list-style-type: none"> • BCC activities: BCC activities were used to ensure that water and sanitation facilities were properly used and good behaviors practiced. Clean school competitions were held which also promoted schools. The 3 best schools in each zone were given gifts for their efforts to enhance hygiene practices in schools. Leaflets and posters highlighted proper use of toilets, hand washing after using the toilet, and to avoid vandalizing the facilities. Tapes on hygiene were produced and distributed in schools with radio players so that teachers could play them in hygiene classes. A guide on toilet use for children was developed and distributed to mothers. A community local radio station disseminated cholera prevention messages developed by program staff and partners from health.
IR3: Improved knowledge, attitudes and interest in health services and health protective behaviors/practices.				
Nutrition education	<ul style="list-style-type: none"> • Some Malawian children are not well nourished due to low-income, displacement, drought, and lack of nutrition knowledge. • Children are likely to eat less food or food that is not nutritional. • Lack of micronutrients such as iodine, iron, vitamin A and vitamin C can cause serious health problems for children in later life. Without sufficient nutrition the chances of common illnesses such as coughs and diarrhea increase in children and their development hindered. • Children can be supported to start eating nutritional foods. Studies have shown that good nutrition leads to improved wellbeing, improved learning ability and overall better school performance in children [29]. 	<ul style="list-style-type: none"> • For children to understand the benefits of eating nutritional food. 	<ul style="list-style-type: none"> • 6 to 19 year olds – all school-age children. 	<ul style="list-style-type: none"> • Intervention: Training teachers and nutritional education to children. • Teacher training: Trainers from the Ministry of Health and Education were identified. Teachers were identified by their headteachers to attend training. Training was conducted at the educational zone level. Trainer of trainers included clinical officers, health zone coordinators and primary education officers. Trainers trained teachers where 3 teachers were drawn from each school. A 3-day training on nutrition education was conducted and teachers were trained on how to teach children about good nutrition. • Nutritional education: Training was designed as participatory for children to be actively involved in the sessions. The key message was “eat plenty of food and eat a variety of foods”. A training manual was used by the trainers and was modular in nature with activities that encouraged children to be active promoters of good nutrition in their family and community. Exercises in the manual included an introduction game on nutrition education with a ball made up of plastic paper where the ball was passed to children who were in a big circle and each child had to state their name and favorite food when the ball was passed to them. Children were encouraged to bring locally produced foods for learning purposes and to learn from each other. The manual had 5 modules: (1) Eat a variety of food: To eat various types of food to grow (beans, meat, fish, and eggs) have energy (rice, maize, and oil) and to stay healthy (fruits, vegetables, eggs and milk). (2) Vitamin C: Children were encouraged to eat foods rich in vitamin C (oranges, green leaves, and eggs) which protect children from disease (coughs and colds). (3) Iron: Children encouraged to eat iron-rich foods to prevent anemia (red meat, green leaves, beans, peas, and eggs). (4) Vitamin A: Children were encouraged to eat foods rich in vitamin A to prevent poor eyesight (carrots, milk, and oranges). (5) Iodized salt: Children were encouraged to eat food with iodized salt to prevent slow growth and poor performance at school.

Intervention	Rationale	Goal	Target	Implementation process
IR3: Improved knowledge, attitudes and interest in health services and health protective behaviors/practices.				
<p>HIV prevention – Cool Parent Guide</p>	<ul style="list-style-type: none"> In Mangochi district, a BCC situation analysis conducted in 2002 revealed the mean age of sex debut to be at 10 years. Sexual intercourse often begins as experimentation with friends during playtime, and then becomes an integral part of the relationship between boyfriend and girlfriend in the teen years. Children therefore need early behavioral interventions to reduce their risk of contracting HIV. Studies have shown that children who learn healthy practices early before they develop unhealthy practices are more likely to adopt and maintain these healthy practices [30]. Save the Children's SHN program implemented the 'Cool Parent Guide' to promote parent and young child communication on issues relating to sexuality in the advent of HIV/AIDS. 	<ul style="list-style-type: none"> To delay sex debut among children to reduce their risk of contracting HIV/AIDS and to improve parent-child communication. 	<ul style="list-style-type: none"> 7 to 11 year olds - schoolchildren. 	<ul style="list-style-type: none"> Intervention: Formative research, Trials of Improved Practices (TIP), selection and training, and distribution and use of the Cool Parent Guide. Formative research: Conducted in 2000, early sex debut among children were due to: the desire for material things e.g. to buy snacks at school, soap, lotions and clothes. Girls would engage in sex for money with older men. Other reasons for early sexual debut were peer pressure, poverty, and lack of parental advice. Trials of Improved Practices (TIP): A number of strategies were tried in various schools in Mangochi district to see which one would be feasible and the most effective intervention to reverse the risk of danger of contracting HIV/AIDS in schoolchildren. The trials were valuable to identify program recommendations that worked in this context and how to promote it. The trials were: income-generating activities (IGA), formation of friendly groups, and parent-child communication. Trial findings were: that young children trusted and believed in their parents; parents do not talk to children about HIV/AIDS as it is a taboo and they lack the basic knowledge; communication between parent and child is usually one-way; parents found it easier to talk to children when they were younger than older; children were happy if the parent would talk to one child in a quiet place and in a friendly 'cool' manner and that they too could ask questions to their parents. Based on the trials, the parent-child communication strategy was the feasible and effective strategy to fight against HIV/AIDS amongst children. Selection and Training: SMC, PTA and Village AIDS Committee members were screened via a test from the HSAs. Distributors who could read and write were selected and trained for 2 days by HSAs, and headteachers were trained as trainers. Training involved: building rapport, explaining facts on the Guide, and record keeping. All headteachers and HSAs were responsible for schools where the SHN program operated and were also supervisors to the distributors, summarizing reports and providing guidance when distributors needed it. Distribution and use of Cool Parent Guide: Distributors discussed for an hour with parents (who had children aged 7 to 11 years) the Guide and how to use it. Parents were then able to use the Guide and talk to their children.

Intervention	Rationale	Goal	Target	Implementation process
IR4: Improved community support and policy environment for SHN.				
Safe School Policy (SSP)	<ul style="list-style-type: none"> For positive behaviors in youths, it is critical to have supportive school and community environments. Dialogue and engagement between pupils, parents, teachers, local leaders, and other stakeholders strengthens the role of communities to provide supervision and to improve quality of education services taking into account community concerns and perspectives about children's safety and protection. Lack of safe supportive school and community environments has had negative-effects on children such as: increased rates of pregnancies amongst girls, increased school drop-out, sexual harassment, and other types of child abuse. The SSP acknowledges that responsibility for better child protection goes beyond the education system and attempts to bridge sociocultural distances between education providers and communities serving to harmonize traditional concepts of child protection and community expectations. 	<ul style="list-style-type: none"> To create safe, supportive school environments for children. 	<ul style="list-style-type: none"> 6 to 18 year olds - all school-age children. 	<ul style="list-style-type: none"> Intervention: The intervention was in 4 phases in 67 out of 101 schools which operated in SHN: Building support, exploring safety, harmonizing priorities, and planning together. Training, community sensitization, and a reporting system was also part of the intervention. Phase 1 Building Support: Rapport was built with key community members/leaders to clarify objectives, current safety concerns affecting children and seeking approval/support for the program. Community support involved identifying community leaders/groups that would form potential core groups at the community level to support the process. Meetings were arranged with teachers, school administrators, SMCs, local leaders and schoolchildren. Phase 2 Exploring Safety: As there is no fixed definition on safety, this phase provided the opportunity to understand the different perspectives on safety within a community and its education system. Separate meetings were held with different members of the school community (i.e. teachers, local leaders, parents and schoolchildren), to allow members to freely express their view in focus groups discussions to explore their ideas in an open/safe school environment and to identify prevalent problems which threaten the safety of the school environment. Phase 3 Harmonizing Priorities: Safety priorities generated by community members were analyzed to identify similarities and overlaps. A committee with representation of each community member group was formulated (12 members: 2 teachers, 1 headteacher, 1 local leader, 1 parent, and 2 schoolchildren) and roles were spelt out (i.e. drafting policies, implementation, lobbying, monitoring, and feedback to their own group). Phase 4 Planning Together: The committee met to: refine roles, agree on positions, review priority safety issues, formulate policies in consultation with their own groups, and to agree on the modalities of monitoring the process. Based on the problems identified, each school had their own policy. Training & Community Sensitization: The committee members underwent a 2-day training session trained by PEAs (who had earlier undergone training of trainers on a 3-day course) to effectively implement the policy, and how to do monitoring and reporting. Full involvement by schoolchildren in making decisions to the policy implementation was emphasized. After training all parents and schoolchildren were sensitized on the policy. PEAs also monitored and supervised the committees once duties were discharged. The policy was posted on school walls where everyone was able to see what had been agreed under the policy. Reporting System: Schoolchildren were encouraged to report any cases of abuse or unsafe conditions to any member or their specific representative (if they felt uncomfortable talking to anyone else) within the SSP committee. Members would then meet to decide the actions on the reported case. A report would then be produced on the problem, the solution taken and who was involved specifically for the solution. This report was collected by PEAs and submitted to Save the Children for documentation.

Annex J: Rapid assessment and decision charts for schistosomiasis and soil-transmitted helminthiasis

Stage 1: Epidemiological survey

Sampling for soil-transmitted helminthiasis (STH)

Divide the country or district in ecologically homogeneous areas and consider for rapid assessment those where STH transmission is suspected. Choose 5 to 10 schools in each area. In each school, select 50 children from any of the three upper classes (where the infection rates will be the highest). Take a stool sample from each child and examine it for presence and number of STH eggs using the Kato-Katz method (a method which tests the appearance of helminth eggs in human feces through smearing the feces and observing the eggs through a microscope). In the same sample you will also see the eggs of intestinal schistosomes if they are present.

Sampling for schistosomiasis

The schools you choose for STH may be in areas that are free of schistosomiasis (which is found only around water). To survey for schistosomiasis, you need to survey specifically some areas that are near lakes, ponds, streams or irrigated areas. First, try to find any old surveys, which will give you an idea of whether schistosomiasis has been identified in a particular locality or area in the past. Then consult health services data which are often the best source of information. If schistosomiasis is suspected, select a few schools close to the water and some a little further away and investigate as follows:

i) For intestinal schistosomiasis: From each school you have chosen, select 50 children from the upper classes and ask each of them to provide a stool sample. Using the Kato-Katz method, examine the samples for presence and number of intestinal schistosome eggs.

ii) For urinary schistosomiasis: Select the schools in the same way. You then have the choice of two methods to assess the magnitude of the problem. The simplest approach is to use the standard questionnaire for visible hematuria (blood in urine): send 50 questionnaires to each school (one per child in the upper classes). Questionnaires can also be used to assess populations outside schools. Alternative methods are: assessment of visible and macrohematuria and/or the use of a urine filtration kit to examine a urine sample for presence and number of schistosome eggs from each of the 50 children selected from the upper classes of each school.

Stage 2: Making a plan

Since the stool and urine samples are analyzed on the day of the survey, it should not take long to collate the results and produce a short report that describes the prevalence and intensity of infection in each school and each area. A software for the input of each child's age, parasitological data, height, weight and Hb, during a survey is available at: www.who.int/wormcontrol/documents/software/en/.

The following decision charts should then be used to determine the appropriate action.

Recommended treatment strategy for STH in preventive chemotherapy*

Category	Prevalence of any STH among school-age children	Action to be taken	
High-risk community	$\geq 50\%$	Treat all school-age children (enrolled/non-enrolled) twice a year**	Also treat: <ul style="list-style-type: none"> • preschool children; • women of childbearing age, including pregnant women in the 2nd and 3rd trimesters and lactating women; and • adults at high risk in certain occupations (e.g. tea-pickers and miners).
Low-risk community	$\geq 20\%$ and $\leq 50\%$	Treat all school-age children (enrolled/non-enrolled) once a year	Also treat: <ul style="list-style-type: none"> • preschool children; • women of childbearing age, including pregnant women in the 2nd and 3rd trimesters and lactating women; and • adults at high risk in certain occupations (e.g. tea-pickers and miners).

* When prevalence of any STH infection is less than 20%, large-scale preventive chemotherapy interventions are not recommended. Affected individuals should be dealt with on a case-by-case basis. **If resources are available, a third drug distribution intervention might be added. In this case the appropriate frequency of treatment would be every 4 months.

Recommended treatment strategy for schistosomiasis in preventive chemotherapy*

Category	Prevalence of any STH among school-age children	Action to be taken	
High-risk community	$\geq 50\%$ by parasitological method Or $\geq 30\%$ by questionnaire for visible hematuria (urinary schistosomiasis)	Treat all school-age children (enrolled and non enrolled) once a year	Also treat: <ul style="list-style-type: none"> • adults considered to be at risk (pregnant and lactating women, groups with occupations involving contact with infested water- fisherman, farmers, irrigation workers, and domestic workers).
Low-risk community	$\geq 10\%$ and $< 50\%$ by parasitological method Or $< 30\%$ by questionnaire for visible hematuria (urinary schistosomiasis)	Treat all school-age children (enrolled/non-enrolled) once every two years	Also treat: <ul style="list-style-type: none"> • adults considered to be at risk (pregnant and lactating women, groups with occupations involving contact with infested water- fisherman, farmers, irrigation workers, and domestic workers).
Very low-risk community	$< 10\%$ by parasitological method (intestinal and urinary schistosomiasis)	Treat all school-age children (enrolled/non-enrolled) twice during their primary schooling age (e.g. once on entry and once on exit)	Praziquantel should be available in dispensaries and in clinics for treatment of suspected cases.

Annex L: Drug usage for iron and vitamin A supplementation, and deworming

Drug usage for iron supplementation

Recommended dose:
Ferrous fumarate 200mg plus folic acid 0.20mg.

Administration:

The iron tablet at the given dose should be swallowed with water. Primary school children (aged 6 to 12 years) should take 2 tablets on 2 separate days each week for 16 consecutive weeks. This schedule should be followed once per year. If other family members wish to take iron tablets they should be advised to consult a doctor. Pre-school children (aged 4 to 5 years) should also take iron tablets following the same schedule. If young children experience difficulties in swallowing the tablet, the tablet may be divided into two halves and each half swallowed with water. If a child is completely unable to take the tablet, that child must be dropped from the iron supplementation program.

Side-effects:

Iron tablets may sometimes cause nausea, abdominal discomfort, constipation, diarrhea, or black-colored stools, none of which pose any danger. However, if any of these problems become more frequent, then a child should stop taking the iron tablets for 2/3 days and then re-start taking them.

Caution:

Excess doses of iron may cause harm for children. Children should be warned to avoid taking additional iron that is not recommended by the program or not on the advice of a doctor.

Drug usage for vitamin A supplementation

Recommended dose:
One vitamin A capsule, 200,000 IU twice per year, 6 months apart.

Administration:

One vitamin A capsule of 200,000 IU should be swallowed with water. Primary school children should take one capsule twice per year. Children 1 to 5 years old shall take one capsule twice a year, one on National Immunization Day and the other during the vitamin A campaign. Other family members should only take vitamin A capsules on the advice of a doctor.

Side-effects:

Vitamin A has no known side-effects. Children easily digest the capsules.

Caution:

Excess doses of vitamin A may cause harm for children. Excess vitamin A is stored in the body and may become toxic thus, it is essential that no more than one capsule should be administered to each child on each occasion. In the first trimester of pregnancy, vitamin A can harm the baby. If there is a risk that teenage girls are pregnant the vitamin A capsule should not be given.

Drug usage for deworming soil-transmitted helminthiasis

Recommended dose:

400mg of albendazole tablet (single dose) or 500mg of mebendazole tablet (single dose).

Mechanism:

Albendazole/mebendazole blocks the worm's glucose absorption process and the worm dies of starvation.

Administration:

Each child should be given one tablet (400mg chewable tablet of albendazole or 500mg chewable tablet of mebendazole). For children between 1 to 3 years of age, the tablet should be crushed and mixed with water. Primary school-aged children (6 to 12 years) will take one deworming tablet once a year if the prevalence of worms is >20% and <50%, or twice a year if the prevalence is above 50%. Pre-school children (aged 2 to 5 years) can also take the same tablet once or twice a year depending on the prevalence of worms. Make sure the child chews the tablet in front of the teacher. Providing clean fresh water after chewing the tablet can also help.

Side-effects:

Albendazole/mebendazole has no known serious side-effects, because they are easy to digest. However, in rare cases they can cause diarrhea, nausea, and temporary abdominal pains or even vomiting. Providing an oral saline solution is enough to solve the problems. However, if children have severe worm loads, the first round of treatment can cause abdominal pain. In areas known to be heavily affected with STH, the side-effects should be explained to teachers and families so that they are aware the symptoms are not due to the deworming drugs but the result of the dead worms being expelled from the body. The child should lie down in the shade until they feel better and also be given clean fresh water to drink.

Caution:

Albendazole/mebendazole is not advised for pregnant women in the first trimester or for children less than 12 months of age. Albendazole/mebendazole should not be used in cases of jaundice or high fever. The teacher should check before administering the drug whether children have any history of the above conditions. If a child is sick or unwell on the day of deworming, do not treat them for deworming. This is not due to the side-effects of the deworming tablet but to prevent the belief that the deworming tablet has caused the illness. Wait until the child is well and then treat them. No child should ever be forced to take the tablet. Explain to the child why the tablet is important and gently convince the child to take the tablet.

Drug usage for deworming bilharzia/schistosomiasis

Recommended dose:
600mg praziquantel tablet.

Administration:

Each child is first measured either using a weighing scale or dose pole to determine the dosage for deworming, and accordingly may be administered 1 to 5 tablets of 600mg praziquantel. Deworming takes place once every year if the prevalence of worms is $\geq 50\%$ or once in two years if prevalence is $\geq 10\%$ and $< 50\%$. Both enrolled and non-enrolled children are treated. Make sure the child swallows the tablet(s) in front of the teacher. Providing clean fresh water after swallowing the tablet(s) can also help.

Side-effects:

Praziquantel has no serious side-effects. It can taste bitter; and cause nausea and abdominal pain. Other side-effects are headache, dizziness, malaise (physical discomfort), and rarely rash or fever. However, if children have severe worm loads, the first round of treatment can cause abdominal pain. In areas known to be heavily affected with bilharzia/schistosomiasis, the side-effects should be explained to teachers and families so that they are aware the symptoms are not due to the deworming drugs but the result of the dead worms being expelled from the body. The child should lie down in the shade until they feel better and also be given clean fresh water to drink.

Caution:

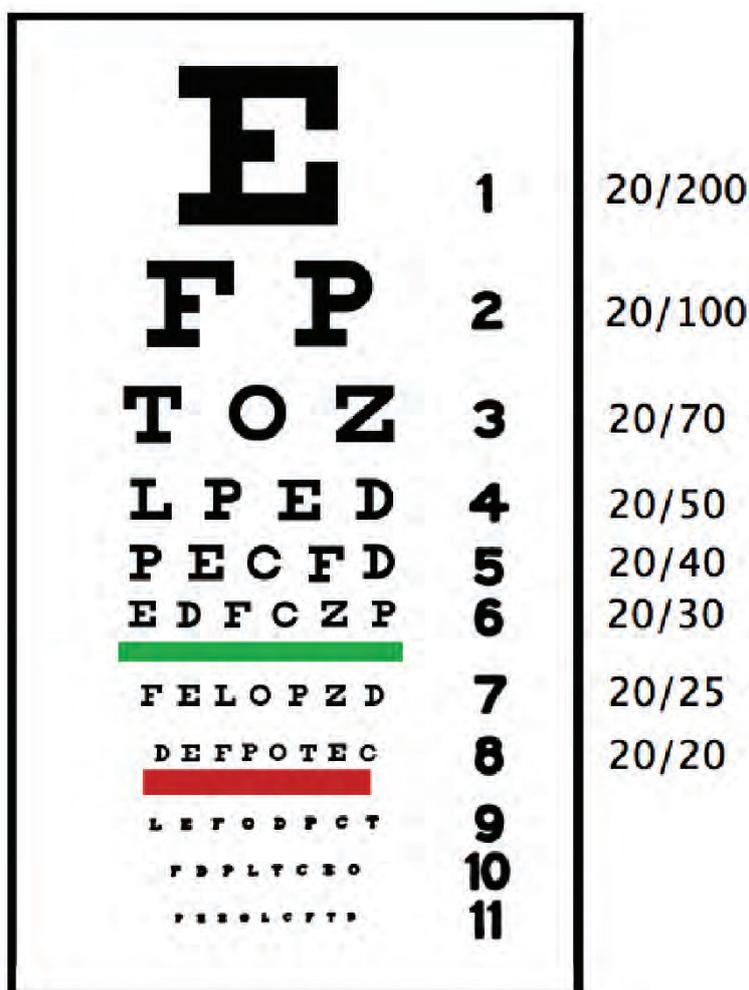
If a child is sick or unwell on the day of deworming, do not treat them for deworming. This is not due to the side-effects of the deworming tablet(s) but to prevent the belief that the deworming tablet(s) have caused the illness. Wait until the child is well and then treat them.

Annex M: Vision screening using an E chart or Snellen's chart

Standard steps to test for vision in children

1. There are 2 types of charts which can be used to test for vision: the E chart and the Snellen's chart. The E chart should be used to test the vision of those children who are not yet able to read the alphabet or are too young to read the alphabet. This chart has the letter E presented in different directions (up, down, left and right) in a series of 9 lines. The Snellen's chart should be used for children who can read the alphabet. This chart has block letters presented in a series of 11 lines (see diagram). There are different versions of the E chart and Snellen's chart and depending on the version the measurements of visual acuity vary slightly. The tumbling E and traditional Snellen's are used here (see diagrams below).
2. The distance required to test for a child's vision is based on the size of the chart: For a large size chart (original vision chart), the child needs to sit 20 feet or 6 meters away. For a small size chart (half the size of an original vision chart): The child needs to sit 10 feet or 3 meters away.
3. It is essential that there should be adequate light for the child to view the vision chart and good natural light on the chart.
4. The child should sit upright, straight, and not lean forwards or backwards.
5. The vision chart should be positioned at the child's eye level which is at the 4th line of the chart. The distance from the child and the chart is based on the chart size (see above for distance measures).

Traditional Snellen's Chart



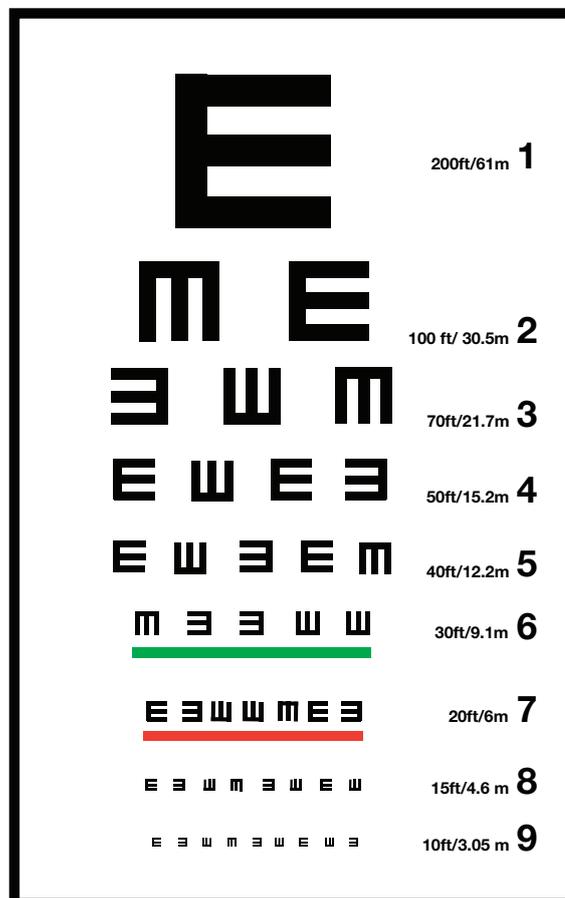
6. Each eye should be tested separately. When testing one eye, the other eye should remain completely covered with the child's hand or with a piece of card. The child should be told not to look through the hand or card with the covered eye and that they should only be able to see through the uncovered eye.
7. Ask the child to close the left eye with the palm of their left hand (or to hold a piece of card with their left hand over the left eye) in order to test the right eye. The child should then be asked to read the chart starting from the first (top) row down. For the E chart the child should indicate which way the limbs are facing for each letter E (verbally or by pointing) from top to bottom of the chart and line by line.
9. If the child is not able to read a letter on a line, ask them to read another letter on the same line. If the child is not able to read any of the letters on the same line, then the previous line is a measure for the child's vision. In the Snellen's chart line 8 from top refers to normal vision, while in a tumbling E chart line 7 from top refers to normal vision.
11. Visual acuity for the tested eye is then recorded as a fraction. The numerator refers to the distance between the chart and the child (20 feet or 6 meters). The denominator is the distance in feet/meters at which a child with no impairment should be able to see the chart - this number is provided next to each row of the chart. Visual acuity for normal vision is 20/20 (6/6) to 20/60 (6/18); low/impaired vision is less than 20/60 (6/18).

Steps 7 to 11 should then be repeated for the other eye.

10. For a child with low or impaired vision, the teacher should:

- a) note that the child does not have normal vision;
- b) refer the child to an eye specialist; and
- c) ensure that the child is moved to the front of the class so they are able to see the blackboard.

Tumbling E chart



Annex N: Typical items required in a first aid kit/pupil treatment kit

Drugs:

1. Paracetamol.
2. Antihistamine (Histacin).
3. Anti-inflammatory.
4. Tube of antiseptic ointment (Savlon).
5. Bottle of Dettol/Savlon.
6. Bottle of Iodine Tincture.
7. Oral rehydration solution (powder).

Other supplies:

1. Gauze bandage.
2. Sterile cotton.
3. Neo-step Band-Aid.
4. Plain 6 inch scissors.
5. Plain 5 inch tweezers.
6. Zinc oxide plaster with plastic cover.
7. 1/2 inch Micropore rolls.
8. Clinical thermometer.
9. Tourniquet rubber tube.
10. Nail cutter.

Note: Tetracycline and Fansidar were also provided in the FAKs/PTKs in Mangochi.

Annex O: Measures to ensure safe water, sanitation, and hygiene (WASH) in schools

Safe water (for drinking, hand washing, and food preparation)

Source: WHO, 2009 [31].

Disinfection with chlorine is the most appropriate way of ensuring microbiological safety in most low-cost settings. Bleaching powder, liquid bleach, chlorine tablets and other sources of chlorine may be used, depending on local availability. At least 30 minutes' contact time should be allowed after the chlorine is added to the water before the water is drunk, to ensure adequate disinfection. The free chlorine residual (i.e. the free form of chlorine remaining in the water after the contact time) should be between 0.5mg/l and 1.0 mg/l [32]. Free chlorine residual can be measured with simple equipment (e.g. a colour comparator and N,N-diethyl-p-phenylenediamine [DPD] tablets).

Effective disinfection requires that the water has a low turbidity. Ideally, median turbidity should be below 1 Nephelometric Turbidity Unit (NTU) [33]. However, 5 NTU is the minimum turbidity measurable with simple equipment (i.e. a turbidity tube), so this level may be used in practice. If turbidity exceeds 5 NTU, then the water should be treated to remove suspended matter before disinfection, by sedimentation (with or without coagulation and flocculation) or filtration.

Filtration with ceramic candle filters and other technologies that can be used on a small scale may be appropriate for treatment of water in schools that are not connected to piped supplies. Filtration can also be used in facilities that are connected to piped supplies whose quality is not consistently satisfactory [34].

Water used for sanitation, laundry and cleaning floors and other surfaces need not be of such high quality as drinking water. If water below drinking water quality is used for these purposes, it should be in separate, clearly marked containers or distribution systems.

Annex P: Program activities and their related monitoring activities/tools

IR	Activity	Monitoring activities/tools
IR1	Iron supplementation	Baseline and post implementation survey. Treatment registers. Review meetings.
	Pupil treatment kit (PTK)	Review meetings with dispensers and their supervisors. Spot checks at least once per quarter to all schools. Production of monthly problem summary form and amount of medications used. HSAs supervision of school kit operation. Monitoring of the kit by the SMC.
	Vision and hearing screening	Production of summary treatment forms. Reports from specialists. Reports on pupil performance.
	Vitamin A supplementation	Spot checks on treatment day. Review meetings with teachers and supervisors after medication administration. Production of summary forms with number of children who received treatment.
	Bilharzia/schistosomiasis treatment and prevention	Spot checks on treatment day. Review meetings with teachers and supervisors after medication administration. Production of summary forms with number of children who received treatment.
IR2	Water, sanitation, and hygiene (WASH)	Borehole supervision by teachers and water point committees. Supervision of school sanitation by teachers. Clean school assessment and competition.
IR3	Nutrition education	Review survey.
	HIV prevention – Cool Parent Guide	Review meetings. Client Record form. Cool Parent Guide supervisors summary sheet. Safe schools record form. Qualitative reviews.
IR4	Safe School Policy (SSP)	Meetings with teachers and HSAs. SMC records. Target area records. Review Survey.

Annex Q: Lessons learned from the strategies implemented in the SHN program in Mangochi district

Intervention	Lessons learned
IRI: Increased availability of school-based health, hygiene, and nutrition services.	
Iron supplementation	<ul style="list-style-type: none"> • Teachers were confident in administering iron tablets as the intervention progressed. • There were low costs in distributing iron supplementation. • More time and commitment was needed by teachers for iron supplementation and acceptability by children and parents. • More than 10 iron tablets per week were needed to have an impact on Hb levels. • Education performance improved in children in the intervention schools while Hb levels showed no significant improvement.
Pupil treatment kit (PTK)	<ul style="list-style-type: none"> • Frequent meetings with school dispensers helped to discuss problems, provide general supervision, and promote good record keeping. Dispensers/supervisors were able to receive immediate feedback from the meetings. • Communities were willing to contribute towards PTK, parents paid a maximum of MK20 per year, and children were able to receive treatment throughout the year. • According to parents, some children reported to school when sick as they would receive treatment at school. • School break time was used to minimize disturbance of lessons. • Teachers observing children taking medication such as Fansidar (SP) at school increased compliance in taking medication rather than giving medications to be taken at home. • Training teachers to replace those who had moved or died proved expensive. It was also difficult to minimize the movement of teachers. • According to the national policy in Malawi, efficacy of SP was reduced and only given to pregnant women as a prophylaxis. Removing SP from the PTKs with no substitute being given led to an outcry within the communities. Members of ADCs wanted to see children receiving treatment for malaria at schools.
Vision and hearing screening	<ul style="list-style-type: none"> • A simple/inexpensive activity that was carried out by teachers. • The E chart was user-friendly and was used by children who were not able to read. • Simple innovations such as local materials i.e. plastic bottle filled with sand were used to check the hearing of children. • Due to inadequate staff capacity children were not receiving adequate attention by teachers. • Giving teachers more skills on how to deal with children with learning abilities proved a challenge as teachers had to handle normal classes alongside assisting children with difficulties. • Due to high costs, there was a 12 month delay in giving out hearing aids. Difficulties were encountered to provide free eye glasses to children where only one donation was made from Clear Vision US. • If the principle of inclusion is to be realized, the Ministry of Education needs to ensure that enough attention is given to children with problems.

Intervention	Lessons learned
IR1: Increased availability of school-based health, hygiene, and nutrition services.	
Vitamin A supplementation	<ul style="list-style-type: none"> • Logistical problems occurred as distribution-age varies in class, making it difficult for teachers to isolate targeted children. • The intervention was easy to administer and supplementation did not take up too much of the teacher's time. • Vitamin A capsules were child-friendly and can be chewed. • Vitamin A can improve Hb levels in schoolchildren.
IR2: Increased quality of the school environment related to SHN.	
Water, sanitation, and hygiene (WASH)	<ul style="list-style-type: none"> • Frequent supervision for water point committees by WMAs sustains functioning of boreholes and water point committees. • Complementary activities were needed e.g. UNICEF supporting training to rural shop owners to re-stock borehole spare parts. • Community participation in resource mobilization brought in a sense of ownership. • Reporting malpractice to sanitary facilities (i.e. vandalism of hand washing/borehole parts) ensured continuous functionality of functions
IR3: Improved knowledge, attitudes and interest in health services and health protective behaviors/practices.	
Bilharzia/schistosomiasis treatment and prevention	<ul style="list-style-type: none"> • The bilharzia/schistosomiasis treatment exercise should be made an attractive event to improve coverage. • Provision of Likuni (porridge) or something to eat on the day of treatment reduced side-effects. • Parent/guardian participation helped the success of the treatment exercise.
Nutrition education	<ul style="list-style-type: none"> • Teachers can be motivated to teach nutrition if time is allocated to nutrition education in the primary school curriculum. • Children can be motivated to learn about good nutrition through school gardens.
HIV prevention - Cool Parent Guide	<ul style="list-style-type: none"> • Increased counselling sessions and enough distributors were needed through regular monitoring visits for parents. • As few men took part, ways in involving more men to talk about children needed to be explored. • Proper civic education was needed as parents failed to perceive the immediate benefits of the Guide to other needs such as food. • Due to low literacy levels, the Guide needed to be user-friendly towards less literate parents.
IR4: Improved community support and policy environment for SHN.	
Safe School Policy (SSP)	<ul style="list-style-type: none"> • As a priority, regular reports by committee members needed to be done. • There needed to be equal pupil representation in committees to allow them to speak and not be outnumbered. • A crucial component of the intervention was to sensitize the community. • Adequate follow-up mechanisms needed to be set up to look at pupils returning to school following the committee's intervention.

