



School Health Integrated Programming

Teachers' Handbook for Inclusive School Health and Nutrition



Contents:

Introduction to SHN.....	3	Module: Vision Screening.....	17
Introduction to the manual.....	4	Aim	17
Acknowledgments.....	4	Refractive Error	18
I: Overview of School Health & Nutrition	5	Endemic Eye Disease	18
Aim	5	Trachoma	18
FRESH Framework	5	Vitamin A Deficiency Disorders (VADD)	19
Links between SHN and educational outcomes	6	Concept	20
The Importance of Inclusion	6	Learning outcomes	20
SHN Administrative Structure	8	Teaching sessions	20
II: SHN Teaching Manual and Materials	9	Good Vision	21
Module: Deworming.....	9	Trachoma	21
Aim	9	Vitamin A Deficiency	22
Background Information	9	Activities for the Classroom	22
Concept	10	Key Points When Planning for Implementation	30
Learning outcomes	10	Vision and Eye Health Screening Monitoring Forms	24
Teaching session	10	Guidelines for Vision and Eye Health Screening in the School	29
Activities for the classroom	12	Implementation in Schools on Vision Screening Day.....	31
Guidelines for Deworming in the School: STH and Schistosomiasis.....	13	Monitoring and Evaluation.....	36
Key Points When Planning for Implementation	13	Module: Water, Sanitation and Hygiene (WASH).....	37
Key Messages for Community Sensitisation ahead of deworming day	14	Aim	37
Implementation in schools on deworming day	14	Background Information	37
How to deal with Side Effects	15	Concept	37
Steps for Deworming	16	Learning Outcomes	38
Praziquantel distribution	16	Teaching session	38
After Deworming Day	16	Activities	39
Monitoring and Evaluation	16		
Deworming Monitoring Forms	17		


Introduction to SHN

Education is one of the most important drivers of economic and societal development, providing a high economic return on an individual as well as regional level. In the era of Education For All (EFA) where every child has the right to attend school and receive a quality education, governments are increasingly investing in the Education sector. In many cases the Ministries of Education are the largest recipient of the national budget. Health and nutrition are globally recognised as significant contributors to achieving education sector goals by supporting students through better health. Nutritional deficiencies, parasitic infections and disability all affect a child's ability to participate and learn at school. Interventions that center on health education, ensure healthy and safe school environments; and direct implementation of therapeutic interventions or screening programs can lead to improvements in educational outcomes. This is achieved through increasing school attendance and supporting long-term cognitive development and capacity. These three strategies of health education, healthy and safe school environment and school based services, together with school policies, make up the four pillars of the FRESH framework (Focusing Resources on Effective School Health). This is a widely supported framework for action launched in 2000 by UNESCO, UNICEF, WHO and the World Bank.

School health and nutrition (SHN) refers to health based programs that are focused on the FRESH framework and that can be implemented through schools. Schools provide access to large numbers of children through existing infrastructure. As teachers are respected and trusted members of the community with regular and reliable access to children, large-scale, coordinated programs may be delivered by teachers to maximise efficiency and cost effectiveness. SHN therefore provides benefits to both education and health sectors, and requires support and coordination from and between both sectors.

In particular, SHN can provide the greatest benefits to the poorest children through addressing health issues which firstly affect the poorest members of society the most, and secondly impair their uptake of educational benefits. SHN therefore serves to address such disparities and provide equity in education. In many countries children who are suffering from a disability are often the first to drop out of school. School health interventions should therefore be designed to be inclusive and equitable to all. Encouraging those children that are not attending school for various reasons to participate on intervention days can extend school health programs to vulnerable children. Developing programs that can help address disabilities, such as vision screening or hearing programs, can target children who are at risk of dropping out of school through suffering from a correctable disability.

Children make efficient and eager agents of health and nutrition messages. These guidelines have been structured to ensure that both children and the wider community benefit. In addition, today's children are tomorrow's parents, accurate information on how to keep a family healthy and well fed will have implications into future generations.



Education is one of the most important drivers of economic and societal development, providing a high economic return on an individual as well as regional level.

Introduction to the manual

This manual is intended as a teacher's handbook for understanding and delivering integrated SHN interventions. The focus is to support SHN activities in schools. The manual is divided into two parts, the first part introduces SHN to the reader and proffers suggestions of how create an equitable school environment. In the second part, SHN interventions on specific topics are included as individual modules with guidelines on implementation in schools. This includes the tools and materials with which to engage students in a classroom setting, providing them with the information they may utilise to lead healthy and productive lives.

The second part of the manual has an integrated approach, and is further divided into modules so that teachers may be supported in implementing multiple school interventions from a single resource. Each module of the manual provides background information and guidelines for the teacher on specific SHN topics, followed by activities through which the teacher can engage their students in the classroom, providing them with the information they may utilise to lead healthy and productive lives. The final part of each module addresses actual implementation of activities such as deworming or vision screening.

This manual is not intended to be exhaustive but to provide an insight into simple, effective and safe SHN activities for primary and secondary school students. The modules detail two interventions in particular, deworming and vision screening. As schools and countries become increasingly familiar with an integrated approach to SHN, additional interventions may be included in a similar modular form such as hearing screening, malaria education or iron fortification.

The final part of the manual provides a list of resources that can be used to build on from the training and information provided here, perhaps in response to a student's questions, or for the teacher or school directors own information.

Acknowledgments

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I: Overview of School Health & Nutrition

Aim

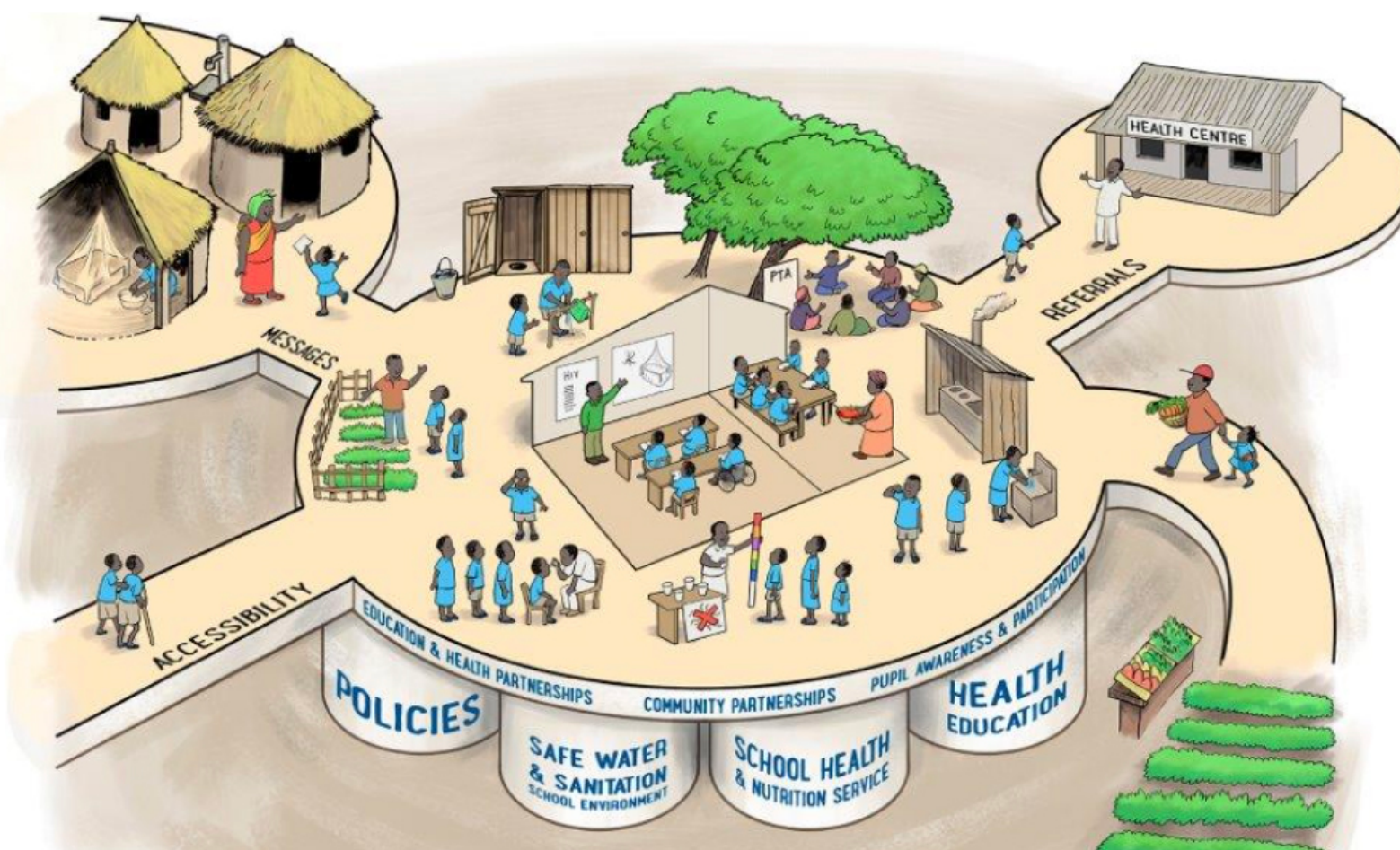
1. To learn and understand the history of School Health & Nutrition (SHN)
2. Understand the impact of SHN on health and educational outcomes
3. Understand who can benefit from well-implemented SHN programs.

FRESH Framework

The **F**ocussing **R**esources on **E**ffective **S**chool **H**earth or **FRESH**, is a framework for action that was launched at the Education Forum in 2000 by UNESCO, UNICEF, WHO and the World Bank. It was a landmark achievement in the recognition of the importance of SHN for the education sector.

1. **School policies:** Establishing health-related school policies is vital to ensure effective and sustainable school health programming.

2. **Safe, supportive school environments:** Creating safe and supportive school environments that provide adequate access to water and sanitation facilities along with other physical and social support is an important component of school health for all, and in keeping children, especially girls in schools. Key examples are providing access to clean water and accessible toilets.
3. **School based health and nutrition services:** Services can include screening for health conditions and disabilities, referral to health centers, deworming, micronutrient supplementation and school feeding, all of which are known to improve educational outcomes. The key to a successful SHN service provision is to ensure the service is simple, safe and can cost-effectively be rolled out for teacher implementation.
4. **Skills-based health education:** health education can improve health behaviors, inform the choices of children and adolescents. Key areas of health education include malaria prevention, HIV prevention, proper hygiene behaviors, and education on nutrition.

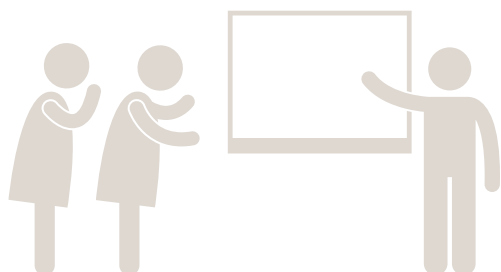


The image shows the FRESH framework in action in the school setting and highlights key school-based health services and health education activities:

FRESH emphasizes the importance of working with a wide range of different groups to create strong SHN programs. This includes schools, health centres, students, community groups, parent-teacher associations, faith-based organisations and civil society organisations. As shown in the diagram on the previous page FRESH provides a set of key principles or ‘pillars’ from which to plan, implement and evaluate effective school health policies and programs in schools.

Links between SHN and educational outcomes

Children from the poorest households are four times more likely to not attend school than those from high-income households. Those with disabilities, from poor communities, orphaned by disease or from conflict areas are the least likely to attend schools (UNICEF, 2015). School health interventions may address this disparity thus benefitting the most vulnerable and poorest children the most. Evidence from around the world shows that SHN programs are one of the most effective ways to ensure that all children can attend school and be healthy enough to learn. SHN programs are targeted to address the most prevalent diseases such as worm infections, malaria and diarrhoeal disease. School feeding programs increase school enrolment and attendance, enabling children to learn and concentrate better while gaining essential nutrients for growth and development. Latrines and hand-washing facilities provide the child with tools with which to protect themselves from infection. Provision of a safe and clean environment has been shown to have a positive impact on school attendance, particularly female students. Finally, ensuring schools are inclusive to all children, and support learning under different circumstances will aid in ensuring education for all. Ultimately, healthy, well-nourished children will be more likely to go to school and flourish whilst there.



The Importance of Inclusion

Children with disabilities should be included in all school activities and be treated the same as able children. This includes health screening and interventions as well as in educational settings. The following section is aimed at informing students of the issues around disabilities and impairments in the school environment

Ensuring a school environment which is inclusive of all children can:

- + Help to defend and protect all children from abuse and harm, both inside and outside the school
- + Guarantee the safety and security of children
- + Act to ensure inclusion, respect for diversity, and the equality of opportunity for all children (e.g., girls, working children, children with disabilities, victims of exploitation and violence)
- + Does not stereotype, exclude, or discriminate on the basis of difference

Disability

A disability is a long-term injury or deficiency that affects a person’s ability to interact fully in society. The term “*disability*” can sometimes be interpreted as only including severe physical conditions but it is important to remember that disabilities cover a broad spectrum and are often not evident. It is important for schools, teachers and students to all be welcoming and inclusive of children with disabilities and to encourage all children to school.

The main types of disability are:

1. Physical disability
2. Sensory disability (such as vision and hearing problems)
3. Intellectual disability
4. Mental health.

Physical disabilities.

These are physical conditions that children are born with or long-term injuries that affect their movement e.g. limited use of legs, hands or arms.

Sensory disabilities.

These are conditions that affect **hearing and seeing** and are some of the most common disabilities in children e.g. refractive errors

(needing glasses to read and/or see the blackboard) and hearing impairments (either at birth or through ear infections).

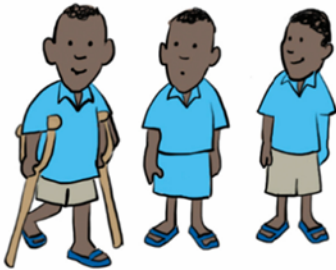
Intellectual disabilities.

These are conditions that affect **learning**, children may be slower to learn to read and write and to do mathematics, and slower to pick-up useful skills like tying shoe-laces and washing hands. There are many causes of intellectual disability including problems during pregnancy and birth, bad nutrition and genetic disorders such as Down syndrome.

Mental health conditions.

These conditions include depression (feeling sad) and anxiety (feeling worried) which can make it hard for children to **concentrate** in class and **remember** information.

All disabilities may range from slight to severe. They can make it difficult for children to attend school and to learn well. Many children who do not attend school have a disability (around one in three).

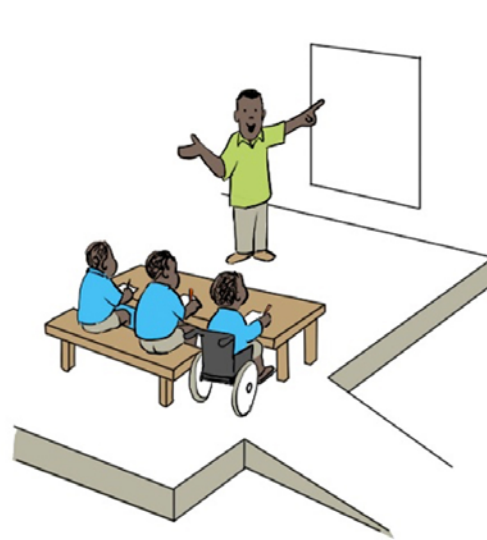


Problems for children with disabilities in schools

Disabilities may **make it harder** for children to learn in the classroom. For example not being able to see the blackboard, or hear clearly when the teacher is speaking, or not able to write due to a physical disability.

These conditions may be addressed to allow all children to learn. Solutions to the above example may be providing spectacles to allow children to see or moving closer to the front of the class to hear or see better.

Disabilities may **affect how children physically access the school building**. The ground around the school may make it hard for children with physical disabilities to reach the classroom, to access toilets, hand-washing facilities and school canteens. Schools must be designed with this in mind to allow **all children** to reach the classroom and to take advantage of school meals and school toilets.



Children with disabilities may be bullied by other children. This can affect their confidence at school and encourage non-attendance to avoid bullies. Disabled children should be encouraged to participate at school and make the school a welcoming place for **all children**, and all students should be made aware of the challenges a disabled child may have and to treat all student equally.

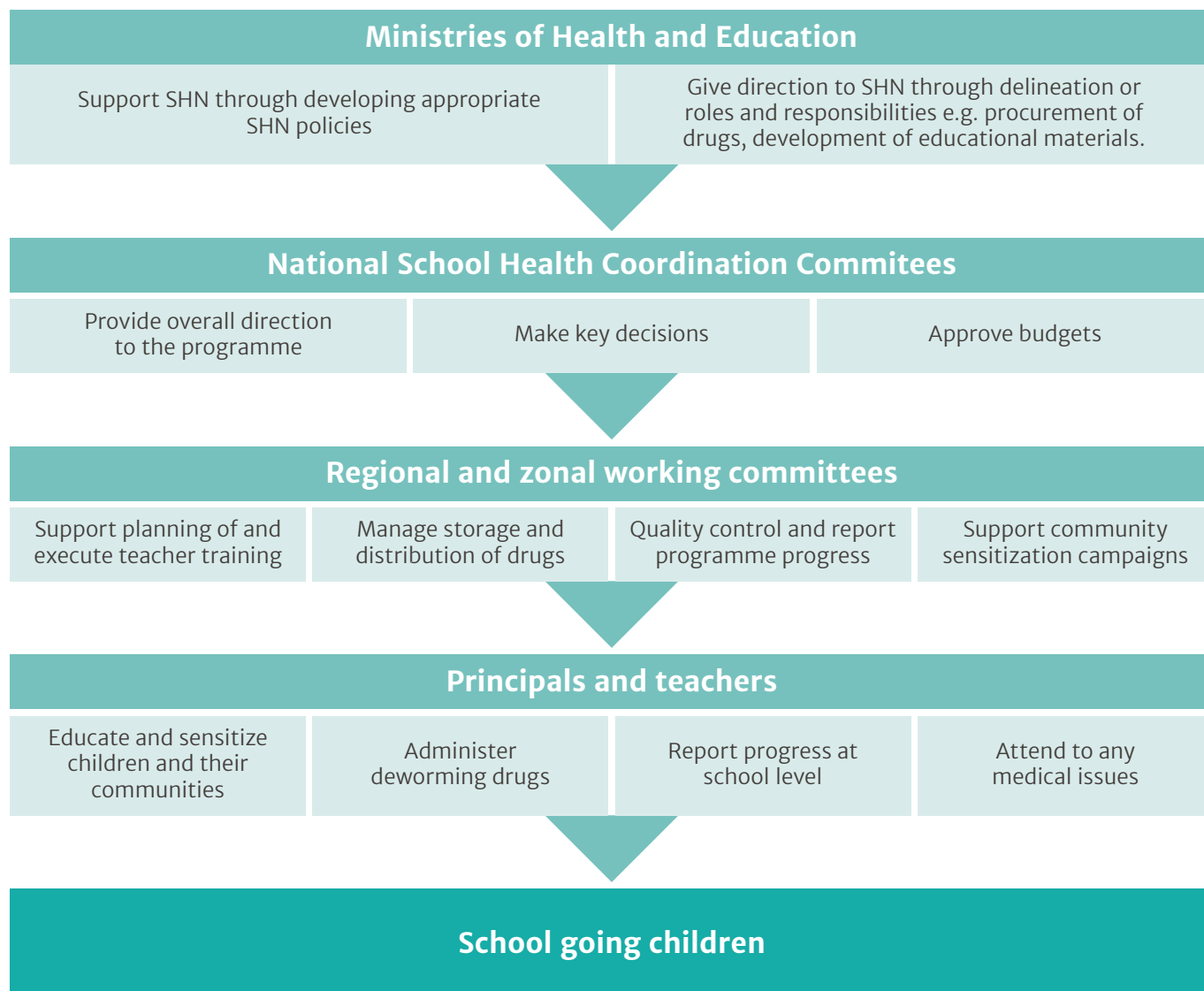
Vision and hearing problems are the most common types of disability **amongst school children**. **Detecting vision problems and finding solutions are detailed in the module on Eye Health**

- + If your school has health screening days, encourage the child to attend for faster treatment. School children should also be encouraged to bring in out-of-school relatives and friends who may have dropped out due to a disability. Until a child has been properly assessed, we will not know whether they have a correctable/uncorrectable disability.



SHN Administrative Structure

In order to successfully implement a large scale, national SHN program, it is essential to have a clear and appropriate structure to a program, with clear roles and responsibilities for each stage of the program. It also provides an indication of who to contact in case of questions comments or issues that may arise at any stage of the program. The figure below shows a standard structure for SHN institutional governance with roles and responsibilities for all stages including drug procurement, delivery, training, community sensitization and reporting.



Another critical component to an SHN program is having an efficient and clear cascaded training structure. The number of training cascades will depend on the size of the country and the program. The figure below shows a typical structure for cascaded training.



II: SHN Teaching Manual and Materials

Module: Deworming

Aim

For students to understand how parasites can infect them, the symptoms of infection, how to get treatment for suspected infection, the importance of deworming and how to protect themselves from infection.

Background Information

More than 400 million school age children worldwide are infected with soil-transmitted helminthes (STH) and 60 million with a schistosomiasis, with an estimated further 1 billion children living in areas stable for transmission for at least one of these helminths. This large burden of disease signifies a considerable loss to development, with infected children at greater risk of school absenteeism, poor cognitive and physical development and fatigue. STH species include Whipworm (*Trichuris trichuria*), Roundworm (*Ascaris lumbricoides*), and Hookworm (*Ancylostoma duodenale* and *Necator americanus*), schistosomiasis is caused by *Schistosoma mansoni*, *S. japonicum*, *S. mekongi* or *S. haematobium*. Eggs from these species are excreted into the environment from the faeces or urine of an infected individual. These eggs are either ingested directly by others through hands and food, in the case of hookworm the eggs hatch into infective larvae that penetrate the skin from the soil. Schistosome eggs that are excreted from an infected individuals near a water body can hatch into larvae that infect snails before infecting humans that enter the water. After infection, the larvae travel to the gut (STH) or into blood vessels that surround the liver, gut or bladder (schistosomes) and grow into adult, egg producing parasitic worms. A large burden of these worms can lead to tiredness and lethargy, to a sore stomach and tummy ache, reduced appetite and in the longer term nutritional deficiencies. In the case of schistosomiasis the effects of infection can lead to a thickening of the blood vessel walls of the gut and bladder where the eggs are excreted and eventual hardening of these organs and potential cancer. Uro-genital schistosomiasis is caused by infection with *S. haematobium*, where eggs

deposited in the blood vessels can lead to damage to the bladder wall and genital tract leading to blood in the urine.

A child who remains infected with worms will be less successful in school and less productive in adulthood compared to uninfected counterparts. STH and schistosomiasis are disproportionately prevalent in poor populations in developing countries, affecting those least able to cope with the disease the most, and contributing to the persistence of poverty in these populations.

Simple, safe, and cheap drugs are available to treat these infections. These drugs have been through extensive safety testing and have been used to mass treat individuals harbouring infection with minimal side effects in countries around the world. Treatment can be with either Mebendazole or Albendazole for STH or praziquantel for schistosomiasis. The WHO now recommends Mass Drug Administration (MDA) to treat school-age children at risk of STH infection (whether they are infected or not), with the frequency dependent on the prevalence of infection in the area. The global goal is to reach annual treatment of 75% of children who are at risk of STH infection or schistosomiasis by 2020. MDA for parasitic worms reduces the prevalence of adult worms in a population, thus temporarily reducing infectiousness of the environment. Regular deworming can thus not only affect treat an individual, but also reduces the infectivity of the environment and risk of reinfection for the population.

Prevention from reinfection is important as a control strategy and should be used to complement MDA. People can prevent infection and reinfection through basic hygienic activities:

- + Washing hands after defecating
- + Washing hands before eating or preparing food
- + Always using a latrine to keep faeces contained away from the environment such as soil and fields, as well as water sources
- + Not entering the water where there are snails (usually around reeds)
- + Wearing shoes

Concept

The following training agenda is aimed at informing students of the dangers of parasitic worm infection, the purpose of a deworming program, and ways in which they can protect themselves through effective hygiene behaviour. It is important to ensure the student learns, understands and performs good hygienic practices to prevent infection and reinfection.

Learning outcomes

After completing this module, the participant will be able to:

1. Understand what a parasitic worm is, and to name the three main types of intestinal parasitic worm.
2. Understand the main effects of a heavy infection with parasitic worms.
3. Describe why deworming is important
4. Understand the importance of hand washing, using a latrine and wearing shoes.

Teaching session

Explain to the students that STH stands for soil-transmitted helminths. These are intestinal worm parasites that are transmitted through soil, hands, and sometimes food which has not been cooked or washed properly and that contain the eggs from the female worm.

Explain that schistosomiasis is caused by parasitic worms that infect following contact with infective water. These worms live in the walls of organs such as the stomach and the bladder, laying many eggs that can cause severe damage to these organs. In the case of *S. haematobium*, heavy infection can lead to blood in the urine.

Infection with these worms leads to tiredness, stomach-ache and swollen tummy's. In the long term there are effects on a student's school attendance and grades, as well as on growth and development as the worms live in the gut and absorb nutrients from food intended for the child.

Parasitic worms

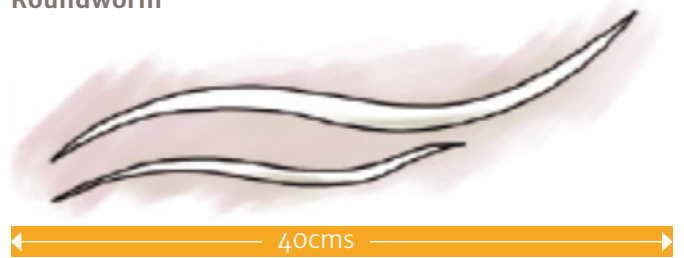
Ask if students know what schistosomiasis, a soil transmitted helminth, or parasitic infection is. Explain that they are worms that live in the stomach or gut, preventing food and nutrients that the children are eating from being absorbed into the body. Infection with worms can make us tired, give us stomach ache and make us feel ill. In the long term, infection can prevent us growing big and strong or even prevent us from attending school and getting good marks.

There are three types of STH infection: *hookworm*, *roundworm* and *whipworm*. They look like the images below. Hookworms have tiny incisors that grip onto the gut wall and can cause blood loss – or *anaemia*. Roundworms are the largest of the worms, sometimes as large as a pencil, or even bigger! They can obstruct the gut wall and prevent it working properly in absorbing nutrition from the food you eat. Whipworms are smaller and bury into the gut absorbing food that you may eat and preventing you getting the nutrients.

Hookworm



Roundworm



Whipworm



Schistosomiasis



Schistoworm

Schistosomiasis is caused by a parasite that lives in the blood vessels surrounding the bladder, the stomach or the gut. They lay many eggs which get stuck and can lead to a response by the immune system (explain 'body' if students are young), and lead to long term health issues if a person remains infected.

How are worm infections spread?

Ask students if they have any ideas about how STH is spread from one person to another?

Explain that the worms lay eggs which leave the gut through the faeces, and can infect other people, or the same people, through the skin, or through hands and food which haven't been washed after coming into contact with egg containing faeces. Hookworm eggs hatch in the faeces, and walking where someone has previously defecated can lead to infection through the foot. Roundworm and whipworm eggs stick to hands and food from the field. Eating with dirty hands, or putting dirty hands near the mouth, as well as not washing or cooking food before eating can pass on infection.

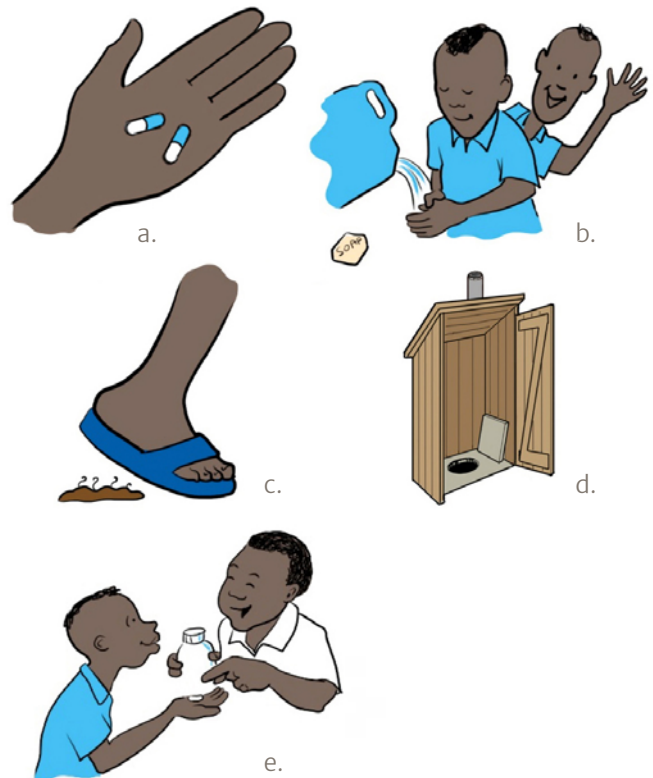
How can we stop parasitic worms?

Worms can be prevented in different ways:

1. Always using a latrine
2. Washing hands after using the latrine
3. Washing hands before preparing food or eating
4. Cleaning baby and before eating
5. Cooking food to kill any worm eggs
6. Wearing shoes
7. Receive deworming treatment at least once a year

Write these on the board. Ask the students why they think these methods will protect them from infection?

Explain that using a latrine prevents other people stepping in the faeces and becoming infected with hookworm, it also keeps faeces away from other people, and hands. Some parasite eggs can last a long time in the environment, which means they can easily be picked up without noticing that you have touched the faeces or stool. Washing your hands with soap after using the latrine cleans them of any sticky eggs, and makes it safe to go play with your friends or to eat. Some worms live in the soil, so you should wash your hands after playing in the soil or gardening. You should always wash your hands before eating, as you are directly putting things into your mouth – you don't want worm eggs for lunch! Wearing shoes can protect you from hookworms that can live in the soil in fields and around houses for a while. They can attach to your skin and crawl in, before they find their way to your tummy! Getting **deworming medication** once a year kills the adult worms in your body, and reduces the number of worms there. These drugs are very safe, and you only need one! Sometimes your teacher may distribute the drugs, but otherwise, go to your health clinic and ask for treatment.



- a. Receive deworming treatment at least once a year
- b. Washing hands before preparing food, eating or using the latrine.
- c. Wearing shoes
- d. Always using a latrine
- e. Take the pills with water

Deworming days

Some countries and areas will conduct 'deworming days' once or twice a year. On these days deworming medicine will be available in the school, and teachers or health workers will be available to distribute the tablets to the children. For STH only one tablet is required to safely and effectively deworm. Anyone can safely take the tablets, even those people who are not infected. It is important to remember to eat a good meal the morning of deworming day, and it may be necessary to bring water to school that day. Sometimes there will be side effects from deworming, but these are not usually severe and will pass. If you don't feel well on deworming day, tell your teacher and they can provide the pill another day when you are feeling well again. These tablets will work quickly to help infected people feel better and have more energy following deworming.

Activities for the classroom

1. Role play:

Ask the students to do a role play on how worms are spread. Divide the class into groups with five members each and give them the following scenarios for the role playing. Make sure they explain how the different scenarios lead to infection with parasitic worms:

- + A child playing in the dirt comes into contact with worm eggs.
- + A child who just defecated does not wash his or her hands before eating.
- + A child who just defecated doesn't wash his hands and then goes and plays tag with other children.
- + Food is brought in from the field and is not washed properly or cooked before serving to the family.

The students can make short plays, practice them and show them to each other. After each role play ask the students:

- + In each case how did the children get worm infections?
- + How did the infection make them feel?
- + What can the children do so they will not get worms in the future?

2. True/False:

This activity can be done with the whole class. Read out the sentences below. Either:

- + Ask the class to call out true or false depending on what they think the statement is;
- + Ask the class to put their hands up if they believe the statement is true, followed by hands up if they think the statement is false;
- + Or label one side of the class as 'True' and one side as 'False'. Get everyone to stand up in the middle of the room and run to whichever side of the room they think the statement is.

Record the answers to each question, or have children record their answers (sometimes it may be easier to choose the answer that most children mention). Go through the questions at the end and give the answers that are provided below. What was the class score at the end?

1. Worms are harmless to children
2. Worms are common and lots of children have them
3. Worm eggs are found in poo
4. You can stop yourself getting worms by washing your hands
5. You know you have worms when your nose itches
6. Children who have worms do well at school
7. Worms can get into your body through bare feet
8. Worms can get into your body through clean water
9. Worms can get into your body from dirty hands
10. Worms are easy to treat with medicine

Answers to True/False:

1. **False** – worms are harmful to children, they eat their food, drink their blood and make them weak and more prone to other serious illnesses like malaria. Worms are dangerous!
2. **True** – worms are common, they are easy to catch and lots of children have them BUT lots of children who are smart and always wash their hands when they are dirty or after using the toilet and keep sandals on their feet NEVER get worms.

3. **True** – worm eggs are found in poo. Children can find out about the life cycle of worms to understand how they can stop eggs and larvae having a chance to get into their bodies.
4. **True** – washing hands is one of the most effective ways to protect yourself against worms.
5. **False** – signs that you might have worms include an itchy bottom, a sore tummy, feeling dizzy or tired all the time, having pale skin, having a large, round tummy.
6. **False** – research has shown that children who have worms often have more days off school than children who don't have worms. Children who have worms often find it hard to concentrate in class because they feel tired or dizzy. If a child has had lots of worms for a long time, they can even stop the child's brain working as well as it should. Children without worms do better at school!
7. **True** – worms can get into your body through barefeet – these worms are called hookworms and their larvae (babies) burrow into your skin through your feet or your bottom if you are sitting on the ground. Another kind of worm that lives in water – schistosomiasis – can get into your body if you drink, swim or wade in water where it's host, a small snail lives.
8. **False** – clean water that has been filtered and boiled or filtered and cleaned with sunlight does not have worms in and is safe to drink.
9. **True** – dirty hands can move worm eggs from dirt on the ground or your poo, into your mouth. Once the eggs get into your body the worms can start to grow in your gut.
10. **True** – worms are easy to treat with medicine that is cheap and safe. This medicine is called deworming medicine and is often given to children at school on the same day. You need deworming medicine once or twice a year to keep you free of worms and you need to practise good hygiene as well to stop worms getting back into your body.

Guidelines for Deworming in the School: STH and Schistosomiasis

The below guidelines list the steps for implementing a deworming day in a school. The steps are similar for areas where STH as well as schistosomiasis, thus the steps below detail treatment for both these infections. Only in certain areas will treatment for both STH and schistosomiasis be necessary. This will be made clear in the training and the drugs received at school level.

Key Points When Planning for Implementation

1. **Selecting a day**
Deworming day should be planned to occur during term time and during a season when most children, teachers and drug supplies will be able to get to all schools. Deworming day may be determined ahead of time at teacher training by the Ministry of Health. It is ideal if all schools within an area can be dewormed on the same day and if children are dewormed regardless of whether they were enrolled in the school or not.
2. **Drug dosage**
An individual has 1 tablet of either albendazole (400mg) or mebendazole (500mg) for STH and in the case of schistosomiasis, 3-5 tablets of praziquantel (600mg per tablet). The quantity of praziquantel tablets is determined on the height of the child according to the dose pole (figure 2). In the case the two types of worms (STH and schistosomes) co-exist in the same area, both treatments need to be done at once.
3. **Receipt and Storage of drugs**
Drugs should be available in the schools ahead of deworming day. Storage arrangements should be clear prior to receipt of the drugs at school level. If drugs are stored at the schools, they need to be stored in a safe, dry and secure storage facility.
4. **Community sensitization**
Campaigns informing the community of deworming activities and dates should run for several months prior to deworming. And all local communities should be aware of the deworming day and who it is to involve (Students and out of school children).

Key Messages for Community Sensitisation ahead of deworming day

It is very important to ensure that communities, parents and children are aware of the deworming day and what to expect. Below are some key points that the school can be sure to circulate and communicate to the community. In addition, it may be good to make some posters to display around the school, and remind the students the week and day before about the deworming day. The materials in the previous section can help the students engage with the deworming day, and appreciate the value in participating.

- + Primary school teachers will provide free deworming tablets to all children on a specified date
- + All enrolled, non-enrolled, pre-school and out of school children can attend deworming day and be dewormed
- + Teachers have been trained to provide these tablets
- + Deworming will make your children healthier and improve their education
- + The tablets are free
- + Children should eat at home on the morning of the deworming day, or bring some food to school to eat before the deworming
- + Health officers will be available to support teachers and parents on deworming day
- + Some side effects may occur such as nausea and fatigue. These should be mild and disappear after some rest.

Implementation in schools on deworming day

The sequence of implementation is important and the following are key points to ensure smooth running.



Key Points:

- + School-based deworming is carried out by two teachers per school who have attended the teacher training session. The trained teachers can also train their colleagues to help in the deworming activities if there are many children to be dewormed in a school.
- + The target groups for deworming include schoolchildren aged around 6 years to 15 years, since the prevalence and the intensity of worm infection are high in this age group. Out of school children are included in this group. Preschool children who are usually infected only with STH can also be dewormed with albendazole or mebendazole.
- + Children will require food with the medication and either the school should provide this or children should be requested to bring some food from home. Alternatively deworming should occur only in the morning, with children having eaten before they came to school.
- + *children who are feeling unwell, or have a fever should have their deworming treatment delayed until they are feeling better. Females who are in their first months of pregnancy should not be treated. Children under the age of 3 should not be treated with praziquantel (for schistosomiasis), as the tablets are very large and there is a risk of choking.
- + Children enrolled should be requested to invite their non-enrolled brothers, sisters, cousins, friends, neighbors etc. to come along for treatment on the appointed treatment day in the school. Community members and teachers can also be dewormed if they request it.



- + A water source should ideally be made available for deworming day for children to have a drink with their tablet. Ask children to bring their own water for deworming day if there is no water source on the school grounds.
- + Children should be asked to wash their hands prior to taking the tablet at a pre-designated hand washing station.
- + Children who are dewormed should stay in school for at least 2 hours following deworming to ensure that they have not experienced any side effects.
- + Children should be distributed with 1 tablet of either albendazole or mebendazole for STH, and 3-5 tablets of praziquantel for schistosomiasis, depending on the height of the child against the dose pole (figure 2).

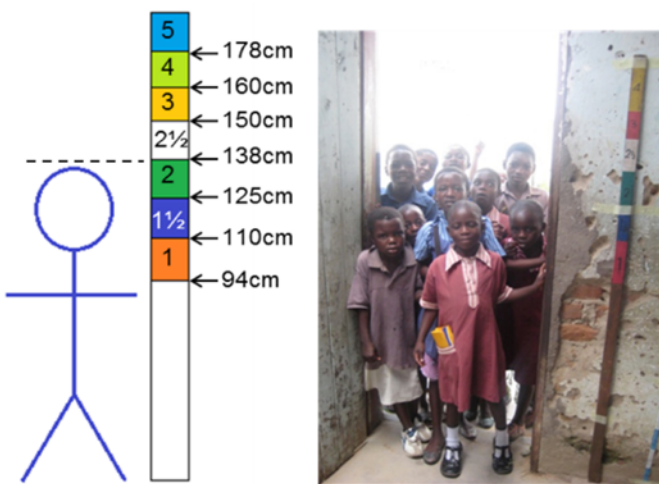


Figure 2: shows the dose pole to be used for determining the dose of praziquantel to be administered in areas where schistosomiasis is prevalent. As weight is proportional to height in most cases, the dose pole provides a rapid assessment of a child's weight.

How to deal with Side Effects

The drugs to treat STH and schistosome infection are very safe, and most people do not experience side effects. Some heavily infected individuals may experience a day or so of discomfort while the worms die and the immune system eliminates them from the body. Side effects are most likely to occur in people with heavy infections of worms. A shady and quiet area of the school grounds should be identified for any children feeling faint or dizzy to lie down in. Provide the child with safe water to drink. Do not cause panic in the school as the reaction may not be due to the deworming tablet.

If side effects persist or seem serious, the affected individual should be taken to a clinic for medical treatment, and the child's parents informed. Have some phone numbers for individuals from health facilities available if possible. Any and all side effects should be recorded in the deworming registers. Taking food before treatment can sometimes help with any side effects.

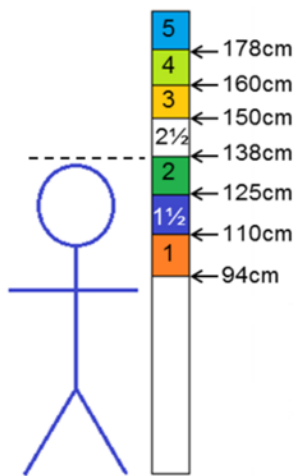
If following the adverse event, it is no longer to continue the program sensibly, suspend the deworming day and contact the Ministry of Health.

Steps for Deworming

Remember: All children have the right to refuse taking the medication, and should not be punished or penalized for their decision.

1. Register the names of all children on the class register book
2. Ask all children to stand in a queue
3. Provide one tablet of mebendazole or albendazole per child
4. Make sure each child swallows or chews the tablet as per instructions
5. Record a '✓' if the child took the tablet; record a 'O' if absent and a 'X' if the child was present but did not take the tablet
6. Write the name of all non-enrolled children, and those in pre-school on the appropriate form as they receive treatment
7. Fill out other relevant information on the forms such as sex.

Praziquantel distribution



Where schistosomiasis is prevalent, praziquantel should be distributed as well as the STH treatment.

1. Remember that children who have not eaten may experience side effects
2. Only children over 6 years old should receive praziquantel
3. Use a tablet pole to determine the number of tablets required per child.
4. Record treatment for enrolled children on the correct form
5. Record treatment of non-enrolled children on the correct form

After Deworming Day

All forms should be fully completed and handed to the school director or principal

The school director should pass these onto the appropriate level above, either in the education or health sector for further collation of total numbers dewormed on the day.

Monitoring and Evaluation

Monitoring and evaluation is an essential component to any SHN program. It takes place at multiple stages of a program to ensure efficiency and that the program is having the desired effect. In addition, it allows informed adjustment to any problems or issues that may arise.

Monitoring and evaluation is to:

1. Identify problems
2. Develop solutions
3. Guide interventions
4. Take action (re-program activities)

For monitoring and evaluation to be effective, it is important that good quality data is recorded and is complete as possible.

Monitoring forms should be provided at the teacher training, with training on how to complete them fully. Completed forms should be passed back to the Ministries of Health or Education, according to the training instructions as soon as possible following school health days.

The following should be tracked as a minimum for deworming programs:

- a. Number of tablets received by each school;
- b. Number of teachers trained in each school;
- c. Date of deworming;
- d. Number of children dewormed;
- e. Number of tablets utilized; and
- f. Number of tablets returned (this should be confirmed).

It is important that all children chew or swallow the deworming tablets. Sometimes this is not possible, and thus the tablet is spoiled, and the child is not dewormed. Number of spoiled tablets should ideally be included in the monitoring for deworming day. A high number of spoiled tablets

may indicate more water is required on deworming day to aid in the intake of tablets, or more community sensitization and health education can help children understand themselves why it is important to be dewormed.

Deworming Monitoring Forms

The below image shows an example of deworming monitoring and evaluation forms, in this case as used in Ghana by teachers. Depending on the situation, teachers will often need to fill out these forms. The adverse events form only needs to be completed in the case of an adverse event occurring on the day.

WORM CONTROL IN SCHOOL-AGE CHILDREN
Drug Distribution Form for **ENROLLED** School-Age Children
To be completed by the **TEACHER** during each treatment day
To be kept at school

SCHOOL		CLASS		DATE	
EMIS CODE		CIRCUIT		DISTRICT	

	Names of children from Register		Sex		Age	Q'ty of Drugs administered	
	M (✓)	F (✓)	M	F		Albendazole	Praziquantel
1							
2							
3							
4							
5							

Summary of this sheet	Number of children		
	Number of children treated		
Total quantity of drugs used			

No. reported adverse reactions		
M	F	Total

Name of Teacher Signature.....

The example above is a form for enrolled children, usually an identical form would also be used to collect data on unenrolled children attending the deworming.

Module: Vision Screening

Aim

For students to understand the importance of good vision and eye health, how poor vision and eye health can affect them, the symptoms of poor vision and eye health, how to receive help to address vision and eye health problems and how to protect themselves from infection from eye disease.

Background Information

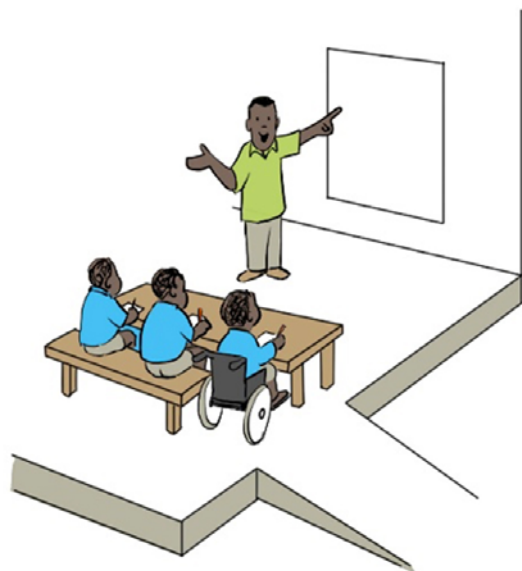
The early years of a child's life are critical in the development of good vision. More than eighty percent of the information children receive about the world comes through their eyes, thus vision plays a major role in the personal, educational and social development of children. Poor vision can affect a child's ability to learn and also influence coordination and personality development. Those who are shortsighted may have difficulties seeing in the distance. At school this may mean that the child cannot see the blackboard clearly, nor participate in physical activities. Children who are longsighted may have difficulties either with seeing to read or concentrating with sustained tasks at near. Additionally, several types of eye disorders (e.g. strabismus or eye turn) and diseases (Vitamin A deficiency disorders, trachoma, cataract) can lead to permanent visual impairment. Children with vision problems should be identified as early as possible, as early detection and treatment increases a child's chances of achieving good treatment outcomes.

How easily children view their world influences how easily they learn through their visual system and perform to their potential at school. Parents may be unaware that their children are having difficulty seeing clearly, so many vision problems may go undetected at home. Young children are unaware of how they should see and so may not be able to tell adults that they are experiencing trouble with their vision. Vision problems generally do not have any pain associated with them.

There are often clues to a vision problem in a child, and teachers are ideally placed to observe children's behaviour on a daily basis. Vision screening at a school level not only enables identification of possible refractive errors but also detection of primary eye disease. Screening cannot take the place of a full eye exam but it is

More than eighty percent of the information children receive about the world comes through their eyes, thus vision plays a major role in the personal, educational and social development of children.

an efficient and cost effective tool to detect major eye abnormalities or refractive error. At a school level, vision screening may be a fast and reliable method of detecting children that need to be referred for a comprehensive eye exam. Screening can confirm that children have the appropriate level of vision required for schoolwork and other activities to optimize their learning.



Refractive Error

In order to see clearly, the image of the object we are looking at must focus exactly on the back of the eye. Refractive error refers to an unfocused image falling on the retina at the back of the eye which causes blurred and /or distorted vision. This is due to the shape of the eye. Refractive error is the most common cause of visual impairment in both children and adults and is generally corrected by spectacle lenses.

There are several different types of refractive error which result in different symptoms. A person with myopia or shortsightedness will see distance objects blurred. A person with hyperopia or long-sightedness may or may not see well in the distance but additionally they may have difficulty looking at objects close to them. This difficulty may be blurred print or it may just feel strained and uncomfortable. Children who are longsighted rarely complain of blur, it is more that their ability to concentrate at near (e.g. such as when reading) is impaired. Another type of refractive error is astigmatism, where someone has difficulty in seeing well and comfortably. This may be experienced at both near and distance.

A common condition requiring spectacle correction is presbyopia. This is a part of the natural ageing process of the eye, where the eye

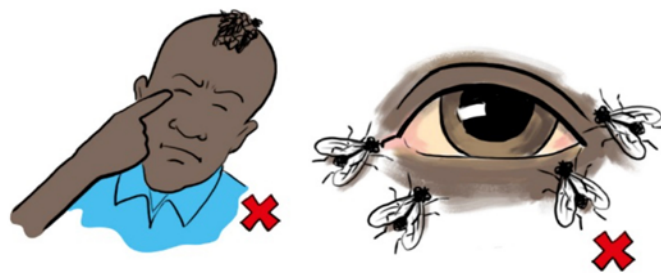
loses the ability to change focus to see objects at near. It is not a disease and affects adults mostly aged 40 years and older.

Endemic Eye Disease

Trachoma

Trachoma is an ocular infection caused by the bacteria *Chlamydia trachomatis*. It is the most common cause of preventable blindness due to infectious eye disease. Trachoma commonly occurs in developing nations where poverty, crowded living conditions and poor sanitation help spread the disease.

Trachoma is very contagious. It is spread by direct contact with someone infected with the bacteria or with contaminated objects, such as clothing or towels. Flies are a major carrier of the bacteria.



Signs of active infection are principally found in younger children aged less than 10 years, later complications such as scarring from repeated infection affects adults.



The presenting symptoms of trachoma may vary. In the first 2 weeks of infection, there may be no symptoms. Then either one or both eyes may become red, sore and sticky with a watery or pus discharge. This stage is called active trachoma. Active trachoma may disappear on its own or require treatment with antibiotics to kill the bacteria. If the infection continues, the inside of the lids will appear red and swollen and may have raised bumps and small white lumps on them. If untreated by this stage, the eyelid can scar. Repeated infections lead to scarring that causes

the eyelashes to turn inward and rub on the eye. This rubbing can eventually scratch the eye and cause a corneal opacity on the front of the eye, which is permanent and blinding.

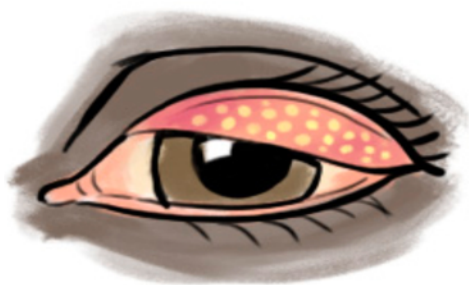


Image shows an eye that has been infected with the bacteria that cause trachoma. It is in its early stages here, with the eye showing white spots and thickening of the eye lid.

People living in dry and dusty areas are particularly prone to trachoma. To protect against infection and eliminate the bacteria, regularly **washing the face and hands is essential**. This will reduce nasal and eye secretions which are potential sources of infection. The secretions also attract flies which can then spread the bacteria. Washing the face and hands regularly, ideally with soap, is good hygiene practice and can prevent recurrent infection which leads to blinding trachoma. It requires **access to sufficient and clean water**.

Good environmental practices such as burying rubbish and avoiding open defecation by using a latrine is important for reducing the number of flies in the community. This then reduces the transmission of both diarrhoea and trachoma.

The strategy by WHO is to eliminate blinding trachoma by 2020 using a strategy known as **SAFE**.

S is for Surgery:

People who have had trachoma for a long time may need surgery to correct the damage to their eyes.

A is for Antibiotics:

People with eyes infected with the germs should take medicine to kill the germs.

F is for Facial cleanliness:

Keeping the face clean keeps flies away, and stops flies carrying the germs to the eyes.

E is for Environmental improvement:

By keeping school and home clean, and using latrines the number of flies can be reduced and therefore lower the chances of spreading the germs causing trachoma.

It is important for children to understand how to protect themselves from trachoma infection. They can also act as messengers to their families, encouraging family members who have trachoma to seek medical attention in the form of treatment or surgery before the effects of blinding trachoma take place.

Vitamin A Deficiency Disorders (VADD)

Vitamin A is used by the body in growth to help fight infection and support the immune system. Vitamin A deficiency is a systemic disease and a major cause of childhood mortality and morbidity in developing countries. It principally affects preschool age children, pregnant and lactating women.

Low levels of Vitamin A in the body results from either a diet deficient in foods that contain high levels of Vitamin A or malabsorption and diarrhoea due to poor water supplies and sanitation.

Foods that have high levels of Vitamin A include: Fish, eggs, leafy greens, meat, orange coloured fruits and vegetables.



Oranges



Spinach



Fish



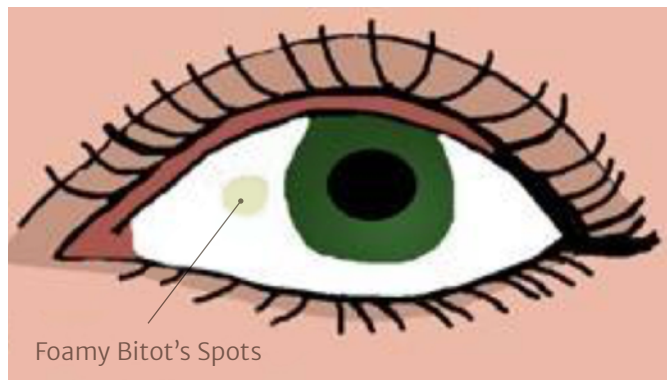
Kale

Foods that are low in Vitamin A include yams, rice, cassava and maize.

The non-ocular effects of Vitamin A deficiency are mostly hidden and we are unable to see them.



The ocular signs and symptoms may include Bitot's spots on the eyeball (see below), night blindness, conjunctival and corneal drying, corneal ulcers and corneal scarring. As VADD is associated with increased mortality there are global initiatives for the control. This includes vitamin A supplementation of pre-school age children and addressing the underlying causes.



Example of Bitot's Spot

If Vitamin A deficiency is suspected, the child should be immediately referred to a clinic where a nurse can give some Vitamin A supplementation.

Concept

The following training agenda is aimed at informing students of the disadvantages of poor vision and eye health, the purpose of a vision screening program and ways in which they can protect themselves from some eye disease through effective hygiene behaviour. It is important to ensure the student learns, understands and performs good hygienic practices to prevent infection and reinfection.

Learning outcomes

After completing this module, the participant will be able to:

1. Describe why vision screening is important
2. Understand what is meant by refractive error.
3. Understand the ocular effects of endemic diseases such as trachoma and Vitamin A Deficiency.
4. Understand the importance of hand and face washing.
5. Name three suspicious symptoms which may indicate a child needs a comprehensive eye exam

Teaching sessions: Trachoma, Vitamin A Deficiency Disorders & Good Vision

Explain to the students that we mostly learn through vision whilst we are young. That some people have different vision to others, that some can see well and others cannot. Explain how poor vision would affect children at school (e.g. not being able to see the board or concentrate at near whilst reading), as well as at home (e.g. not being able to see clearly when playing outside). Not being able to see clearly may make us feel unsafe. We may feel unhappy if we need a carer to lead us around because we cannot walk alone. So poor vision may have a significant effect on our lives through the impact on learning, social integration, personality development.

Explain that vision can be affected by different things. It can be the shape of our eyeballs (refractive error), it can be germs (e.g. trachoma) or it can be dietary issues (e.g. Vitamin A). In addition, accidents to our eyes can cause permanent injury so it is important to think about ways to keep our eyes safe (e.g. teach children not to throw stones).

Flies can spread germs between people as well from rubbish to people. Explain about trachoma and how washing our face and hands every day is so important, not just for our vision but for our general health and to keep infections away.

It is important to talk about treatments for vision loss. That vision loss does not need to be permanent. Discuss the various options for correction of vision loss. Spectacles for refractive error, medicine for trachoma and Vitamin A deficiency, a good diet to prevent the onset of disease. People with low vision may need special aids to see better.

Explain to students that sometimes behaviors can indicate vision problems. When eyes are sore and strained, we may rub them or blink a lot or they may become watery. Headaches can be a sign of eye strain also. Not enjoying reading books may be another indicator of vision problems.

Good Vision

By the end of the session, students should be able to:

1. Name some activities that would be difficult to do without good vision (e.g. learning at school)
2. Know that vision may be improved and it is important to have an eye test to see if spectacles or medicine is required

Why is good vision important?

Good vision is important as we use it for everything – to see at home and to learn at school. We are happy if we can see our family and friends and do not need someone to lead us around.

What are some of the symptoms of poor vision or unhealthy eyes?

Clumsiness, blurred distance or near, rubbing eyes, white pupils, red eyes, headaches, watery eyes, poor concentration are all symptoms of a possible vision problem

What can we do if we think there is a vision problem?

We can ask our parents to take us to the eye clinic or tell the teacher at school. We may need glasses to see better or medicine to treat a disease that is affecting our eyes

Trachoma

By the end of the session, students should be able to:

1. Understand what trachoma is.
2. Understand how trachoma is spread.
3. Identify the two main actions they can take to reduce trachoma transmission.

1. What is Trachoma?

Ask if any students know what trachoma is.

Explain that it is an infection of the eyes, with germs (bacteria). It can eventually lead to blindness as it causes the eyelashes to scratch the surface of the eye – in fact it is the main cause of blindness that might otherwise be prevented.



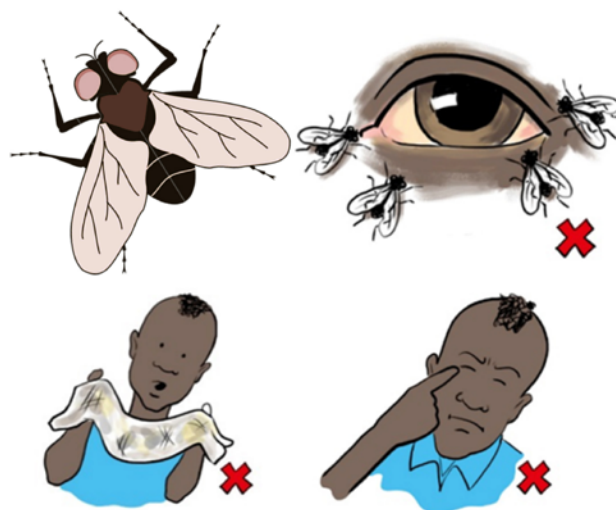
Image shows an eye that has been infected with the bacteria that cause trachoma. It is in its early stages here, with the eye showing white spots and thickening of the eye lid.

2. How is trachoma spread?

Ask students if they have any ideas about how trachoma is spread from one person to another?

Explain that Trachoma can be passed from one person to another through close contact allowing spread of the germs. Trachoma is mainly spread when something touches an infected eye and then later touches an uninfected eye, for example:

- + Towels, handkerchiefs and tissues
- + Fingers
- + Flies



3. How can we stop trachoma?

Ask students if they have any ideas about how trachoma may be stopped

Trachoma can be stopped through different types of action. We can remember these as **SAFE**.

S is for Surgery:

People who have had trachoma for a long time may need surgery to correct the damage to their eyes.

A is for Antibiotics:

People with eyes infected with the germs should take medicine to kill the germs.

F is for Facial cleanliness:

Keeping your face clean keeps flies away, and stops flies carrying the germs to your eyes.

E is for Environmental improvement:

By keeping your school and home clean, and using latrines you can reduce the number of flies. This lowers your chance of catching the germs causing trachoma.

Surgery and medicine are needed in the more extreme cases, but we can all act now to protect against trachoma, and avoid the need for these! Keeping your face as well as your home and school clean will lower your chance of catching Trachoma.

Vitamin A Deficiency

By the end of the session, students should be able to:

- + Understand that Vitamin A is important for eye health
- + Know sources of Vitamin A in their everyday diet

Why is Vitamin A important for our eyes?

Explain to the students that there are lots of vitamins in foods and some foods have more than others.

Explain what can happen if we don't have enough Vitamin A and that the resulting loss of vision is permanent.

What foods have a lot of Vitamin A in them?

Fish, eggs, leafy greens

Who needs to be especially careful with eating good foods for Vitamin A?

Everyone but especially children, pregnant and lactating women

How can we let others in our community know about Vitamin A rich foods and their importance?

The students can go home and explain what they have learnt to their parents, tell their community members at church

Activities for the Classroom

1. Being Blind – Trachoma , Vitamin A deficiency, Uncorrected Refractive Error

Divide class into pairs. In each pair one student is the nominated blind person and one is the carer. Ask each blind person to cover or blindfold their eyes. The “blind” person then should try to navigate their way across the room amongst all of the obstacles – other people and furniture. Then ask the carer to step in and lead the blind person across the room.

Questions for discussion:

- + What was it like for the blind person to be alone in the darkness?
- + Ask the students who cheated and why?
- + How different was it to have a carer to lead them? Focus on the loss of independence if blind
- + Ask the students how they think their lives would become more difficult if they were blind
- + Discuss how blindness affects more than just the person themselves – in this case the carer who needs to stay at home to look after the blind person
- + Discuss this is the ramification of trachoma which may cause blindness in older people (such as their grandparents where the students may become the carer) or Vitamin A Deficiency where the child themselves may become blind.

2. “What’s Wrong?” – WASH, Trachoma, Vitamin A Deficiency, Worms

The teacher splits the class into several groups. Before class, the teacher writes a variety of scenarios / situations on paper (1 for each group) showing situations at school, home or in the community where there is a ‘sanitation’ issue that has been left out of the scenario:

e.g. Tom and Max both went to the toilet before returning to class. Max was talking to Tom as he used the soap to wash his hands. He rinsed and then both returned to class. What’s wrong? (Tom did not wash his hands because he was too busy talking).

The teacher presents each group with their scenario. The group reads the scenario and decides 'what's wrong' in it. Each group then role plays their scenario for the rest of the class who must also decide 'what's wrong'. On agreement, the next group presents their scenario.

When each group has finished role playing their scenarios and it has been decided 'what's wrong' in each, they then present the role play again showing the correct sanitation procedure.

Points for discussion

- + In each scenario why is the sanitation issue that has been omitted important?
- + What diseases can be caused by transmission of germs with poor sanitation?

3. "Good and Bad for Eye Health" – Vision, Trachoma, Vitamin A or all three together

Before class, the teacher writes words, phrases or sentences on strips of paper that are centered around the topics of good sanitation, good foods for eye health, signs or symptoms that someone may need to have their eyes tested

e.g. Sanitation topic – Tidy house, buried faeces, dirty face, flies around eyes

e.g. Vitamin A topic – good and bad local foods – fish, eggs, leafy greens, yams, sweet drinks

e.g. Vision topic – blurred vision, squinting eyes, rubbing eyes, red eyes, discharging eyes











Give each student one phrase each (or one between two). Teacher divides on board, 'Good Eye Health' and 'Poor Eye Health' and then hands out strips of paper that were previously prepared. Each student takes a turn to place their strip of paper under the correct title. The rest of the class decides if it is in the right place or not before the next pair continues.

Points for discussion

- + What are the things that are required for healthy eyes and good sanitation?
- + If we see people in the community with symptoms of poor vision what can we do about it (suggest they need an eye exam)
- + If our parents are cooking foods that are not good for your eyes what can we do about it? (tell them about healthy foods)

4. Face Washing – trachoma, WASH

Ask students if they wash their face their face every day? Make a chart (see below) for the class, and for a week check the faces of the students, putting a smiley face when they come in the morning with a clean face, and a frowny face if their face looks dirty with pus or dust or dirt around the nose or eyes.

Student:	Monday	Tuesday	Wednesday	Thursday	Friday
Jane					
John					

Example face washing chart

Vision and Eye Health Screening Monitoring Forms

The below section shows an example of vision and eye health screening monitoring and evaluation forms. Depending on the situation, teachers will need to fill out some of these forms.

1. School vision screening registration format

Name of School _____ Date of examination _____

SS.N	Name of Student	Age	Sex	Visual Acuity		Findings	Remark
				Right Eye	Left Eye		

2. Reporting format – children enrolled in the school

Zone _____ Woreda _____ Kebele _____

Name of School: _____ Number of students enrolled in the school: _____

Reporting person: _____ Telephone: _____ Reporting period: from _____ to _____

Activity		Age less than 15 years		Age 15 years & above		Total
		Male	Female	Male	Female	
Vision Screening	# of students screened					
	# of students referred					
Health Education	# of health education sessions					
	# of participants in the health education					
Disease Control Activities	# of children assessed for face and hand cleanliness					
	# of children with clean faces N (%)					
	# of children with clean hands N(%)					
	# of latrines (pits) in the school					
	# of face/hand washing facilities in the school					
	Water present in the school Yes/No					

Activity		Age less than 15 years		Age 15 years & above		Total
		Male	Female	Male	Female	
Deworming for Soil Transmitted Helminths - Mebendazole						
Deworming: MEBENDAZOLE	# of children administered with a mebendazole tablet					
	# of children where mebendazole tablet was spoiled					
	# of children refusing a tablet					
	# of children chewing and swallowing the tablet					
	# of adverse effects <i>(please fill individual adverse effects form for each child)</i>					
	Reason why some children were not dewormed					
Deworming for schistosomiasis - Praziquantel						
Treatment for Schistosomiasis: PRAZIQUANTEL	# of children administered with a praziquantel tablet					
	# of children where mebendazole tablet was spoiled					
	# of children refusing a tablet					
	# of children chewing and swallowing the tablet					
	# of adverse effects <i>(please fill individual adverse effects form for each child)</i>					
	Reason why some children were not dewormed					

Number of teachers involved in distributing deworming drugs on deworming day/days	
Total number of days deworming took place over	
Total number of hours all teachers spent deworming	
Comments on how deworming day (s) went overall	

3. Reporting format – non-enrolled children

Zone _____ Woreda _____ Kebele _____

Name of School: _____ Number of students enrolled in the school: _____

Reporting person: _____ Telephone: _____ Reporting period: from _____ to _____

Drug distributor name: _____ Position/Job title: _____

Activity		Age less than 15 years		Age 15 years & above		Total
		Male	Female	Male	Female	
Vision Screening	# of students screened					
	# of students referred					
Deworming	# of children receiving a tablet					
	# of children where tablet was spoiled (spat out)					
	# of children refusing a tablet					
	# of children chewing and swallowing the tablet					
	# of adverse effects (please fill individual adverse effects form for each child)					
Other activities (please describe)						
Total number of days non-enrolled students came to deworming day						
Comments on how non-enrolled deworming was managed and how the day went.						

Guidelines for Vision and Eye Health Screening in the School

1. Detecting Refractive Error

The frequency of child vision screening in different age groups is suggested below. All children should be screened initially. In the following years, the students who did not pass the screening initially should be reviewed, in addition to any new students.

Recommendations for years 1-3 of implementation:

	Age group	
	Primary (5-10 years)	Secondary (11-18 years)
Year 1 of implementation	Screen all children	Screen all children
Year 2 of implementation	Screen <u>new intake</u> . AND re-examination of all children given spectacles the previous year	Screen new intake Re-examine all students given spectacles the previous year and those where teachers have concerns
Year 3 of implementation	As for year 2	As for year 1

Screening: Vision cut-off for screening and screening charts

The Vision Screener is a single line of 5 “E” symbols (sample below).



1. Vision is measured at 3 meters using the Vision Screener chart supplied
2. The child is able to see the target if s/he correctly indicates the direction in which the legs of the “E” symbol are pointing
3. Vision is satisfactory if 3 letters are read correctly.
4. Inability to see 3 of the “E” symbols is recorded as a FAIL. This indicates that the child’s vision is below normal
5. Any FAIL requires a detailed eye examination at a facility with an eye clinic with a suitable eye care practitioner, such as an optometrist or an ophthalmologist, and necessary equipment and infrastructure

(Full method of screening detailed below)

Who should do the screening?

Screening should be undertaken by teachers who have been trained in vision screening. Explanation of screening; asking if child already wears spectacles; ensuring adequate lighting and test distance; testing each eye separately; correctly recording the findings as pass or fail for both eyes are all essential parts of the screening process

2. Management of Refractive Error

If the child fails any of the three vision screening tests they should be referred to an optometrist or refractionist who has the appropriate eye testing equipment and training.

No child with low vision or who is blind should be referred directly to special education or rehabilitation services as they should be assessed first by an ophthalmologist.

Referral Mechanisms

All children referred should be given an information sheet to take home to their parents.

Referral slips given to the child for their parents can be used together with a register at the hospital to track whether the child attended or not

3. Teachers' Eye Health

As the eye health of teachers is so important for quality education, teachers should be included in school initiatives. In order not to interfere with activities focusing on children, it is recommended that teachers are screened either before or after the children are screened.

4. Control of other locally endemic eye conditions in children

Vitamin A Deficiency Disorders (VADD)

Recommended strategies include:

- + Nutrition education to include Vitamin A rich sources of food and how to prepare and cook them
- + School garden to grow Vitamin A rich food
- + Child-to-Child approach with messages that children can take home about breast feeding, Vitamin A rich diet for young children, measles immunization, Vitamin A supplementation of younger siblings, and to ask whether young children in the family have night blindness
- + Provision of clean water for hand washing with provision of soap and towels. In areas with poor water supplies a "leaky tin" or gourd with a hole in the bottom can be used.
- + Health education about personal hygiene and the risks of open defecation;
- + Hand and face hygiene checks at the start of the day

Trachoma

Recommended strategies include:

- + Provision of clean water for face washing, with provision of soap and towels. In areas with poor water supplies a "leaky tin" or gourd with a hole in the bottom can be used.
- + Health education about personal hygiene and the risks of open defecation;
- + Hand and face hygiene checks at the start of the day
- + Child-to-Child approach with messages that children can take home about face washing and avoiding open defecation

Useful resource:

The Healthy Eyes Activity Book – available at...
http://www.sightandlife.org/fileadmin/data/Books/heab_new_e.pdf

Key Points When Planning for Implementation

1. Selecting a day and liaise with the participating eye clinic

Vision Screening day should be planned to occur during term time in the season when most children and teachers will be able to get to all schools. Vision Screening day may be determined ahead of time at teacher training by the Ministry of Health. It is encouraged that all children in the area have their vision screened regardless of whether they are enrolled in the school or not. It is suggested that the participating eye clinic is made aware of the screening date. Significant numbers of students may be referred from the screening day for full eye examinations. If, by chance the optometrist is away for an extended period or not available, this will impact on the success of the referral process.

2. Choose a screening location

The Vision Screener test requires a clear 3 meter distance between the Screener and the student. Good daylight is also required but it is important that no direct reflections from sunlight interfere with seeing the chart.

3. Decide on the screening process

Consider whether the screening will take place in front of the entire class or if small groups (eg 10- 15 students for the younger age groups) will be taken into a separate screening area. It may be easier for the children to concentrate if a small group is taken away from the main body of the class. In addition, this reduces the possibility of others whispering the answers to during the subjective Vision Screener test. Having groups of student present for the screening minimizes the time required for explanation of how to do the screening.

4. Organize personnel

If there is more than one teacher trained at a school, decide whether the teachers will work individually or work in pairs. If in pairs, time taken to record results, to collect and return students to their class and give explanations may be minimized.

5. Preparation of Equipment and Paperwork required on Screening Day

Ensure a Vision Screener chart is prepared correctly. The long side length of each of the optotype letters should be just under 7mm. The chart should be of high contrast – i.e. dark black lettering on a clean white page. If the chart is laminated, ensure low gloss lamination to minimize reflections.

The equipment used to determine the 3 meter distance should be placed with the chart. This may be a 3 meter piece of string attached to the chart or it may be a tape measure and a marking pen to mark the distance on the floor.

Paperwork should be prepared in advance. Ensure there are sufficient copies of record forms, referral forms, information sheets for the parents of those referred.

6. Obtain parental consent if required

An information sheet should be sent to all parents informing them of the significant impacts of poor vision and eye health on a child's ability to learn at school. This should be accompanied by a consent form for the screening. Additionally, the consent form should advise that if their child is found to be having vision problems, parents will be contacted after the screening with appropriate recommendations (i.e. a referral for a full eye exam at a participating optometrist will be sent home with the child).

7. Community sensitization

Campaigns informing the community of vision and eye health screening activities and dates should run for several weeks prior to the screening. And all local communities should be aware of the vision screening day and who it is to involve (students and out of school children). This is to enable maximum participation of all children

Implementation in Schools on Vision Screening Day

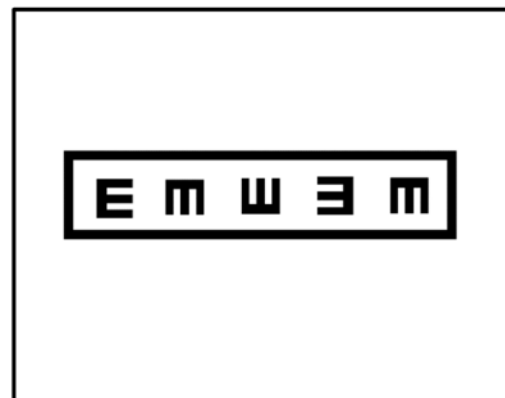
Steps for Vision and Eye Health Screening

Three different tests are considered for each child in vision screening:

1. Distance Vision Screening using the Vision Screener chart- measurement of distance vision requiring a simple PASS or FAIL result
2. Screening the health of the eye in good daylight
3. Consideration given to symptoms that may suggest any difficulties with vision or eye problems

Test 1: The Vision Screener

- + The Vision Screener is a single line of 5 "E" symbols.
- + The child is able to see the target if s/he correctly indicates the direction in which the legs of the "E" symbol are pointing
- + A PASS is recorded if the child reads 3 letters correctly. Inability to see 3 of the "E" symbols is recorded as a FAIL. This indicates that the child's vision is below normal
- + Any FAIL requires a detailed eye examination at a facility with an eye clinic with a suitable eye care practitioner, such as an optometrist or an ophthalmologist, and necessary equipment and infrastructure



The Vision Screener



Procedure:

- + Take the Vision Screener close to the child. Explain that you will point at the 5 Es and s/he should point at the direction of the “legs” of the E.
- + If the child normally wears eye glasses to see in the distance, tell her/him to wear them during the test.
- + Stand the child 3 meters from the chart (measure the distance using tape or string provided).
- + Test the RIGHT eye first. Ask the child to cover their left eye with the palm of their hand (NOT their fingers as they may peep between them). Tell the child not to press on the covered eye.
- + Stand behind the Vision Screener. Point at each symbol and ask the child to indicate which way the legs are pointing.
- + If the child is able to correctly identify at least 3 of the symbols record a PASS in the record form (see the Record Form attached).
- + Then test the LEFT eye. Ask the child to cover the right eye. Again point at each “E” symbol on the line. Record the findings in the record form.



Child’s responses observed when using the Vision Screener

- + **PASS**
RECORD A PASS if the child correctly indicates the direction of at least 3 of the 5 “E” symbols with EACH eye.
- + **FAIL**
RECORD A FAIL If the child CANNOT see A MINIMUM OF 3 “E”s on the row.

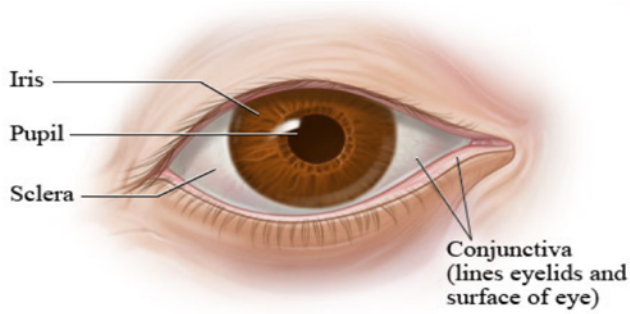
Example Result Sheet

School Name (class): _____ Date: _____ Screener name: _____

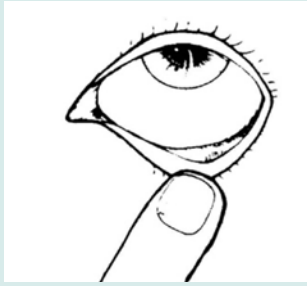


	Name	Gender M / F	Age	Test 1. VISION		Test 2. EYE HEALTH		Test 3. SYMPTOMS		Overall Vision result	Referral given to child
				Right	Left	Right	Left	Right	Left		
				✓/x	✓/x	✓/x	✓/x	✓/x	✓/x	✓/x	Y/N
1											
2											
3											

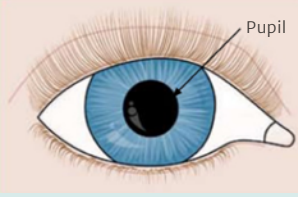


Test 2 : Screening the Health of the Outside of the Eye



- + Always wash your hands before touching the child's face or eyelids
- + Turn the child's face to daylight so that the eyes may be seen more clearly
- + Always inform the child of what you are about to do before doing it
- + You may have to move the lids (shown in the image above and described in the table below) to see the parts of the eye hidden by the eyelids.
- + Use the following pages to look at the different parts of the eye, see if anything looks abnormal
- + The child should PASS if everything looks normal, FAIL if ANYTHING looks abnormal

Structure	Appearance of the normal eye
Eyelids 	The normal eyelids : <ul style="list-style-type: none"> + open and close properly + look clean – no scales, crustiness or dried pus + look smooth with no lumps + have lashes that turn away and not scratching the inner structures of the eye + do not look red, puffy or swollen. + One eyelid does not look more droopy than the other
Cornea 	The cornea must be transparent and shiny
Conjunctiva 	There are two parts to the conjunctiva (membrane on top of the white part of the eye): Conjunctiva on the eyeball that covers the white of the eye which should: <ul style="list-style-type: none"> + look clear and smooth + let the whiteness of the sclera show through + show only a few small blood vessels + show no red parts or bumps + show no pus, watering nor bleeding. The eyelid conjunctiva that covers the inside of the eyelids which should: <ul style="list-style-type: none"> + be smooth and pinkish, not red + not have bumps, lumps or growths + no have foreign bodies.

Structure	Appearance of the normal eye
Sclera	The white of the eye should be white in colour
Pupil	 <p>The pupil should:</p> <ul style="list-style-type: none"> + be black, round, equal in size. + be central (ie the eyes should point straight, not in 2 different directions)

Signs of unhealthy eyes

Here are some examples of what unhealthy eyes may look like:



Keratomalacia resulting from Vitamin A deficiency



Diseased cornea that is not transparent (Photo courtesy of LV Prasad Eye Institute)



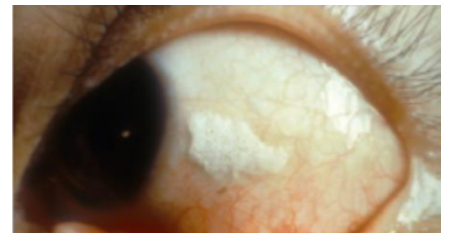
White pupil (Photo courtesy of LV Prasad Eye Institute)



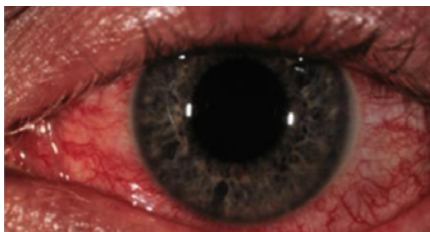
Inward turn of the left eye (Photo courtesy of Brien Holden Vision Institute Global Optometry Resources)



An eye with discharge, bumps and red conjunctiva from infection (Photo courtesy of International Centre for Eye Health)



Bitot's spot from Vitamin A deficiency on conjunctiva (Photo courtesy of International Centre for Eye Health)



Red bulbar conjunctiva and swollen eye lids (Photo courtesy of IACLE)

Test 3: Suspicious Symptoms that may indicate and eye problem

Teachers and parents should be taught to **look for symptoms and signs** that could mean the child has a refractive error or an eye problem.

If the child:

- + **holds books very close** to their eyes
- + sits **close to the TV or board**
- + complains of **distance or near blur**
- + **squeezes their eyes half closed** when looking at the board
- + **copies** from the child next to them
- + **shows poor concentration or behaviour**
- + **leaves out words or sentences** when reading
- + **blinks or rub their eyes a lot**
- + **twists or tilt their heads to use one eye** more than the other
- + complains of **headaches or eyestrain** after they have read for a long time
- + **Is unusually clumsy**
- + **Complains of poor night vision**
- + **Has very watery eyes**

Children with any of the above reported symptoms should be referred for an eye examination. The symptoms should be recorded as part of the reason for referral.

Teachers Eye Health

In order not to interfere with activities focusing on children, it is recommended that teachers are screened either before or after the children are screened.

Method: Vision Screening

- + Similar to the method used to screen children, the teacher should be screened at 3 meters using the Vision Screener. If a teacher normally wears glasses for distance, the glasses should be worn for the screening. If the teacher fails in one or both eyes using the same criteria as above, the teacher can be referred to the eye clinic.
- + If the teacher is aged 40 years and above, and near visual acuity assessment should be carried out, using a near acuity chart with N5 size print at 40cms. If the teacher has reading glasses, he/she should wear this for the assessment.

If the teacher is unable to comfortably read this size of print, the teacher should be provided with reading spectacles in the range of +1.00 D to +3.50 D. Ready-made spectacles can be used for those without a RE for distance.

Other eye conditions

- + Aged 40 years and above: Ask if the teacher is diabetic. If so refer to the eyecare provider for retinal examination. Provide information about diabetic retinopathy
- + Look at the pictures of unhealthy eyes and refer for an eye exam if anything looks abnormal
- + Advocate with the Ministry of Education that all teachers aged 40 years and above have annual blood glucose and blood pressure measurement

What to do when a problem is detected when conducting the vision screening?

Children who fail ANY of the three vision and eye health screening tests must be referred to an eye department for a comprehensive eye examination.

This includes:

- + Any child whose presenting vision records a FAIL on the Vision Screener
- + If a child has one or more signs of unhealthy eyes
- + If the child displays any signs or symptoms of an eye problem.

After Vision screening day

It is possible to review quickly the names of those students referred for full eye examinations by glancing down the referral list on the record form. After a certain period those students should be approached to check if they had attended an eye clinic for a comprehensive exam. If they did and spectacles were dispensed, is the student wearing them? If not why not? What needs to be done to ensure compliance with the outcome of the eye exam?

Monitoring and Evaluation

Monitoring and evaluation is an essential component to any SHN program and takes place at multiple stages of a program. It ensures that the program is running efficiently and having the desired effect. In addition, it allows informed adjustment to any problems or issues that may arise.

Monitoring and evaluation is to:

1. Identify problems
2. Develop solutions
3. Guide interventions

For monitoring and evaluation to be effective, it is important that good quality data is recorded and is as complete as possible.

Monitoring forms should be provided at the teacher training, with training on how to complete them fully. Completed forms should be passed back to the Ministries of Health or Education, according to the training instructions as soon as possible following school health days.

The following should be tracked as a minimum for vision screening programs:

- a. Number of children and teachers screened for refractive error
- b. Number and age of children who fail screening
- c. Number of people given spectacles
- d. Distribution of dispensed spectacles by lenses powers
- e. Number of children referred to eye hospital
- f. Number of children needing bespoke (custom made) glasses

Other important criteria to consider are whether the child is enrolled or unenrolled in school and whether they had previously worn spectacles or are a new wearer.

Module: Water, Sanitation and Hygiene (WASH)

Aim:

For students to gain an understanding of how WASH can underline and promote both protection from common infections. To encourage and monitor some of their WASH activities within the school.

Background Information

Inadequate water, poor sanitation and poor hygiene all provide routes for infection via infectious matter, such as faeces. Known as **WASH, Water, Sanitation and Hygiene** is important in disease control for conditions such as diarrhoea, Trachoma and parasitic infections. In particular, access to **safe water** can prevent transmission of 'water-borne' diseases such as diarrhoea and cholera. Diarrhoea is one of the top causes of child mortality, killing nearly 1.8 million children a year in developing countries. Access to sufficient **quantities of water** can prevent transmission of water-washed' diseases such as Trachoma and some parasitic infections. Transmission of these diseases can occur through **poor hygiene** due to insufficient quantities of water for washing. The simple act of washing hands after using the latrine, before eating and before preparing food, can reduce the number of diarrhoeal diseases by up to 35%. Improving both the **quantity** and the **quality** of water can therefore help prevent disease.



Sanitation measures, such as improving access to and use of latrines can help keep faeces and infectious matter away from people, and prevent flies from breeding. Faeces often harbour parasitic eggs, as well as germs or bacteria. Hookworm larvae in particular is found in faeces and can be transmitted through walking through infectious material (faeces) and not washing hands before eating or preparing food.

Any improvements in WASH services must also be accompanied by improved hygiene behaviour, which is why health education is so important. Improved WASH in schools has been found to increase attendance and to reduce diarrhoeal diseases. The simple act of washing hands after using the latrine, and before preparing food can reduce the burden of many of these diseases and their effects.

Concept

The following training agenda is aimed at informing children of ways they can protect themselves from bacterial and parasitic infections through effective hygiene behaviour. In particular this section is important to support many health services that are delivered through schools such as eye health and deworming. The focus of the key health messages are how the cycle of bacteria and parasite infection can be broken through hand washing, good latrine cleanliness and use, and the wearing of shoes.

Learning Outcomes:

By the end of the session, students should be able to:

1. Understand why washing the face and hands stops the transmission of trachoma, parasitic and diarrhoeal diseases
2. Understand that germs and parasites are not always visible to the naked eye
3. Be able to detect severe diarrhoea and know how to treat it
4. Recite and perform the procedure for washing hands and faces
5. Identify two key times to wash hands

Teaching session:

1. Why is keeping hands and faces clean so important?



100 parasite worm eggs
1 million bacteria
10 million viruses

Ask the students which diseases they think they may be able to catch through not cleaning face, eyes and hands well and regularly.

Recap: Many diseases are caused by germs that spread through dirty hands and environments. These diseases include **parasitic worms, trachoma and cholera**. Keeping your face, hands and your home and school clean prevents you from getting the disease and stops the spread of these diseases.

Explain further that: Many other germs are present in faeces, and make you feel unwell if you happen to eat or drink them by accident. They can cause you to be sick (to vomit), and stop your digestion working well, so your faeces become a liquid (diarrhoea). These germs include bacteria, which are very small germs, and worms, which start as eggs so small that they cannot be seen, but grow to lengths of around 35cm! One kind of worm (hookworm) can infect you by going through the skin of your foot if you do not wear shoes around the infective areas (such as near and in latrines and in the fields).

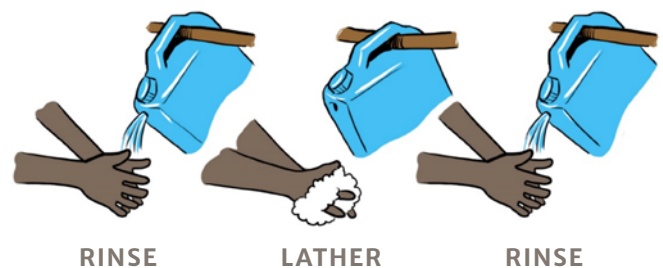
Ask the students if they can think of any ways to avoid catching the diseases caused by these germs in faeces.

Explain that since these germs are present in faeces, it is important to avoid contact with it wherever possible by:

- + Using the latrine which means that people won't accidentally touch the germs in the faeces with their hands or feet.
- + Using a latrine makes it harder for flies to breed and spread the germs.
- + Washing your hands means that you won't accidentally eat the germs in the faeces, or pass germs on to other family members.
- + Washing your face makes your face less attractive to flies, and they won't infect your eyes.
- + Keeping the latrine clean and germ-free means you won't pick up germs when you visit the latrine.
- + Not going to the toilet near a water source, as germs can be spread this way and make us sick through drinking the water, or swimming in infective water.
- + Wearing shoes.

Most of these actions are also important to prevent trachoma: keeping yourself and your home and school clean will remove the flies which spread trachoma.

2. How should you keep your hands and face clean?



Start by asking who knows how to wash their hands and faces. Explain that:

To wash your hands, you should:

1. Wet your hands with clean water, for example from a tap or tippy tap
2. Rub soap all over your hands
3. Rinse the soap off with more clean water

If soap is not available, you can use ash instead.

To wash your face, you should do the same, but with soap and water, or just water, on your face. Be careful not to get soap in your eyes, which can hurt!

3. When should you wash your face and hands?

Start by asking who knows when they should wash their hands and faces. Explain that:

- + Everyone should aim to wash their face **every day**, to lower your chance of catching trachoma
- + You should wash your hands, with either soap or ash, **after** going to the latrine, to remove any germs that you may have picked up
- + You should wash your hands **before** eating or preparing food, to stop germs getting into your mouth with food.

Activities

1. Monitoring handwashing

Make a chart with all the students in the class down one side, and days of the week down the other. For a week, get the students to make a mark on the chart next to their name each time they wash their hands – either before eating, after using a latrine, or between classes.

Name	Monday	Tuesday	Wednesday	Thursday	Friday
Jane	✓✓✓	✓✓✓✓	✓		
John		✓✓	✓	✓	

2. Handshake game

Using hand cream and ash or chalk, select a student from the class to be the ‘infected’ person. Cover their hands in cream, followed by the ash or chalk. They then select a fellow student to shake hands with. This person also becomes ‘infected’, and can join the first student in selecting additional students to ‘infect’ by shaking hands (so the next round of handshakes there will be a total of 4 students ‘infected’, the following round, there will be 8 ‘infected’).

How long does it take before all the students in the class are ‘infected’?

How long does it take to get around all the students?



Now, check the students’ hands. At what point did the handshakes left NO chalk? Remind them that we can’t see germs, like we can see chalk, but it only takes a very small amount sometimes to make us sick.

Talk about what would have happened if the chalk or ash was a germ – how would people feel?

How many of the class could have become sick? (count how many have chalk on their hands)

Don’t forget at the end of this exercise to get all the students to wash their hands with soap and water!

Sightsavers

www.sightsavers.org

**Partnership for Child Development
(PCD) | Imperial College London**

www.imperial.ac.uk/partnership-for-child-development/

Brien Holden Vision Institute

www.brienholdenvision.org



School Health Integrated Programming (SHIP) 2016

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