

GOVERNMENT OF SOUTHERN SUDAN
MINISTRY OF HEALTH



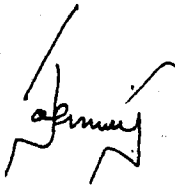
Prevention and Treatment
Guidelines for
Primary Health Care Units

FOREWORD

In our mission statement in the Health Policy Document, we categorically stated that the delivery of a quality health service is the way forward. Both public and private sectors are to be seriously engaged to this regard.

The corner stone policy of Health Services in South Sudan is the Primary Health Care Program. The program has three levels of health delivery namely Primary Health Care Unit, Primary Health Care Centre and a Referral hospital. Being aware of the need to consolidate the Services, we did develop the Prevention and Treatment Guidelines for the Primary Health Care Units. The focal health personnel in the unit is the CHW who is provided with this manual. The operationalization of the services is provided through this manual. It's our conscious believe that the care for our communities in the vast rural areas is one of our pre-occupations which is being taken care of.

The Ministry of Health Government of Southern Sudan (FMOH) shall continue to develop its cadres in line with our national obligations. The manual provided shall become a basic tool for our CHW and we are proud of that.



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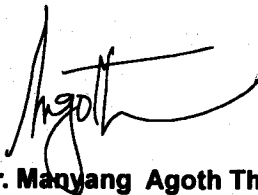
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Disclaimer

These prevention and treatment guidelines are developed to assist the Community Health Workers and Mother and Child Health Workers. They are intended for Primary Health Care Units.

The Ministry of Health Government of Southern Sudan will not accept any claim arising from negligence or misuse of the manual



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Introduction

Essential Drugs

This book is based on the concept of essential drugs. A good health care system provides health care for all. This can be achieved with limited resources but only when proper guidelines are followed.

Patients need medicines that are safe, effective and of good quality. The drugs have to be affordable and they have to be available. Because each government has financial limitations only the use of essential drugs will ensure that people can get the best possible treatment within the resources present.

I. The first step to achieve this is: only use medicines with their generic names; these are the original names of the substances the drug consists of. The same drug, if sold under a brand name will often be far more expensive, but is still the same drug. It is further important that only good quality drugs are used.

II. The next step is to make essential drugs available at each level of health care; the Primary Health Care Unit (PHCU) , the PHC Centre (PHCC) and the County Hospital.

Each level has different diagnostic facilities and staff with different qualifications and responsibilities. Uncomplicated malaria or bronchitis can be treated at the PHC Unit level whereas a disease like tuberculosis will only be treated at PHC Centre or Hospital level and major surgery can only be performed at Hospital level. Therefore different essential drugs are needed for each level.

III. The last step is Rational Drug Use. To give all patients the best care possible health workers have to use their drugs wisely. There are many conditions that do not need medical treatment at all, for example a common cold, a headache or mild diarrhoea. With some advice and rest they will resolve within a short time. Also for common complaints like constipation and joint pains local herbal medicine may be available.

I am very sure that all of us are familiar with the situation that medicines are finished before the month is finished. So we really have to use them only for the patients needed.

For other diseases it is important to use medicines that have proven to be effective and to give them in the right dose and for the right period of time. Using drugs rationally will give the best treatment result and will reduce costs.

Introduction

Over the past years it has become clear that many medicines have been used too much or not in a rational way. This has resulted in increasing resistance against certain drugs, for example antibiotics, but also anti-malarials and TB medication. Some medicines that were very useful in the past are now becoming ineffective. We can partly prevent this if health workers use medicine rationally according to protocols.

Essential drugs and guidelines will change over time. As new drugs become available and affordable and drug resistance increases, our guidelines and protocols will need to be adapted.

How to use this book

To use this book optimally you need to:

- Familiarise yourself with the contents
- Study the sections and know where to find them when you need them
- Keep this book available or carry it with you.
- Comment on the guidelines so that we can learn again from you.

The first part of this book deals with preventive health. The Ministry of Health is fully committed to improving the general health of the population of Southern Sudan. The best and most effective strategy to do this is to prevent diseases. Until this point in history preventive activities have been quite limited.

Please read this part well and see if your health facility or programme covers the full range of preventive activities mentioned.

The first 9 chapters deal with preventive medicine, the rest with curative.

Explanation drug dosages

There are several ways of writing this down. We use the following method: Patients are divided in age groups and weight groups. If you can weigh the child/person, use the weight group, If you can not weigh use the age group.

Under that age/weight group you might find :

½ tab X3X3 this means 3 times daily half a tablet for 3 days.

2 tab X 3 X 5 means 3 times daily 2 tablets for five days.

A single dose means that all tablets can be given at once.

If needed (mainly with paracetamol) means that you only give the drug when the patient has fever or is in pain.

Introduction

How to dispense drugs

- The first dose of all drugs should be given at the PHCU.
- Side effects have to be explained
- *Always get patients to repeat the instructions.*
- As a rule no more than 1 antibiotic should be prescribed with the exception of STI treatment or patients with severe infection like PID, requiring a combination treatment such as amoxicillin and metronidazole.
- Ideally patients should not be given more than 2 types of drugs, as this can effect compliance and cause confusion.
- Giving oral drugs to children can be a real problem, therefore sugar is provided in the clinics to mix with the medication. If a child is refusing or spitting out medication try to give rectally. This is relevant especially in the treatment of severe diseases like malaria.
- Explain other non drug information, like plenty of fluids, next follow up date etc.

Prevention of Diseases

Prevention

1. Immunisation

1.1. Standard Immunisation of children and vitamin A supplementation

Immunisation can prevent several dangerous diseases in children: TB, diphtheria, whooping cough, tetanus, polio and measles.

The schedule given below is the official immunisation schedule for Southern Sudan. The ages given are minimum ages for each vaccination; children should receive doses at these stated ages or at the first contact after reaching that age. The program also gives an upper limit in age. Vitamin A supplements can be given during the immunisation sessions according to schedule.

Several vaccines can be given at the same time. This is important if the child is of the appropriate age and has not received the earlier immunisations. A slight fever or minor illness should not prevent you from immunising a child. A critically ill child needing hospital admission must be given the appropriate vaccines upon recovery.

Remember:

- To inform mothers/caretakers about possible side-effects of each vaccine (see below).
- To record all vaccinations on the immunisation cards and instruct the mothers to bring the cards along at each visit
- To instruct the mother to return for the next immunisation on the appropriate date.
- To maintain the cold chain and ensure appropriate cold storage for each vaccine as recommended, vaccines are easily destroyed by heat.
- To use a new syringe and needle for each vaccination!
- To handle disposal of needles safely and appropriately (See chapter 5).

Immunization schedule for children < 1 year of age.

Minimum Age	Vaccines	Maximum age
At birth	BCG and OPV	11 months
6 weeks	DPT 1 and OPV1	5 years
10 weeks	DPT 2 and OPV 2	5 years
14 weeks	DPT 3 and OPV 3	5 years
9 months	Measles	15 years

If the first measles immunization is done at 9 month it is recommended to repeat it after 15 months.

Prevention

**NEVER MISS AN OPPORTUNITY
TO VACCINATE A CHILD!**

Vaccine dose and route of administration

Vaccine dose	Route of administration
BCG Child under 1 year 0.05 ml Child over 1 year 0.1 ml	Intradermally into upper outer part of left forearm. A small wheal will appear at the sight of injection. A small sore will appear in 2-6 weeks. If no sore develops repeat the vaccination after 3 months.
Polio (OPV) 2 drops by mouth. Follow instructions on bottle.	Give the vaccine by mouth using the dropper provided. If child spits or vomits repeat the dose. Read the instructions on the bottle.
DPT 0.5 ml	Intramuscularly in the upper outer part of the thigh.
Measles 0.5 ml	Subcutaneously in the upper outer part of the arm (deltoid muscle).

Expected side effects and treatment.

Vaccine	Side effects	Treatment	Remarks
BCG	Small "sore" will develop at site of injection after a few weeks and may last for 2 to 12 weeks	Keep dry and clean (do not put any ointment or medicine on it)	Will leave a Small scar.
DPT	Mild temperature Redness, pain or slight swelling at site of injection	Tepid bath Paracetamol	Will disappear within 2-4 days
Measles	Mild temperature 6-10 days after vaccination Slight rash may appear	Tepid bath Paracetamol	Will disappear within 2-4 days

Prevention

Vitamin A supplementation schedule

Dosage (in IU)	When to give
< 6 months 50.000 IU	First dose at 3 months if the child is not breastfed. If the child is breast fed, first dose at 9 months then every 6 months (twice per year) up to the age of 5 year
6-12 months 100.000 IU	
> 12 months 200.000 IU	

2. Immunisation of pregnant mothers.

Immunisation of pregnant mothers with Tetanus Toxoid (TT) prevents neonatal tetanus in newborn babies and tetanus in the mother. The immunisation schedule is found below.

Immunization schedule for women of child bearing age

Dose	When given	Period of protection
TT1	At first contact with women of childbearing age, or as early as possible in pregnancy (from 4 th month)	No protection
TT2	At least 4 weeks after TT1	3 years
TT3	At least 6 months after TT2 or during next pregnancy	5 years
TT4	At least 1 year after TT3 or during next pregnancy	10 years
TT5	At least 1 year after TT4 or during next pregnancy	All child bearing years

3. Additional immunisations.

In addition to the regular schedule of immunisations, the polio eradication campaign vaccinates all children up to five years of age against polio on national immunisation days. Children who receive this can get their regular polio vaccination as well. Other immunisations can be done at times as mass campaigns for example for measles, tetanus or meningitis.

2. Mass treatment of diseases

Not all diseases can be prevented by immunizations.

However there are several serious diseases that can be controlled and eventually even eradicated if the population at risk is given appropriate medicines on a yearly basis. Not all geographic areas in Southern Sudan are at the same risk for diseases that respond to mass chemotherapy. Mapping of the various diseases and the relative risk in different regions of Southern Sudan is not complete but some information is known and some mass chemotherapy programs are functional.

Make sure you are aware of these programs, assist in them and motivate your community to participate. Examples include:

1. Soil Transmitted Helminths (Mass deworming): This can be done with mebendazol 500mg or Albendazole 400mg. The population at risk is all children from age 1 year up to 15 years. This often takes place in schools targeting the school age children especially in areas with a high worm load. It also may be distributed during NIDS campaigns targeting the age 1-5 year old children. Ideally this is done every 6 months.

2. Schistosomiasis/bilharzias: This disease can cause chronic disability especially to the high risk group of school aged children. Mapping needs to be carried out in the area if bilharzia is suspected and if the prevalence of the disease is high then a mass chemotherapy program with the distribution of praziquantel is carried out usually through a school- based program one time per year. Doses of medication are calculated on a weight basis and a teachers training course on the method of distribution has been developed. This program currently functions in only a few areas in Southern Sudan that have been mapped for the disease.

3. Onchocerciasis: Onchocerciasis is a debilitating disease that can cause blindness as well as severe skin disease. Mapping for this disease is completed and the mass distribution program has been developed. The medication, Mectizan/ Ivermectin is distributed to all persons above age five years in the communities at risk. The program is carried out through community distributors.

4. Lymphatic Filariasis (Elephantitis): This disease has not yet been mapped in Southern Sudan to determine the at risk populations. It is controlled by the mass distribution of Albendazole and Ivermectin given to all persons over age 5 years one time per year in the at risk communities. Mapping for this disease will take place in Southern Sudan soon.

Prevention

5. Trachoma: This is a chronic conjunctivitis that results in scarring of the eyelids and the end result is blindness. Prevention is through improved hygiene (washing faces twice daily and washing hands after use of latrines) Azythromycin is distributed one or two times per year to everyone over the age 1 year in villages with high prevalence.

6. Vit A: As previously mentioned in chapter 1 vitamin A given twice a year to children under five is very beneficial to prevent blindness, and to reduce morbidity of diseases like measles. Vit A is currently distributed through the NIDS campaigns in Southern Sudan.

7. Sleeping sickness: There is no mass treatment for sleeping sickness but if cases are found in a certain village the whole population should be checked and people can be treated in an early stage.

Drugs administered for mass treatment

Disease	Drug	Target Group	How Often	Do NOT combine with
Soil-Transmitted Helminths	Albendazole or mebendazole	Children 1 yr to 15 yrs	1-2 times/yr	Azithromycin
Schistosomiasis	Praziquantel	School aged children in at risk areas	1-2 times/yr	Azithromycin
Onchocerciasis	Ivermectin	>5 yrs	One time/yr	Azithromycin
Lymphatic Filariasis	Albendazole and Ivermectin	>5 yrs	One time/ yr	
Trachoma	Azithromycin	Children > 1yr	1-2 times/yr	Albendazole, Ivermectin or Praziquantel

3. Antenatal care

Women in Southern Sudan have an unacceptable high risk of dying during pregnancy and childbirth. Many interventions are needed to reduce this high maternal mortality rate, e.g.

- Prevention of childhood marriages: ideally a girl should be over 18 years old when she gets pregnant for the first time.
- Good nutrition and enough rest during pregnancy.
- Focused antenatal care (ANC).
- Clean delivery by a trained health worker
- Referral to a hospital if needed, especially in emergency situations.
- Child spacing with an interval of a minimum of two years.
- Education of girls
- Other macro economic interventions like improvement of roads and infrastructure

This chapter deals with the minimal package of antenatal care that every pregnant woman should receive. In case of complications the number of visits will have to increase or the patient has to be referred. Child spacing will be covered in chapter 6: Child Spacing/Family Planning.

In a normal uncomplicated pregnancy aim for four routine antenatal visits, according to the schedule found below. If a woman comes for her first visit late in pregnancy, still try to cover all appropriate preventive measures.

Antenatal visit	Months of pregnancy	Medication/preventive measures
1 st	3 – 5	FS/FA , TT1 + SP1 (if more than 4 months) bed net
2 nd	5 - 7	FS/FA, TT2 +SP2 if first doses were given more than 1 month ago
3 rd	7 – 8	FS/FA, SP2 if not yet given
4 th	> 8	FS/FA

TT -Tetanus Toxoid prevents neonatal tetanus

FS/FA -Ferrous Sulphate and Folic Acid prevent anaemia

SP - sulphadoxine/ pyrimethamine (Fansidar) and bed nets prevent malaria.

SP should be given twice in pregnancy.

If possible it is good to send the mother at least once to the nearest PHCC for syphilis test and urine test. If you find or suspect other problems also refer her.

Prevention

First antenatal visit:

1. Take history:

- Make an antenatal card
- Record name, age, marital status, occupation, education and residence
- Medical History: include history of diabetes, hypertension, TB, STIs, use of medication.
- Obstetric history: record each pregnancy (including the ones ending in abortion): year, any problems before during or after the delivery, weight and sex of the baby and whether the baby was alive, stillborn or died within 1 week after delivery (neonatal death).
- Current pregnancy:
 - LMP: first day of last menstrual period.
 - Calculate number of months from LMP
 - Calculate the estimated delivery date (EDD).
 - Ask for any problems encountered.
- Ask for signs of Sexually Transmitted Infections (STI's)
- Social history: smoking, alcohol, drugs abuse.

2. Do the Examination:

- General examination: Blood pressure (BP), weight(in kg), anaemia, height(in cm), breasts (inverted nipples),
- Obstetric examination: symphysis-fundal height (SFH) in centimetres, any signs of multiple pregnancy, any caesarean scar.
- Oedema especially of the legs.

3. Laboratory tests:

- malaria if needed

4. Give Health education:

- Make a delivery plan together with the patient and if possible a relative. What is the plan for a normal delivery? What is the plan if complications arise? Advise on hospital delivery in case of a high risk pregnancy (see table below)
- Advise on proper nutrition, discourage any taboos on food; stop smoking and alcohol
- Discuss breast feeding and breast care
- Discuss symptoms of miscarriage.
- Precounsel about possibility of HIV testing; if the mother wants to be tested refer.
- In a normal pregnancy it is safe to have sex during the whole 9 months.

Prevention

5. Management:

- Manage common complaints (see table below)
- Give the woman tetanus toxoid 0.5ml im in the upper arm (deltoid muscle), if she is more than 14 weeks pregnant.
- Give Ferrous sulphate + folic acid (200mg) once daily; if she is anaemic give the dose twice daily. Give enough supply until the next visit, at least for one month.
- Provide her with a long lasting insecticide treated bed net (LLITN)
- Give the antenatal card and tell the date of the next ANC visit.
- Give three tablets of Sulfadoxine/ pyrimethamine (SP1) if more than four months

Management of common complaints in pregnancy:

Complaint	Action	Remarks
Low backache	Exclude a Urinary Tract Infection (UTI). Avoid heavy loads and take some rest during the day.	Avoid unnecessary medication
Morning sickness	Exclude malaria and UTI. If not severe reassure up to 3 months. Advice to eat some light food, like biscuits or rice before getting up in the morning. If severe and dehydrated, admit her.	Avoid anti-emetics
Indigestion, flatulence, constipation	Advise to eat lots of green vegetables and fruits, drink plenty of fluids. Do not eat a heavy meal before going to sleep	Avoid laxatives and enemas
Food cravings	Advise on a balanced diet, eat healthy foods according to desire. Remember Ferrous Sulphate/Folic acid supplements.	Discourage harmful materials like soil.
Fatigue	Reassure, advise to take more rest. Remember Ferrous, Folic acid.	Avoid other drugs

Second antenatal visit:

1. History:

- Ask if there are problems since last visit
- Ask for the date of first foetal movements

2. Examination:

- Check BP, weight
- Check the SFH, foetal heart (FH), presentation

3. Laboratory: malaria only on indication

Prevention

4. Health education:

- Repeat topics of first visit if needed
- Discuss important symptoms like vaginal bleeding during pregnancy, blurred vision, early rupture of membranes and early labour.
- Discuss child spacing.

5. Management:

- Give the second dose of TT if needed and if it is more than one month after the first visit.
- Give Ferrous Sulphate/ Folic acid.
- Give 3 tablets of sulphadoxine/pyrimethamine (SP2) if SP1 was given more than 1 month ago.
- Give the date for the next ANC visit

Third antenatal visit:

1. History:

- Ask if there are problems since last visit
- Ask whether there are foetal movements

2. Examination:

- BP, weight, look for signs of pregnancy induced hypertension (PIH) or severe anaemia.
- SFH, FH, presentation, check for multiple pregnancy

3. Health Education:

- Discuss labour/early rupture of membranes. In both cases the mother should go to the clinic as soon as possible.
- Evaluate delivery plan: in case of a high risk pregnancy this might be the last opportunity to convince patient and relative to deliver in the hospital.
- Discuss Child spacing

4. Management:

- Give Ferrous/Folic acid
- Give 3 tablets of Sulfadoxine/Pyrimethamine (SP2) if 2nd dose not yet given.
- Give the date for the next ANC visit.

Prevention

Fourth antenatal visit:

1.2.3. History, examination and laboratory tests.

- Exclude abnormal position of the baby.

4. Management:

- Continue Ferrous Sulphate/ Folic acid.

High risk pregnancies

High risk pregnancies have a high chance of becoming complicated deliveries. Women with high risk pregnancies should be referred to a hospital early, especially if the distance is far. But all deliveries have some risk. Therefore each woman should be advised to deliver at least at PHCC level.

High risk factors in pregnancy:

1. Age under 16 or over 40
2. Height under 145 cm
3. First pregnancy
4. Previous caesarean section
5. Previous stillborn child
6. Previous Post Partum Haemorrhage
7. Baby in breech position or transverse lie after 34 weeks
8. Multiple pregnancy
9. Severe anaemia
10. HIV positive status
11. Ruptured membranes for more than 12 hours
12. Vaginal Bleeding
13. Hypertension
14. Diabetes
15. Any severe illness
16. 3 or more abortions in a row
17. Severe oedema

4. Malaria Prevention

Malaria is very common in Southern Sudan. It accounts for 20-40% of all visits to health facilities and is one of the leading causes of death. Most at risk of getting malaria are pregnant women, children under five, HIV positive persons and those who come from areas where the incidence of malaria is very low, for example Nairobi or Khartoum.

Malaria is spread by mosquitoes; therefore the best method to prevent malaria is to reduce contact between humans and mosquitoes. This can be done through:

- Using bed nets: the best nets are the ones impregnated with insecticides. Nowadays long lasting insecticide-treated bed nets (LLITN's) are available, polyester bed nets that have been impregnated with chemicals that will last as long as the net itself. There are still older bed nets in use that need regular impregnation. The advantage of bed nets (if the mazes are small enough) is that it also protects against other vector born diseases like kala-azar and filariasis. Teach your clients how the bed nets should be used. Often the bed net is large enough for two persons, for example a mother and child.
- If possible screen doors and windows.
- Wear clothing that covers arms and legs, especially in the evening and at night.
- Control breeding sites: mosquitoes breed in stagnant water like empty containers, potholes and footprints. Either drain them or cover them with sand.
- Avoid housing sites near mosquito infested areas.

Another method of reducing malaria is giving pregnant women intermittent presumptive treatment (IPT) with SP (sulphadoxine/ pyrimethamine).

- A single dose of SP (3 tablets) given twice, the first dose in the second trimester of pregnancy (between week 16 and 24), the second dose in the third trimester (between week 28 and 36).

IPT and bed nets can also be given to HIV + patients and non immune visitors. Both bed nets and SP should be available free of charge for pregnant women.

5. HIV/AIDS Prevention

The human immunodeficiency virus (HIV) is transmitted by body fluids, the fluids produced during sex but also in blood and breast milk. Once someone has been infected by HIV the virus will slowly undermine the immune system and the body will become less able to fight infections.

This process takes several years but may progress more rapidly in some people. In the end the person gets AIDS (Acquired Immune Deficiency Syndrome). The patient is now prone to illnesses that do not usually occur in people with normal immune systems. People with AIDS also get ordinary infections more frequently. HIV/AIDS is not curable, although medicines and other measures can help infected people live longer.

Most infected people are not ill in the first years after infection, and most people with HIV do not know they carry the infection. So most infections are spread by healthy-feeling and healthy-looking people. Infections are spread to sexual partners and mothers can give the virus to their babies. HIV thus affects not only individuals but whole families and communities. This is why we must stop the spread of AIDS now.

Transmission of the HIV virus.

There are three methods of transmission of HIV:

1. Sexual contact: this is the most common method of spreading of the virus. Everybody who has unprotected sex (sex without a condom) may be at risk. The risk is higher for people with other sexually transmitted infections and for young girls during their first intercourse. Any small wound or lesion makes it easier for the HIV virus to enter.
2. Direct contact with certain other body fluids, most importantly blood. Infection from blood can occur through use of contaminated needles or transfusion of blood not tested for HIV. HIV can be transmitted by use of contaminated needles or knives in other settings, like traditional cutting practices.
3. From mother to baby, this can either happen during pregnancy, delivery or breastfeeding.

Do not isolate people with HIV-they need you!
You cannot get AIDS from normal daily contact.

HIV is not transmitted by saliva or urine.
HIV is not transmitted by mosquitoes.

Prevention

It is perfectly safe to share cups and plates, toilets and showers, sleep in the same room and shake hands or hug people with HIV/AIDS.

The number of people in Southern Sudan that are infected is not known. In some countries in Africa more than one out of every three adults is infected. To prevent a situation like this happening in Sudan, everyone needs to get involved in the fight against HIV/AIDS.

Prevention of HIV transmission

1. *Prevention of sexual transmission:*

There are three main ways in which we can prevent sexual transmission or reduce the risk of it.

- **A= Abstinence.** If one doesn't have sex, there is no risk of sexually-transmitted infections like HIV. However, permanent abstinence is not desirable for most people. But at least "partner reduction", is very important. The greater the number of sexual partners a person has over the years, the greater the chance of getting HIV. Young people are counselled to wait until they are older to have sex, often until they marry.
- **B= "Be faithful"** People in stable, monogamous relationships will stay healthy as long as neither one has HIV. If one member of the couple has sex with other people, they increase the chance of getting HIV, which they can then give to their partner(s).

Where VCT is available, partners should be encouraged to get tested. For example, it is possible for one partner to be infected before marriage, and testing is the only way to identify that risk to the other partner. Partner testing is an important HIV prevention strategy, as many people with HIV have partners who are not yet infected.

- **C= Condoms** Use of condoms greatly decreases the chance of acquiring HIV during sex. Condoms are very effective if used properly. If you do not know the HIV status of your partner, and cannot be sure s/he is faithful, the only way to protect yourself is by always using a condom during sex.

A special mention needs to be made of a very vulnerable risk group of young girls. They often have no say in their first sexual relationship, because their first partner is in general older and more powerful. So education about the "ABCs of HIV prevention" will not be enough to protect these girls. We have to find ways in the community to protect them better.

Prevention

The role of the health worker in prevention is to:

- Be a good role model
- Avoid stigmatizing people with HIV or giving them up as hopeless. Various kinds of treatment exist and many people with HIV can live productively for long periods of time with the support of skilled health workers
- Encourage the start of a support group for people living with HIV/AIDS, they can share their experiences and support each other.
- Discuss safer sexual behaviour often and openly. It should always be emphasized with people with STIs and during antenatal care.
- Discourage abuse of alcohol; people are more likely to engage in risky sexual behaviour under influence of alcohol.
- Teach people about condoms and have them available for those who want them
- Help make HIV testing available in the area if it is not already there. Learn about HIV testing and counselling and recommend it, especially to STI patients, pregnant mothers, and TB patients. Encouraging people to know their HIV status is important as it allows people to take steps to prevent new infections in themselves and others.
- Ask about the presence of symptoms of STIs and provide appropriate treatment. STIs can increase the transmission of HIV. People with STIs need safer sex and HIV prevention messages, and HIV testing should be strongly recommended.
- Give counselling to HIV+ people: they should always use condoms during sex even with their own partners; discuss the risk of transmission to the child if they wish to have children. Offer family planning.
- Assure pregnant mothers that it is safe to have sex throughout pregnancy. Enforced abstinence during pregnancy may lead some partners to seek sex outside their marriage

In addition to working with individual patients and their families, the health worker can be an advocate for HIV prevention and for caring and supportive attitudes in the community:

- Encourage and support teachers and youth workers to reach out to young people, especially young teenagers.
- Discourage sex and early marriage for very young girls.
- Encourage leaders in all sectors to take their share in spreading HIV/AIDS awareness. Sexual behaviour should be an important topic of discussion everywhere.
- Discourage wife inheritance.

Prevention

Prevention of transmission via infected blood and needles

Safe practices in health clinics protect both patients and health workers.

1. Never use the same needle or syringe more than once.
2. Develop a good disposal strategy for syringes, needles, and other "sharps" (see text box below).
3. Wear gloves when performing deliveries, or handling wounds. Wear gloves when handling newborn infants until the child has been dried and cleaned.
4. Goggles or just plain glasses can help protect your eyes against blood and other fluids.
5. If you get blood or other body fluids on your hands, wash them immediately with soap and water.
6. If you have cuts or abrasions on your hands, cover them.

Safe disposal of syringes and needles.

1. Make a good sharps container: use an old tin or jerry can with a small hole at the top, in which needles and lancets can be put. (Never use an open waste basket or a plastic bag!)
2. Never recap needles and never remove them with your hands. Either tip them off in the opening of the sharps container or remove them with a forceps then throw them away in the sharps container.
3. The sharps container should never be too full, when almost full, close it and incinerate it. An alternative if the container is small is to throw it in the pit latrine. Burying alone is not safe as people/ children might dig it up.
Current UNICEF advice is to bury a 2meter deep hole, put the sharps in, throw some kerosene or diesel over it and burn it the same day. After that put some sand over the debris.

3. Prevention of mother to child transmission:

- If available offer couples counselling and testing (VCT); discuss family planning if one of the partners is positive.
- Offer HIV counselling and testing to pregnant women. The child to be born has a 25-40% chance of becoming HIV infected by the mother, this can happen either during pregnancy, delivery or breastfeeding. There are ways to reduce this risk.

A. During pregnancy:

A single dose of Nevirapine for the mother during the onset of labour and a single dose (in drops) for the baby within 72 hours after delivery can reduce the risk of transmitting the virus to the baby. (S)he can still be infected but the chance is less. Remember that this drug does not cure the mother. The drugs are beginning to be available in 2005 in a few centres in Southern Sudan.

Prevention

B. *During delivery*

(These interventions should be the rule for all deliveries, since the HIV status of most women will be unknown):

1. Do not rupture membranes early. If membranes are ruptured ensure a quick delivery:
2. Avoid unnecessary vaginal examinations.
3. Avoid routine episiotomies.
4. Avoid routine suctioning of the baby, in a normal baby with a good APGAR just wipe the mouth.

C. *During Breastfeeding:*

1. Good breast care to prevent nipple cracks and infections (see chapter 7)
2. Safer infant feeding practices: Although the virus can be transmitted in breast milk, usually there is no alternative to breast feeding in Southern Sudan, and babies will die if they are not breast fed. Exclusive breast feeding for six months is the most realistic safer feeding practice for most women with HIV in Sudan. This means that women who choose to breast feed do not give any other foods during the first 6 months: only breast milk, no water, traditional medicines, or other food should be given, as such "mixed feeding" greatly increases HIV transmission to the baby. This also means that at the age of 6 months the child should be abruptly weaned.
3. In many countries a safer option is not to breastfeed at all, but to give infant formula. This is only feasible for women with access to safe drinking water, money, some education, and easy cooking facilities. These conditions do not exist for most mothers in Sudan.

D. *After the delivery:*

1. Always offer the mother Family Planning to avoid/postpone further pregnancies. Encourage partner testing and counselling. Discourage the husband from marrying other wives.
2. Infants of mothers with HIV need special care, including cotrimoxazole preventive therapy (CPT), so the clinic must have a reliable system of transferring maternal HIV test result to infant medical record.
3. NB: Infants of HIV-infected mothers should be put on CPT continuously from the age of 6 weeks until about 18 months, when they can be tested to find out whether they also have the virus. If the child is HIV-positive, CPT is continued for life.

6. Child spacing/ Family planning

Right now a mother in Southern Sudan has a chance of 11% in her lifetime of dying during pregnancy or child birth. Out of all children born, one in four dies before the age of five. This number could substantially be reduced if the interval between each birth would be longer.

Child spacing gives mother and child a better chance in life; it gives parents an opportunity to plan their family so that every child is born when it is wanted, expected and welcomed. Several methods of family planning will be discussed in this chapter.

Especially counsel parents on child spacing in the next situations:

- a recent new baby
- four or more children
- mothers' age > 35 years
- mothers' age < 20 years
- A mother who just delivered twins or triplets.
- A mother with complicated medical conditions, e.g. diabetes, heart disease, hypertension
- one or both partners with HIV positive status
- birth interval between children less than 2 years
- mother with a bad obstetric history with high chance to recur e.g. (pre)eclampsia, severe Post Partum Haemorrhage (PPH.)

Counsel clients on the different methods of child spacing, how to use them, the benefits and the disadvantages. People may also have misconceptions about FP which you have to address.

6.1. Breast feeding

Exclusively breast feeding, day and night on demand, will give a quite reliable protection against pregnancy for six months. When children start to eat, many women will still not menstruate until they stop breastfeeding. After the first six months this method is not so reliable anymore. But for many reasons (as also mentioned in chapter 7) it is good to advise all mothers to breast feed for two years.

Advantages

- Beneficial for mother and child
- Free
- Quite reliable contraception for first six months,

Prevention

Disadvantages

- Not fully reliable after 6 months of age, when other feeds are introduced.

Use

Let the baby suck frequently, both day and night, do not allow more than six hours between feeds. If the baby is growing well do not introduce any other milk or food until he is six months old.

6.2. Condoms

This is the only contraceptive that can be used by the man. It can be used in combination with natural family planning; during the unsafe days the couple can use condoms.

Advantages

- It gives immediate protection
- It protects also against HIV and other STI's

Disadvantages

- The man has to be cooperative
- It is not 100% reliable, accidents can happen e.g. rupturing of the condom
- Some couples feel it reduces the pleasure of sex.

Use

Every time the couple has sex a new condom has to be used. The man has to roll it onto his erect penis, but leave about one centimetre empty at the end of the condom. After he takes his penis out of the vagina he must take off the condom carefully and throw it away. It is important not to put any kind of jelly or oil on the condom as this may damage it.

Supply

Supply at least 40 condoms per visit and advise the client to come back before they are finished.

6.3. Natural family planning:

This method is only useful for motivated couples who are willing to learn about a woman's cycle and practise abstinence from sex during the fertile period which might be one or two weeks per month. It is based on the fact that a woman is only fertile around her ovulation period. This fact makes it impractical for women with an irregular menstrual cycle and for women who are breast feeding. It is a good method for couples who mainly want child spacing and in areas where drug supplies are very unreliable.

Prevention

Advantages

- No involvement of drugs
- No supplies needed
- No religious objections against this method

Disadvantages

- Only suitable for stable motivated couples.
- Needs quite a lot of education
- Couple has to be willing to abstain from sex or use another method during certain periods.
- Not fit for women with an irregular cycle
- Not fit for women who are breast feeding
- In general not very reliable

Use

A woman can only become pregnant around the time of ovulation. The menstrual cycle is counted from the first day of menses, day 1. Ovulation usually occurs on or around day 14. So the period between day 7 and day 16 is called the fertile period, and the couple should not have sex during that time or use condoms. The other days are called safe periods.

The method can be made more reliable by introducing two other parameters: the structure of the cervical mucus and the temperature of the woman. It really needs several lessons for both partners by an experienced teacher to make the method effective.

6.4. Combined oral contraceptive pill

This pill is a combination of oestrogen and progesterone and has to be taken daily. When correctly used it is a highly effective FP method. If a woman is interested, refer.

6.5. Injectable progestogen only: (Depo-Provera)

This is a slowly absorbed depot IM injection which provides contraceptive protection for three months. If a woman is interested, refer. She needs to come to the clinic every 3 months.

6.6. Surgical contraception

This is an operation that can be done on either the woman or the man. It can be the wish of couples with very big families or of women for whom it would be very risky to become pregnant again (due to illness or several caesarean sections.).

The procedure needs good counselling because it is irreversible, that means it can not be repaired once done. People have to be ensured that it does not cause any loss of sexual ability or pleasure.

7. Nutrition and breastfeeding

For a child to reach his full potential in life, he/she needs good food from the time of conception.

7.1. Nutrition in and before pregnancy

A woman should start her pregnancy in a good condition; she should not be younger than 18 and not older than 40. There should be enough spacing since her last delivery, preferably 2 years or more and she should not be anaemic or malnourished.

To ensure that a baby gets enough food in the womb the mother needs to eat nutritious foods and eat more than normal. On average a mother should gain 8 to 10 kilo during her pregnancy for the baby to grow well.

She can eat all the normal foods. The only taboos are alcohol, smoking and certain medicines. So always ask a woman if she is pregnant before you prescribe medicines to her.

Enough rest has a positive influence on the growth of the baby; the mother can do normal work but should not do excessive labour.

Some infections can influence the placenta, especially malaria. Since malaria is very common in Southern Sudan all pregnant mothers should receive SP (sulfadoxine/ pyrimethamine) twice during their pregnancy and a bed net. (See chapter 3 on ANC)

7.2. Breast feeding

Mother milk is the best feeding for the baby; it is free, clean, has the right temperature, the right nutrients for the baby, contains antibodies against some diseases and increases bonding between mother and child.

Breast feeding should start as soon as possible after birth, preferably within the first hour. It also benefits the mother because it helps the uterus to contract and reduces bleeding.

The child should never be separated from the mother after delivery and should not be given other food or fluids. The more the baby sucks the more milk the mother will produce.

The first six months of the baby's life mother milk is enough for all his needs. This means the baby should only get breast milk, not even additional water. During this period the mother needs extra food and rest, because when the baby grows she has to produce up to one litre of milk per day and this takes a large amount of energy. Breast feeding should ideally continue for 24 months.

Common problems during breast feeding can be overcome by following good advice. This is a priority area, without breast feeding most children will die.

Prevention

Problem	Action
Baby does not drink well. This can be due to prematurity, birth injury, severe inf., congenital abnormal, e.g. cleft palate	Express milk from the breast and feed with cup and spoon. If the baby does not drink enough milk like this, then he/she needs a naso-gastric tube.
Mother's milk is not enough, e.g. in twins.	Encourage the mother to eat and rest more and breast feed both. Earlier introduction of extra feeds might be needed.
Hard swelling of the breast (after delivery)	Disappears if the baby can grasp the nipple and suck. Good position and gentle massage of the area around the nipple can help.
Cracked nipples	Express the milk by hand and feed the child with cup and spoon. Put gentian violet on the cracks until they heal.
Mastitis (and abscess)	Express the milk gently every 4 hours on the affected side. Let the baby suck from the other breast. Give the mother amoxicillin and painkillers. If an abscess has formed, incision is probably needed.
Inverted or flat nipples	Needs to be addressed during ANC. Teach mother to pull the nipple out at least twice a day.
Worry/ lack of confidence	Stimulate milk secretion by having the baby suck more often. Encourage the mother.
Wrong beliefs	Mother milk can not be "bad". A special note has to be made for mothers who are proven HIV +, there is a chance that the infection can be transmitted to the baby. More about this in chapter 5 about HIV

7.3 Introducing weaning foods:

If the baby is growing well and satisfied after breast feeding it is good and safe to wait with introducing foods until he/she is six months old.

Introduce new foods one at a time and increase slowly. Unless the mother is HIV positive then she has to wean abruptly (see chapter 5).

The food should be given before breast feeding, when the child is still hungry. The type of food given depends on what is available, but it has to be soft or mashed. Mashed bananas or porridge are good starters. Always give by cup and spoon, never use a bottle!

After a few weeks start enriching the porridge with some food containing fat and protein, like ground-nut sauce, mince meat or fish. Then add fruits or vegetables to at least one meal. Gradually increase the number of meals to 4 or 5 feedings by the time the child is 9 months old. But, while introducing weaning foods, the mother should continue to breastfeed!

Prevention

Always remember a child has a small stomach and cannot eat enough in 2 or 3 meals a day, he needs more frequent feeding.

Mixed feeds are better than meals with one type of food. Add oil or fat in small amounts to soften the mix and increase energy.

As the infant grows and his teeth develop he can eat more of the family food, but he still needs feeding more often. At the age of 2 the breast feeding can be stopped. Never stop abruptly but slowly reduce the number of feeds.

Regular growth monitoring in the clinic or during EPI can give early warning when a child is not growing well and you can advise the mother accordingly.

7.4 Nutrition and illness

Nutrition and illness influence each other. If a child is ill often it will eat less and become weaker. He will have less resistance against disease and fall ill again, etc. This is called a downward spiral and it has to be interrupted.

Therefore when a child is ill continue to breast feed and give frequent easily digestible meals. After a period of illness, especially measles or diarrhoea the child needs extra food to catch up on his growth.

7.5 Too much nutrition /obesity:

This is not yet a common problem in Southern Sudan. Worldwide though, it is becoming a major problem. If children eat too much and especially too much sugar and fat and in addition are not very active they become obese. Obese children often turn into obese adults. Obesity has its own risks and complications, like diabetes, hypertension, stroke, etc. More is not always better, there has to be a balance between food intake and activity.

8. Accidents and injuries.

Many accidents and injuries happen in and around the house and often they can be prevented. Some common accidents are discussed in this chapter.

8.1 Burns:

Burns are often seen in young children. They are either caused by direct fire or by hot fluids. In many compounds/houses the child has easy access to fire or cooking pots; often the mother or caretaker is too busy to watch the children at all times. Another group at risk are people with epilepsy; never let them stay near a fire unsupervised.

Solutions are not always easy. Sometimes it is possible to raise the cooking stove, but even then it is possible that a toddler will grab the handle of a cooking pot and get hot food over his head. Another option is to fence the cooking area. Burns are terrible traumas that result in scars for life. Think about prevention!!

A big danger for all age groups is also the burning of bushes on a grand scale. Every year it claims many victims. Let the bush burning be done by experienced people and keep children away.

8.2 Poisoning:

Too often children accidentally drink kerosene, insecticides or swallow some tablets that are within reach. This should not happen.

- Never keep insecticides, kerosene etc in a place where small children can reach them.
- Never keep poisons in cola or other drinking bottles; even older children may mistake them for a soft drink and one sip can do major damage.
- Keep all medicines out of reach of children. Put them in a plastic bag and hang them high on a pin in the house.
- It is even better to keep all poisons and medicines behind locks, as even teenagers can at times be unstable and in the heat of a moment swallow some drugs or poison, either to get attention or as a suicide attempt.

8.3. Traffic accidents:

Until now there is not much traffic in Southern Sudan and therefore not many accidents. This also means that children are not aware of the dangers of vehicles. Never let children play on the main road, even if there is little traffic. The same goes for train tracks that will be restored in the near future.

Prevention

8.4. Drowning:

Many people in Southern Sudan live near rivers, and the rivers often fluctuate enormously in size during the seasons. When the rivers are high the current can be very tricky.

Therefore, if people live close to rivers they have two options:

- Instil in children a proper fear of the dangers of water, so that they will stay away from the rivers.
- If they have to go near the water, teach them how to swim.
- Never allow toddlers unsupervised near the water.
- The same goes for people with epilepsy.

8.5. Pits, holes and latrines:

Make sure they are all properly covered or fenced, so that small children cannot fall in accidentally.

8.6. Weapons and landmines:

In some areas there will be landmines for years to come, and worldwide landmines have taken their victims mainly amongst women and children.

- Explain to children at home and in school that land mines exist and that they should never touch suspect objects but instead warn an adult.
- As a community try to get your area cleared of landmines as soon as possible.
- If there are children it is better not to keep weapons in the same house. If people do need to keep them they should be behind lock and unloaded. Never let children play with guns, not even unloaded ones.

8.7. Dog bites, bats:

Dogs and bats are the main sources of rabies, a very dangerous disease. By a bite of an infected animal rabies can be transferred to people. To prevent this:

- Vaccinate all dogs owned by people against rabies (discuss with the veterinary department).
- Shoot all stray dogs.
- Eliminate hoards of bats.
- If a person is bitten try to catch the dog and watch his behaviour.
- If the animal is suspect for rabies refer the person for vaccination as soon as possible.

8.8. Non accidental injuries

People can injure each other deliberately during a fight. There are two factors that can escalate a fight:

- Possession of arms
- Alcohol abuse

The combination of both is worse. Try to discourage both.

8.9. Child abuse and neglect

Most abuse happens at home in the family. Wife beating and child abuse are present in each society. If you see patients with unexplained injuries always consider the possibilities of abuse and encourage them talk about it.

Discourage the use of physical child punishment both at home and in schools. There are other ways to discipline children.

Child abuse or neglect is more common in the following high risk situations:

- Poverty of the family, resulting in parents not able to feed their children
- Social isolation of the family
- Single mothers/Unplanned/ Teenage parenthood
- Children with a mental or physical handicap.
- Mothers with a psychiatric illness
- Alcoholism/ Broken families

Remember that most of these situations are more common in a situation of war and displacement. Both parents and children in these high risk families need support from the health worker and the community.

8.10. Educate your child

Probably the best protection for life parents can give their children is education. Try to send both sons and daughters to school. It will increase their knowledge about health, hygiene, and nutrition and help them to raise their children.

Education includes knowledge about sexual health, pregnancy and HIV/AIDS. Young girls need to be equipped with the knowledge and the confidence to say no to sex if they want to.

9. Water and Sanitation.

Many infections can be prevented by good hygiene and proper sanitation.

9.1. Personal hygiene

- Wash your hands with soap or ash after visiting a latrine
- Wash your hands with soap or ash after cleaning a child's bottom.
- Wash your hands before handling food.
- Wash your face and esp. childrens faces at least once a day. Dirty faces and flies cause trachoma and blindness.
- Regular washing of the body helps to prevent skin diseases.

9.2. Food preparation

- Cooking should take place in a separate area in the household, away from animals
- The kitchen area should be kept clean and tidy .
- Food should be stored in covered containers and utensils should be stored on shelves (not the floor)
- Raw food such as fruit and vegetables should be washed or cooked. Cooked food should be eaten as soon as possible.

9.3. Water storage

- Water for drinking should ideally be boiled and filtered and kept in a clean container with a lid.
- Drinking water should be kept separate from washing water and scooping utensils should be clean.
- A patient with an open sore due to guinea worm should never enter a water source, as he/she will spread an enormous amount of worms in the water.

9.4. Use of latrine/burying stools

- A well built latrine reduces spread of diarrhoea
- To keep a latrine clean is essential
- Teach young children how to use a latrine properly
- Dispose of babies faeces also in the latrine.
- If there is no latrine available people should bury their and their children's stools far from houses and water sources.

Treatment of common diseases

1 Malaria

Suspect malaria in a patient with a fever or history of fever within the last 48 hours with or without any of the following symptoms:

- Typical malaria attack: shivering, high fever and sweating
- Joint and muscle pain
- Headache
- Gastro-intestinal problems (nausea, vomiting, diarrhoea)
- Anaemia (Pale palm of hands, pale nails, pale inner eye lids)
- Jaundice (yellow eyes)
- Splenomegaly (A palpable big spleen)

In young children malaria can have very non-specific symptoms, like cough, diarrhoea or failure to breastfeed. Therefore in a malaria area always have a high grade of suspicion for malaria in any child with fever.

1.1. Diagnosis:

1. Do an axillary temperature on every patient reporting fever or history of fever in the last 48 hours.
2. If they have measured fever (greater than 37.5°C) take history and do physical examination to find other obvious reason for fever, if found treat as appropriate.
3. If no other obvious cause found, check when they last took malaria treatment. If this was longer than 2 weeks ago do a Rapid Diagnostic Test (RDT)

Further do a RDT on:

- Reported fever in pregnant women or children under 5 years of age
- Patients without fever who are severely ill, having convulsions or are unconscious.

1. *If feasible, let children over 5, with vague malaria-like complaints but no fever come back after a few hours or in the evening to recheck the temperature.*
2. *In a patient under five with a fever without obvious cause you are allowed to treat for malaria without testing. If you want to be sure it is always good to test.*

Treatment

Notes:

1. See Annex for guidelines how to use the Para check, a Rapid Diagnostic Test which can detect the most common type of malaria caused by Plasmodium Falciparum.
2. Do not do a Rapid Diagnostic Test on patients that have been treated with Artesunate and Amodiaquine in the last 2 weeks. There is a good chance that the test will still be positive from the previous attack of malaria. Look for another cause of the fever.

1.2. Treatment of uncomplicated Malaria:

In case the Rapid Diagnostic Test is positive, treat with a combination of Artesunate and Amodiaquine for 3 days. These drugs are pre-packed in blisters. Always give the first doses of the treatment in the clinic.

If the RDT is negative, the patient will probably not have malaria! Look for other causes of fever.

Artesunate (AS) 153 mg + Amodiaquine (AQ) 50mg:

Age	< 1 yr	1- 5 yrs	5-15 yrs	> 15 yrs
Wt	4 – 8 KG	8 – 15 kg	15 – 35 kg	>35 kg
Day 1	½ AS + ½ AQ	1AS + 1AQ	2AS+ 2AQ	4 AS + 4 AQ
Day 2	½ AS + ½ AQ	1AS + 1AQ	2AS+ 2 AQ	4 AS + 4 AQ
Day 3	½ AS + ½ AQ	1AS + 1AQ	2AS+ 2 AQ	4 AS + 4 AQ

1.2. How to give the Artesunate / Amodiaquine blister packs:

- Adults need a blister containing 12 + 12 tablets, so 12 Artesunate tabs and 12 amodiaquine tabs. Children from 5 to 15 years old need 6 + 6 tablets so you have to cut the blister in half (6 from each). For children from 1 to 5 you cut a quarter blister with 3+3 tablets. For children under 1 year you have to open the blister yourself and cut the tablets in half, give the first dose in the clinic and two half tablets of each amodiaquin and artesunate home.
- Show people the blister / package and explain how to get the drugs out of the blister. Explain when to take the drugs according to the scheme on the blister.
- **The first dose of Artesunate and Amodiaquine should always be given under medical supervision in the clinic. Keep children the first 30 minutes for observation. If they do not vomit they can go home. If they vomit the tablets, repeat the full dose.**

Treatment

- Drugs should be given in a single oral dose once a day.
- Reduce the temperature by tepid sponging and paracetamol. This will prevent vomiting and convulsions.
- Encourage the patient to take plenty of fluids, including breast milk.
- Some side effects of the artesunate/ amodiaquine: nausea, abdominal pain, diarrhoea, itching. Mostly they are mild and the patient can just continue the treatment.
- Most of the time 3 doses paracetamol are enough. Give the first dose in the clinic, then give two doses at home in case the temperature will rise again.
- If a patient does not feel better after 2 days or if the condition gets worse, he / she should return.

Failure to respond can be due to:

- *Not having taken the tablets well*
- *Vomiting after the medication*
- *The fever may have another cause than malaria*
- *The parasite may be resistant (this is unlikely with the new drugs).*

Paracetamol:

Age:	Below 2 M	2 M -12 M	1 – 5 yrs	5- 15 yrs	>15 yrs
Wt	< 4 kg	4-8 kg	8- 15 kg	15-35 kg	>35 kg
120 mg	½ tab if needed	1 tab if needed	2 tab if needed		
500 mg			½ tab if needed	1 tab if needed	2 tab if needed

1.3. Malaria in pregnancy:

Malaria is very dangerous in pregnancy. Do a Rapid Diagnostic Test (RDT) on all pregnant women with fever attending OPD or ANC.

If the RDT is negative and the woman is more than 3 months pregnant, give three tablets of SP and look for other causes of fever. All pregnant women should receive twice a dose of SP during pregnancy; once in the second and once in the third trimester.

If the RDT is positive, treat with Artesunate + Amodiaquine.

In the first trimester of pregnancy artesunate/amodiaquin has not been proven to be safe so you have to refer to a PHCC for quinine.

2. Severe Malaria:

In severe malaria, the patient has the same complaints as in uncomplicated malaria and one or more of the following symptoms:

- Very pale inside of the hands, very pale eye lids, poor refill of blood on the nails when you press (Severe anemia)
- Very high fever, temperature higher than 40.5 (Hyperpyrexia)
- Fits (Convulsions)
- Unconsciousness due to malaria (Cerebral malaria)
- Not able to drink or breastfeed or continuous vomiting
- Dark/coca-cola coloured urine (Hemoglobinuria)
- Low blood sugar, common in small children and pregnant women (Hypoglycemia)
- Very weak pulse and / or low blood pressure (Shock)
- Lung oedema, causing a very high respiration rate (Pulmonary oedema)

Severe malaria is a medical emergency and the patients (especially children under 5 years old and pregnant women) are at high risk of dying. Mortality in severe malaria is often due to delay in treatment or referral.

2.1. Treatment of Complicated (Severe) Malaria

If the patient has severe (complicated) malaria you have to take immediate action:

1. Refer immediately
2. If immediate referral is not possible or as an immediate measure before referral take the following action:
 - If the patient can swallow and does not vomit, give the AS/AQ orally.
 - If the patient cannot swallow give 1 dose of Artesunate Rectal Capsule(s) before sending the patient. (If the patient cannot be referred, Artesunate Rectal Capsules can be a life saving treatment and a very good alternative to injections. If the Unit is far from a referring centre, it is good to have Artesunate Rectal capsules for emergencies).
 - If the patient can swallow, give sugar water, ORS, or (for babies) expressed breast milk, as they often have a low blood sugar.
 - In case of very severe anaemia refer to a place where blood transfusions are possible and send a (preferably male) donor with the patient since blood banks prefer men as donors.

Treatment

Rectal Artesunate 50 mg :

AGE	Capsules, single dose daily As long as needed
0 - 6 months	Do not use
6 - 11 months	1
1 - 2 years	2
3 - 4 years	3
5 - 10 years	4
Over 10 years	8

- If the rectal capsule is expelled within the first hour, insert another capsule immediately.
- If after 24 hours the patient is still unconscious, not well or vomiting and you are still unable to refer, give a second dose.
- Same for the third day.
- After the patient regains consciousness, is no longer vomiting and is able to swallow, give him/her still the full course of AS/AQ malaria oral treatment (blister) for 3 days.
- Do not forget to do tepid sponging if the fever is very high and give paracetamol tablets for fever if possible. This will prevent vomiting and convulsions.

2.2. How to Give Rectal Artesunate:

1. Wash your hands thoroughly with soap and water.
2. Lie the patient down on the side or front; if lying on the side, the lower leg should be straight and the upper leg bent towards the chest.
3. Remove garments covering the patient's buttocks.
4. Put on a pair of examination gloves.
5. Remove the necessary number of rectal capsule(s) from the wrapper.
6. Dip one rectal capsule in drinking water to moisten.
7. With one hand, gently separate the patient's buttocks so you can see the anal opening.
8. With other hand, gently push the rectal capsule into the anal opening.
9. Using one finger, push the rectal capsule into the rectum (2 - 4 cm).
10. Remove your finger and check to ensure the rectal capsule remains inside.
11. Repeat steps 6-10 until the full dose has been administered.
12. Remove gloves and dispose as clinical waste.

Treatment

2.3. Treatment of Anaemia caused by malaria

(Repeated) malaria attacks can cause anaemia. If the patient is anaemic give advice on good nutrition and once the malaria treatment is over, give a one month supply of Ferrous Sulphate/ Folic acid and then ask him/her to come back for review.

Ferrous Sulphate 200mg/ Folic Acid 0,25mg

Age	Dose
0 - 12 months	¼ tab X 1 X 30
1 - 4 years	1 tab x 1 x 30
5 - 10 years	1 tab x 2 x 30
Over 10 years	1 tab x 2 x 30

3. Diarrhoea

Diarrhoea = more than three loose stools per day. If it is accompanied with fever and blood and pus in the stools it is called dysentery.

In a child any disease can be accompanied with diarrhoea, so a child with diarrhoea can also have an ARI, malaria, a viral infection, etc.

3.1 Dehydration in children:

In all children with diarrhoea check whether the child is dehydrated. Dehydration means that more water leaves the body than comes in and the body will become too dry to work well.

Prevention of dehydration:

- Teach mothers the 4 F's (Fingers, Faeces, Food, Flies), general hygiene and measures to prevent diarrhoea.
- Teach mothers the importance of fluids and how to prepare and give ORS.

Table: Signs of dehydration

Dehydration	No dehydration	Some dehydration	Severe dehydration
Condition	normal	Irritable	lethargic
Eyes	Normal	Sunken	very sunken, dry
Tears	Present	Absent	absent
Thirst	Normal	Thirsty	drinks poor or not able to drink
Skin pinch	goes back quickly	goes back slowly	goes back very slowly
PLAN	Child can go home with treatment	Child has to stay at the clinic and has to be closely observed by staff and reassessed by the CHW before leaving the clinic or be referred if not improving.	

Treatment

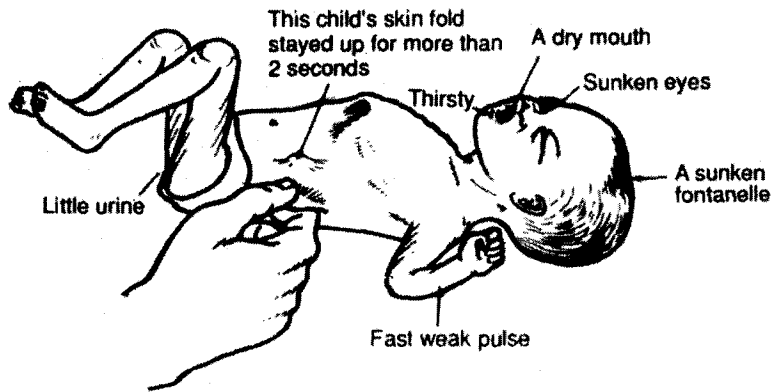


figure 1. Signs of severe dehydration.

Treatment of no dehydration

- Continue (breast) feeding
- Give extra fluids/ ORS
- Return to the clinic when any danger sign develops

Treatment of some or severe dehydration:

- The mother and child should stay at the clinic. Give ORS with supervision and support of the staff responsible.
- In severe dehydration try to refer urgently (in the meanwhile give ORS)
- Establish the amount of ORS needed for the child (see tables below). This is the amount needed in the first 6 hours. Explain to the mother how much the child has to drink each hour. Always assess and evaluate after 6 hours.
- If the child has very watery stools give one extra cup of ORS for each loose stool for children under 2 years, 2 cups for children over 2 years old.
- Check the child frequently to assess the situation. The child should stay until the clinic closes and be re-assessed before being sent home or referred.
- If the child is breast feeding continue breast feeding. If he/she does not want to suck, teach the mother how to express her milk and give it by spoon, alternating with the ORS.
- If the child is sleeping wake it up every half hour to drink a little.
- If a child wants to drink more, this is fine, unless the child is vomiting after drinking too much.

Treatment

- If the child vomits wait 10 minutes, then give frequent small sips gradually increasing the amount if the child tolerates it .
- In severe cases, when the child does not want to drink the ORS must be given very slowly! If he still refuses all fluids refer for a NG tube.
- Inform the mother about the danger signs (see below). Children with danger signs need to be referred if possible.
- Explain to the mother that she has to continue to give ORS overnight.
- The child has to come back to the clinic the next morning for re-assessment
- The child may have to stay nearby for close observation or be referred.

HOW MUCH ORS TO GIVE DURING THE FIRST 6 HOURS:

In some dehydration

Age	2-4 months	4-12 months	12-24 months	2-5 years
ORS in 6 hours	500 ml	500-1000 ml	1000-1200 ml	1500 ml
ORS per hour	80 ml	80- 180 ml	200 ml	250 ml

In severe dehydration

Age	2-4 months	4-12 months	12-24 months	2-5 years
ORS in 6 hours	1000 ml	1500 ml	2000 ml	2500 ml
ORS per hour	180 ml	250 ml	300 ml	400 ml

Especially in young children remember to alternate with milk/breastfeeding

Three methods to make ORS

1. Packet based, glucose based

- Follow the instructions on the packet. Most packets are based on making 1 litre of ORS. ALWAYS read the packet to make sure.
- Add the required amount of water (use local containers to explain the amount to the mother)
- Use 1 litre clean or boiled water.
- Keep in a clean, covered container.
- Use within 24 hours, throw away leftovers.

2. Sugar and salt solution (SSS), sugar based

- Use an appropriate clean bottle or any other 1 litre container.
- Fill it with 1 litre clean or boiled water.
- Add ½ level standard (5ml) teaspoon of salt, or 2 pinches (using thumb and 2 fingers).
- Add 4 level teaspoons of sugar or 1 handful (using 4 fingers).
- When mixed the fluid should taste like tears.
- If available squeeze in one orange.

3. Rice-based ORS

- Ground two fistfuls of dry rice into a powder.
- Cook the powder in 1 litre of water.
- Add two pinches of salt (using thumb and 2 fingers).
- Cool down and use as normal ORS.

Whichever option you use always teach the relative/caregiver and ensure that he/she understood the instructions.

General danger signs in children

- The child is unable to drink or breastfeed
- The child has convulsions
- The child is abnormally sleepy or difficult to wake
- Sunken eyes

3.2 Treatment of Diarrhoea.

3.2.1. Acute diarrhoea

In acute diarrhoea without fever, pus or blood usually antibiotics are not necessary;

General measures:

- Give vitamin A if the last dose was more than one month ago.
- Give Zinc once daily for 10 days
- Examine a stool for blood, pus and consistency.
- Assess the child for any other diseases
- Ask if any worms were seen.
- Monitor the weight

Antibiotics:

- Most of the time no antibiotics are needed
- If the child is very malnourished or very ill you can consider cotrimoxazole and it probably needs referral.

Fluids/ feeding:

- For rehydration see above
- Always continue breast feeding

3.2.2. Diarrhoea with blood

There are two types of dysentery (diarrhoea with mucus and blood); one is caused by bacteria, the other one by amoebae.

General measures:

- Give vitamin A if last dose > 1 month ago. (but not more than 2 months in a row)

Treatment

- Give Zinc once daily for 10 days. Start the Zinc as soon as the diarrhoea starts.
- Collect a stool sample to confirm there is blood and/or pus.

Foods/fluids:

- Rehydration is most important.
- Keep on (breast) feeding

Antibiotics:

- If there is no fever treat with metronidazole for 5 days.
- If the bloody diarrhoea is accompanied by fever, treat for bacterial dysentery with ciprofloxacin for 5 days.
- For pregnant women with bloody diarrhoea: do not give ciprofloxacin but give amoxicillin instead
- If there is no relief with the ciprofloxacin after 5 days, give metronidazole
- In areas with schistosomiasis you can try praziquantel, as a single dose.

Further management:

- If there is no relief after one week or if the condition gets worse, refer
- If the child is very anaemic or malnourished refer immediately.

3.2.3. Cholera

Classic cholera is characterised by the sudden onset of severe acute painless diarrhoea (rice-water stools) and vomiting usually without fever and – without treatment - rapid dehydration and death can occur. Incubation period is normally 2-4 days. It is spread by faecal-oral route.

A cholera outbreak is a medical emergency and needs to be dealt with and reported to WHO EWARN system and the nearest PHCC immediately. Initial treatment needs to be immediate aggressive hydration as the patients can often lose a litre per hour of fluid. Cotrimoxazole can also be started and should be given for 3 days but other drugs are available at the PHCC level including IV fluids.

3.2.4. Persistent diarrhoea

Persistent diarrhoea is diarrhoea lasting for longer than 14 days, without blood in the stool. It can be caused by:

- Infection (often giardiasis)
- Malabsorption, e.g. in malnutrition.
- Too many antibiotics
- HIV infection or other causes of inability to fight disease (immunodeficiency) such as TB or kala-azar
- A combination of the above

Treatment

General measures:

If the child has not been responding to previous treatment (metronidazol, vit A, zinc, rehydration) and it is malnourished refer to a PHCC or Hospital.

Regardless of the cause, the most important treatment for diarrhoea is to replace the fluids lost through diarrhoea and vomiting

Cotrimoxazole:

Age	< 1 yr	1 – 5 yrs	5 – 15 yrs	> 15 yrs
Wt	3 – 8 kg	8 -15 kg	15 – 35 kg	> 35 KG
100/20 mg	1 tabx2 x5	2 tabs X 2 X 5		
400/80 mg			1½ tabs X 2 X 5	2 tabs X 2 X 5

Metronidazole:

Age:	< 1 yr	1 – 5 yrs	5 – 15 yrs	> 15 yrs
Wt	4 – 8 KG	8 – 15 kg	15 – 35 kg	> 35 kg
200 mg:	¼ tab x 3 x 5	½ tab x 3 x 5	2 tabs x 3 x 5	3 tabs x 3 x 5

Ciprofloxacin

Age:	< 1 yr	1 – 5 yrs	5 – 15 years	> 15 yrs
Wt	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
250 mg	¼ tab x 2 x 3	½ tab x 2 x 3	1 tab x 2 x 3	2 tab x 2 x 3

Praziquantel:

Age:	< 5 yrs	5 – 10 yrs	10-15 yrs	> 15 years
Wt	< 15 kg	15 – 25 kg	25- 35 kg	>35 kg
600 mg	Do not give	1½ tab x 1 x 1	2 tabs x 1 x 1	3 -4 tabs x1x1

Zinc*

Age	2-6 months	6 months-5 years
20 mg	½ tablet once daily x 10	1 tablet once daily x 10

*dissolve in a bit of water or mothermilk on a teaspoon

4. Upper Respiratory Tract Infections (U.R.T.I.)

These infections include common cold, tonsillitis and ear infections

4.1 How to diagnose URTI

Stethoscopes are not reliable in diagnosing chest infections, especially in children. Therefore always check the respiratory rate (RR) and see if there are any signs of respiratory distress (RD). If there is a high respiratory rate or difficulty breathing think of a lower respiratory tract infection—see below.

Normal respiratory rates (RR):

0 – 2 months	< 60 respirations/ minute
2 months – 1 year	< 50 respirations/ minute
1 year – 5 years	< 40 respirations/ minute
Over 5 years	< 30 respirations/ minute

Signs of respiratory distress (RD):

- high respiratory rate (RR)/ fast breathing
- lower chest wall in drawings
- nasal flaring
- wheezing

If a cough persists longer than three weeks or/and if there is any blood in the sputum or weight loss consider TB

4.2 Common Cold.

Common cold = cough, nasal congestion, a sore throat or fever but

- no fast breathing,
- no chest in drawing or nasal flaring.

Treatment:

- Advise the mother to continue breastfeeding or to ensure good nutrition and hydration. Show the mother how to keep the child's nose clear.

Treatment

If the child has a fever give paracetamol and advice the mother how to do tepid sponging. Explain to the mother that the child will usually get better on its own. Explain to her to come back if the child gets worse or if the fever lasts for more than two days.

- It isn't necessary to treat a simple cough or runny nose with antibiotics, as common colds are caused by viruses, for which antibiotics do not work (Antibiotics only work against bacterial infections).

4.3 Streptococcal Tonsillitis (Sore Throat):

Tonsillitis = an infection of the tonsils and throat causing a sore throat and fever with

- enlarged, red tonsils with pus (white/yellow dots)and
- enlarged, painful lymph nodes on the neck

Note: A sore throat without enlarged tonsils or painful enlarged glands is a common cold and does not need antibiotics.

Treatment:

- Amoxicillin (antibiotic) for 1 week.
- Paracetamol to bring the fever down or relief the pain
- Tepid sponging
- Make sure the child continues feeding and is well hydrated
- Give the first dose of paracetamol in the clinic and then 2 or 3 doses for at home.

Amoxicillin

Age:	<2 M	2- 12 M	1 – 5 yrs	5 – 15 yrs	>15 years
Wt	<4 kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	> 35 kg
250 mg	¼ tab x3x7	½ tab x3x7	1 tab X3X7	1 tab X3X7	2 tabs X3X7

Paracetamol

Age:	<2 M	2 – 12 M	1 –5 yrs	5 – 15 yrs	>15 yrs
Wt	< 4kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
120 mg	½ tab if needed	1 tab if needed	2 tab if needed		
500 mg			½ tab if needed	1 tab if needed	2 tab if needed

Treatment

4.4 Ear problems in a child

An acute ear infection will start with a painful ear; after the ear drum ruptures discharge will come out of the ear. An acute infection may develop in a chronic infection, which can (rarely) cause an infection of the mastoid bone.

4.4.1 Acute ear infection:

A painful ear or pussy discharge from the ear for less than 2 weeks.

General management

- If there is discharge, dry the ear: roll some cotton wool in a wick and put it in the ear for about half a minute, remove it and repeat this until the ear is dry. Teach the mother to do this 3 or 4 times a day.
- Do not put oil in the ear.
- Give paracetamol if the ear is painful.

Antibiotics

- Give amoxicillin for 7 days.

Amoxicillin:

Age	<2 M	2 -12 M	1 – 5 yrs	5 – 15 yrs	>15yrs
Wt	<4kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
250 mg	¼ tabx3x7	½ tab x3x7	1 tab x3x7	2 tab x3x7	2tabs x3x7

4.4.2 Chronic ear infection:

Pussy discharge from the ear for more than two weeks, no pain, no fever and no swelling.

General management

- Dry the ear (see acute ear infection)

Antibiotics

- Do not give antibiotics
- Give paracetamol if the ear is painful.

5. Pneumonia (Lower Respiratory Tract Infection)

5.1 Pneumonia (moderate)

Moderate pneumonia = Child with cough and fever and

- fast breathing (RR > 50 in < 1 year old; RR > 40 in 1-5 year old children, etc. see chapter 4 about URTI)
- no chest indrawing,
- no nasal flaring
- no other severe signs (see below).

Treatment:

- Give Amoxicillin for 5 days.
- Give the first dose of amoxicillin (double dose) in the clinic.
- Advice to continue breastfeeding or ensure child is drinking / eating well.
- Give paracetamol to reduce fever, give the first dose in the clinic then two or three doses for at home.
- Tell the mother to keep the nose clear by wicking with cotton or putting a few drops of salt water in each hole. (NEVER PUT OIL).
- The child must be seen within the next day to check if the child is getting better or worse (not feeding well, difficult breathing, becoming drowsy...).
- Advice the mother to come back if she is worried or the child is getting worse. Children with chest infections can become very sick very fast and might die in hours if not adequately treated.

Paracetamol

Age:	<2 M	2 – 12 M	1 – 5 yrs	5 – 15 yrs	>15 yrs
Wt	< 4 kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
120 mg	½ tab if needed	1 tab if needed	2 tab if needed		
500 mg			½ tab if needed	1 tab if needed	2 tab if needed

Amoxicillin:

Age	<2 M	2 -12 M	1 – 5 yrs	5 – 15 yrs	>15yrs
Wt	<4kg	4 – 8 kg	8 – 15 kg	15 - 35 kg	>35 kg
250 mg	$\frac{1}{4}$ tabx3x5	$\frac{1}{2}$ tab x3x5	1 tab x3x5	2 tab x3x5	2 tabs x3x5

Treatment

5.2 Pneumonia (severe):

Severe pneumonia = signs of pneumonia and one or more danger signs:

- Chest indrawing
- Nasal flaring
- Not able to drink/poor sucking when breastfeeding (child stops feeding)
- Convulsions
- Sleepy or difficult to wake up
- Severe malnutrition
- Fever in infants younger than 2 months
- Stridor in a calm child (sounds like a wheeze on breathing in)

This condition requires prompt treatment. Refer or if not possible let the patient stay in the clinic. Give the medicines under direct observation.

Treatment of severe pneumonia:

1. Antibiotics: Amoxicillin. Note that the dose is higher than for moderate pneumonia. If the child is not able to swallow refer.
2. Fever: If the child has a high fever, cool him/her down by tepid sponging or fanning, and give paracetamol regularly to prevent the fever from rising again.
3. Careful positioning: sick infants are more at risk of complications if they lie flat. If a child has difficulty breathing prop him up to about 30 degrees, this will help the breathing and is also a good position to feed the child. If the child is unconscious lay him in the safety position (on the side) and turn it regularly.
4. Convulsions: these may be related to high fever, due to lack of oxygen or low blood sugar. Check the time so you know how long the convulsion lasts. Ensure the child is in the safety position and that the upper airway is clear. Bring the temperature down (see above) and consider if the child might have low blood sugar.
5. Not able to drink or breastfeed: this may be due to difficult breathing (the infant cannot breathe and suck at the same time if he has a blocked nose, or if he finds breathing very difficult). Clear the nose, if congested, and see if this improves his condition.
6. Assess the hydration state frequently: if able to drink, ensure adequate hydration with breast milk or ORS/sugary drinks. If the child is not sucking well teach the mother how to express her milk and give it by spoon. Sick children often will manage with very small meals given frequently. If they are not able to drink at all, refer for a NG tube.

Treatment

7. If you cannot refer keep the child in or close to the clinic.
8. Give the amoxicillin for 5 to 10 days.

Amoxicillin: (high dose) *

Age	<2 M	2 -12 M	1 – 5 yrs	5 – 15 yrs	>15yrs
Wt	< 4kg	4 – 8 kg	8 – 15 kg	15 - 35 kg	>35 kg
250 mg	½ tabx3x5	1 tab x3x5	2 tab x3x5	3 tab x3x5	4 tabs x3x5

*give longer than 5 days if needed (upto 10 days)

Paracetamol

Age:	<2 M	2 – 12 M	1 – 5 yrs	5 – 15 yrs	>15 yrs
Wt	< 4 kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
100 mg	½ tab if needed	1 tab if needed	2 tab if needed		
500 mg			½ tab if needed	1 tab if needed	2 tab if needed

6. Common Eye diseases

6.1. Affecting both eyes:

- Bacterial conjunctivitis is an infectious eye disease: the eyelids are red and swollen. There is often pus seen in the eyes.
Treatment: Tetracycline eye ointment three times daily for 1 week.
Before applying the ointment clean the eyes with wet cotton from outside to inside.
- Viral conjunctivitis: Slightly swollen eyelids, often just watery discharge.
Treatment: No medication needed. If you doubt between bacterial and viral conjunctivitis give tetracycline eye ointment for one week as above.
- Allergic conjunctivitis: Slightly swollen eyelids, watery discharge, itching.
Treatment: no medication needed, cold compresses for severe itching.
- Trachoma is a dangerous type of conjunctivitis, which, if not treated, can easily lead to blindness.
Treatment: Treat trachoma in earlier stages with health education about hygiene and with Tetracycline eye ointment for 6 weeks.
In later stages the eyelid can turn inwards, the eyelashes can scrape over the cornea, this needs an operation. Refer.
- Vitamin A deficiency ("night blindness") is caused by a poor diet. Bitot's spots (foamy white spots) can be seen in the eyes.
Treatment: 3 doses of vitamin A: on day 1, day 2 and day 14.
- Cataract: This happens mostly in older people, but sometimes in children. The centre of the eye (the pupil) becomes white. Mostly both eyes will be affected, but one may be worse than the others.
When it is fully developed it makes people blind. It can easily be operated, so refer to a hospital.

6.2 Mainly affecting one eye.

This is often due to trauma, although in the case of e.g. burns it can also affect both eyes.

- Foreign body:
Treatment: try to remove gently with wadded cotton wool
- Corneal abrasion: A superficial wound on the cornea.
Treatment: apply an eye pad with tetracycline eye ointment for 24 hours, then re-assess.
- Penetrating injury:
Treatment: gently cover the eye with an eye pad (put no pressure) and urgently refer to hospital.
- (Chemical) burns:
Treatment: wash the eye with water with a syringe (without needle) for half an hour. Then re-assess; if the cornea is involved, refer.

Treatment

6.3 Prevention of eye diseases

- Eye diseases are often caused by poor hygiene. Give health education to mothers and advice to wash the face and eyes of children 2 times a day.
- When doing dangerous jobs like spraying, working with wood and iron, try to protect the eyes.
- Refer all eye diseases that do not improve within 10-14 days.

7. Skin diseases

Diseases of the skin can be caused by germs, fungus, insects and poor hygiene. Skin diseases include rashes, scabies, impetigo, ringworm. Some diseases (malnutrition, measles, leprosy, chicken pox, syphilis, river blindness) cause changes of the skin but are not really skin diseases.

7.1 Scabies.

Scabies is caused by mites, which live in the skin. It presents as small itchy sores often between the fingers or at the armpits, elbows, buttock and the genitals, but the allergic reaction and thus the itching may be all over the body. The itching is worse at night.

As scabies is transmitted by close contact within families or groups, the whole family should be checked for symptoms and treated when necessary.

Treatment:

- Wash the whole body with soap
- Apply BBL (Benzyl Benzoate Lotion 25%) to the whole body, but not to the head and face. Dilute BBL if you use it on small children (under 5's) to ½ strength (1 part water + 1 part BBL). Do the first time in the clinic and teach the mother.
- Leave the BBL for 24 hours, then remove by washing thoroughly
- Repeat this the following day
- After the treatment wash clothes and bed sheets and dry in the sun
- Itching might continue for a while after treatment due to dead mites

Through scratching, the sores tend to get infected and they will open and have pus in them. Before treatment with BBL, the affected skin has to be cleaned and Gentian Violet has to be applied once a day until the sores are healed. Then start the treatment with BBL like mentioned above (if the patient lives far you can consider starting the BBL at the same time). If the infection is very severe, including many parts of the body or presenting with fever, give Amoxicillin for 5 days.

Amoxicillin:

Age	<2 M	2 -12 M	1 -5 yrs	5 - 15 yrs	>15yrs
Wt	< 4kg	4 - 8 kg	8 - 15 kg	15 - 35 kg	>35 kg
250 mg	¼ tabx3x5	½ tab x3x5	1 tab x3x5	2 tab x3x5	2 tabs x3x5

Treatment

Prevention.

Advice mothers to wash children regularly, put blankets regularly in the sun, and wash clothes.

7.2 Fungal infection

Fungal skin infection or ringworm can cause dry, scaly patches on the body, head or feet, which sometimes itch. Often they are healing on the inside which is why they look like rings.

Treatment:

For treatment the areas have to be washed with water and soap. If it's on the head, shave the hair. Then apply Whitfield's ointment (Benzoic Acid + Salicylic Acid) two times per day for at least 14 days or 1 week after the symptoms disappear. On the scalp it is advisable to treat for at least a month, then review. Patients should come back after 14 days for reassessment. If there is no improvement, refer. An alternative treatment could be Gentian Violet.

Prevention:

General hygiene measures

8. Wounds.

Treatment of non-infected wounds

- Clean infected and non-infected wounds with Chlorhexidin 0.3% + Cetrimide 3% solution as this contains an antiseptic and a detergent (soap). In the right concentration it can be used on skin and mucous membranes.
- Use gauze for the cleaning, not cotton wool, as this leaves some threads in the wound.
- After the wound has been cleaned, apply Gentian Violet (GV) daily to the wound. To make the solution you put 1 teaspoon of GV in 1 litre of water. Never use together with an iodine disinfectant.
- Cover large, deep wounds with gauze.
- Non infected wounds do not need an antibiotic.

Paracetamol

Age:	<2 M	2 – 12 M	1 – 5 yrs	5 – 15 yrs	>15 yrs
Wt	< 4 kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
100 mg	½ tab if needed	1 tab if needed	2 tab if needed		
500 mg			½ tab if needed	1 tab if needed	2 tab if needed

Treatment of infected wounds:

- Signs of infection are increasing redness, pain, the area is hot and there is pus (normally this happens after 3-5 days).
- Clean the wounds (Chlorhexidine/ Cetrimide) and paint with GV like the non- infected wounds.
- In addition treat the patient with Amoxicillin. If there is dead tissue in the wound: carefully remove the dead tissue with appropriate and clean equipment such as scissors and forceps.

Amoxicillin

Age	<2 M	2 -12 M	1 – 5 yrs	5 – 15 yrs	>15yrs
Wt	< 4kg	4 – 8 kg	8 – 15 kg	15 – 35 kg	>35 kg
250 mg	¼ tabx3x5	½ tab x3x5	1 tab x3x5	2 tab x3x5	2 tabs x3x5

9. Burns

Burns are common particularly in young children. Any burn greater than 10% of the body surface is considered extensive and dangerous because of fluid loss, loss of energy and the risk of secondary infection.

Treatment of small burns

In small burns, when the skin is red, painful and may have some blisters treat as follows:

- First aid: Put cold water, or cloths soaked in cold water, on the skin to cool the skin for at least 20 minutes
- Then clean the area with Chlorhexidine+Cetrimide
- Apply GV on the wound
- Dress lightly (if many flies)
- Clean daily
- Give paracetamol if needed
- Advise the patient to do exercises to avoid contractures, especially if the burn is close to a joint.
- Small burns normally do not need an antibiotic.

Treatment of deep and/or large burns:

Burns that cover more than 10% of the body surface or burns that may be deep with a white, dry and soft or a black, hard and painless skin (deep burns)

- First Aid: Put cold water or cloths soaked in cold water on the skin to cool the skin for at least 20 minutes
- Gently clean with Chlorhexidine+Cetrimide and dress daily
- Remove the dead tissue gently
- Apply silver sulfadiazine
- Cover with gauze and bandage
- Give Amoxicillin for 5 days
- Give paracetamol as long as necessary
- Advise the patient to drink a lot to replace lost fluids, give ORS
- Advise the patient to do gentle exercises to avoid contractures
- Refer the patient to a PHCC or hospital as soon as possible.

Amoxicillin:

Age	<2 M	2 -12M	1 - 5yrs	5 - 15 yrs	>15yrs
Wt	<4kg	4 - 8 kg	8 - 15 kg	15 - 35 kg	>35 kg
250 mg	¼ tabx3x5	½ tab x3x5	1 tab x3x5	1 tab x3x5	2 tabs x3x5

Treatment

Paracetamol:

Age:	<2 M	2 - 11 M	1 - 4 yrs	5 - 14 yrs	>15 yrs
Wt	< 4 kg	4 - 8 kg	8 - 15 kg	15 - 35 kg	>35 kg
120 mg	½ tab X3 as long as needed	1 tab X3 as long as needed	2 tab X3 as long as needed		
500 mg			½ tab X3 as long as needed	1 tab X3 as long as needed	2 tab X3 as long as needed

Treatment

10. Urinary tract infections (U.T.I.'s)

Patients with UTI will often present with the following complaints:

- Pain while passing urine (dysuria)
- High frequency of urination and small amounts (polyuria)
- Cloudy or smelly urine sometimes with blood
- Normally no fever
- Note: "Hot" urine is not a symptom or disease.

Before any treatment the urine has to be visibly checked for cloudiness, smell and blood!

Treatment:

- Advise the patient to drink a lot of water (min. 3 litres per day)
- Give Cotrimoxazole 5 days. Adults (non-pregnant) can be given a single dose. In pregnant women give Amoxicillin 250 mg: 3 times daily 2 tablets for 5 days.
- If after 1 week the patient still has bloody urine, think of Schistosomiasis and treat with a single dose of Praziquantel (see below).
- UTI's normally only occur in only in females, esp in pregnant women. UTI in boys or adult men is very rare. Examine men with symptoms above for STI's.

If a boy has recurrent UTI's refer.

Cotrimoxazole:

Age	< 1 yr	1 – 5 yrs	5 – 15 yrs	> 15 yrs (not pregnant)
Wt	3 – 8 kg	8 -15 kg	15 – 35 kg	> 35 kg
100/20 mg	1 tab x2 x5	2 tabs x 2 x 5		
400/80 mg			1 ½ tabs x 2 x 5	6 tabs as a single dose

11. Schistosomiasis (Bilharzia)

Suspect schistosomiasis in a person with visible blood in urine or stool (as seen by HW). It is the second most prevalent tropical disease in Africa (following malaria). People get infected during contact with water when small micro-organisms ("cercariae") penetrate the skin. Sometimes there might be diarrhoea or abdominal cramps in case of intestinal schistosomiasis, in which case the liver or spleen can be swollen.

Treatment:

- The patient must drink a lot of water (min. 3 litres per day)
- Treat with Praziquantel as a single dose.

Praziquantel:

Age:	< 5 yrs	5 – 10 yrs	10-15 yrs	> 15 years
Wt	< 15 kg	15 – 25 kg	25- 35 kg	>35 kg
600 mg	Do not give	1½ tab x 1 x 1	2 tabs x 1 x 1	3 -4 tabs x1x1

Prevention:

Schistosomiasis is transmitted by infected people who urinate in the water sources. It is then contracted by other people standing in the water, bathing and swimming in rivers, swamps or pools which have been infected.

12. Sexual transmitted Infections- STI's

STI's can show as :

- Urethral discharge in men, with or without pain when urinating
- Abnormal vaginal discharge, with or without abdominal pain
- Genital ulcer on penis or scrotum in men and on labia / vagina in women, with or without swollen lymph nodes in groins.

Notes:

- Patients suffering from STI's are at a higher risk of HIV infection, because they practice non-protected sexual intercourse and STI's facilitate the transmission of HIV. They are also at a higher risk of developing infertility.
- Genital ulcers are treated at the PHC Centre. Genital ulcers disappear after a few weeks, even without treatment, but the patient will still be infected, and can infect other partners and unborn children.
- Examine all patients with STIs for vaginal or penile discharge. Milk the penis if necessary.
- STI patients are treated according to clinical signs.
- Give the single dose treatment under direct supervision in the clinic.
- If after treatment or within a short period of time the patient continues to present with the same symptoms, refer to a PHCC.

Always explain to all STI patients:

1. How STI's are transmitted and the risks (infertility, HIV),
2. Give advice on the use of condoms.
3. Treat all sexual partners at the same time
4. Advise patients to return if symptoms persist after 1 week
5. Educate on behavior change
6. If counseling and testing for HIV is available nearby, offer it.

12.1 Urethral discharge in men

Diagnosis

- Creamy or yellow penile discharge
- And/or acute painful scrotal swelling usually with fever and pain on urinating

Treatment

- Azythromycin 8 tablets in a single dose
- If the STI does not respond to above treatment within 1 week, give a single dose of Metronidazole 10 tablets.

Treatment

Note: acute painful and chronic scrotal swelling can be caused by surgical problems (hernia, hydrocele, and trauma). Refer to the PHC Centre if there are no signs of STI and you suspect another cause.

Note: Most women with a STI do not have discharge. Therefore always treat partners of a man with urethral discharge, whether they have symptoms or not.

12.2. Abnormal vaginal discharge

Most women have some vaginal discharge; normal discharge is small in quantity and white or transparent, it changes during her cycle. However any woman with a change in vaginal discharge, either an increase, change in colour, smell or blood spotting should be examined.

Causes

Abnormal vaginal discharge can be caused by a variety of organisms. It can also be caused by hormonal changes, obstetric conditions or cancer of the cervix. Therefore always take a full history, including pregnancy, last menstruation period, contact bleeding, etc.

Examination

- Abdominal examination (pregnancy, masses, tenderness)
- Vaginal examination: tenderness, uterus and adnexae, irregularities of the cervix, discharge or blood on the glove.

Clinical features

- Abnormal discharge in women is not always caused by a sexual transmitted disease. If it is caused by an STI it often causes tenderness in the lower abdomen (Pelvic Inflammatory Disease).
- Trichomoniasis produces a greenish yellow discharge, with small bubbles, a fishy smell and itching of the vulva. This is not an STI and is treated with Metronidazole
- Candidiasis produces a very itchy, thick white discharge like yoghurt. This is not an STI and is treated with a Clotrimazole pessary.
- Cancer of the cervix causes a blood stained smelly discharge.
- Abnormal vaginal discharge combined with abdominal pain is a sign of an STI.

Treatment

- If there is no lower abdominal tenderness, no itching, only abnormal discharge: Metronidazole