Chapter Six

Conditions that need special attention in people with HIV infection

This chapter provides information on two conditions, tuberculosis and pregnancy, for which home care alone is not enough.

You should advise people with HIV infection, including those who have AIDS, that they should seek help from a health care worker if they think they also have tuberculosis, or if they are considering pregnancy or have already become pregnant.

Again the advice is presented in a way that is designed to help you to advise an adult with AIDS – or the family – using the same headings as in Chapter Five.

Tuberculosis

■ Problems and cause

Tuberculosis is a **chronic** (long-lasting), **contagious** disease that is caused by a bacterial infection. It can be cured with the correct treatment. It most often strikes young adults (15-35 years old), especially those who are weak, poorly nourished, or who live with someone who has the disease.

Tuberculosis usually affects the lungs and causes coughing and spitting. When it is severe people may cough up blood. Especially in children, young people and those with AIDS, tuberculosis can also affect the bones, brain, lymph nodes and other parts of the body. The symptoms of tuberculosis can appear in many different ways, as indicated below.

In many parts of the world, by the time they reach adulthood most people have been infected by the bacterium that causes tuberculosis (*Mycobacterium tuberculosis*). However, if they are healthy their body's defences – the immune system – will have prevented the bacteria from causing tuberculosis. In this case people are usually unaware that the tuberculosis bacteria are in their body, and they feel well.

The relationship between tuberculosis and HIV can be summarized in the following way:

A. *If someone has HIV infection they are more likely to get tuberculosis.*

The damage to the immune system caused by HIV means the immune defences are weakened and that they can no longer keep the tuberculosis bacteria from making a person ill. The tuberculosis bacteria, which have remained quiet in the body for years in some people, now cause the disease called tuberculosis.

B. *If someone has HIV infection the symptoms of tuberculosis can be usual or unusual.*

In communities where tuberculosis is very common, most people can readily recognize the disease. The most common symptoms include:

- chronic cough (lasting more than three weeks), which is often worse just after waking up, and may involve coughing up blood
- loss of weight and increasing weakness
- mild fever
- sweating at night
- pain in the upper back or chest
- loss of appetite.

If someone has AIDS, they may also develop less usual tuberculosis symptoms, such as fever without a cough. Tuberculosis can also infect the lymph nodes, especially in children – most often those in the area of the neck and shoulders. These infected nodes may become large lumps under the skin which open and drain pus, close for a time, and open and drain again.

C. *Tuberculosis should be suspected if someone has AIDS and has respiratory or chest symptoms.*

Because the possibility of having tuberculosis is so high if a person has AIDS, all people with AIDS **and** respiratory, chest or general symptoms which do not go away within three weeks should go to a health care worker to be tested for tuberculosis. This is particularly true if someone lives in an area where tuberculosis is common. As tuberculosis is treatable with medicines, is highly dangerous if not treated, and can be passed on to others, it is important for people to get a prompt diagnosis through a sputum examination and/or a chest x-ray.

D. *HIV infection and AIDS should be considered in every person with tuberculosis.*

Because tuberculosis and AIDS have been shown to accompany each other very often, in many areas of the world it is possible that if someone has tuberculosis they are also infected with HIV. People with tuberculosis should consider asking their health care worker to test them for HIV if this has not already been suggested.

What to do at home

Tuberculosis prevention

As a first step people should be advised to follow the principles for preventing tuberculosis which are presented in the following box.

Some Principles for Preventing Tuberculosis

- Everyone – without exception – should seek early assessment and health care if coughing for three weeks or more.
- Everyone – without exception – should cover their mouth when coughing.
- Everyone – without exception – should avoid being in an unventilated space with a person who has been coughing for more than three weeks.
- All homes, health facilities, workplaces and other places where people meet should be ventilated – make sure there is a way in and a way out for fresh air.

In addition, all newborn babies and young children should be immunized against tuberculosis with BCG vaccine. This may cause a spot or slight wound at the point of injection which will usually heal in some months without any treatment. The vaccine gives good protection against the serious childhood forms of the disease. However, if a child is ill at birth or has clinical symptoms of AIDS (see Chapter Three), they should not receive BCG vaccine.

Tuberculosis is contagious, particularly when there is prolonged contact with a person with

the disease. Those people – and especially children – who live in the same house with someone who has tuberculosis run a risk of becoming infected. To prevent tuberculosis from spreading to others, the whole family should be asked if they have a cough and should have their sputum tested for tuberculosis at the health centre, if necessary.

Tuberculosis treatment

There are many effective treatments available to cure tuberculosis. Treatment always includes at least two different medicines. If only one is used, the tuberculosis bacteria may become resistant (insensitive) to it. Treatment stopped too early is dangerous to both the individual and the community because this, too, can lead to the development of tuberculosis bacteria that are resistant to drugs. Drug-resistant tuberculosis is much more difficult and expensive to cure. Therefore, it is **vitally important** to ensure that people take **all** the medicines they are given for the treatment of tuberculosis, and that they complete the full course. Such medicines, if taken properly, will prevent this infection from spreading among people who live together.

In some countries, treatment for tuberculosis is nearly always started in a clinic or hospital and few people are treated at home. This is because of the type of medicines used and because of the need to be absolutely certain that individuals take their medicines.

Before leaving the clinic or hospital, people should be instructed on how to take the medicines at home, and should be encouraged to ask for clear instructions. When a person returns home, they should have enough anti-tuberculosis medicines to last for about one month or at least until their next scheduled clinic appointment. After returning home from the clinic or hospital, people should be seen by a health care worker and be given a new supply of medicines every month.

It is very important that the medicines are taken regularly, exactly as prescribed. People taking anti-tuberculosis medication will begin to feel better but must still take their medication until the course is completed, otherwise symptoms will reappear and they will again become infectious to their family. Family members can help patients take their medication by reminding them. This is important to the whole family and not only to the patient with tuberculosis. It can take many months to cure tuberculosis completely. Nobody should ever stop taking their medicines, even if they feel better, **unless** instructed to do so by a health care worker, or **unless** the side-effects described below, such as reddening of the eyes, unusual itching or a widespread rash, appear.

The medicines given for the treatment of tuberculosis are very strong and may have severe side-effects. It is very important to know about these (see the section on medicines for tuberculosis in Chapter Seven for further details). If a person has any reactions to their medicines, such as reddening of the eyes, unusual itching or widespread rash, they should stop taking the medicines and return to the health care worker who prescribed them as soon as possible.

IMPORTANT

Be sure that people with tuberculosis know:

- which medicines they must take to cure tuberculosis
- how to take the medicines
- for how long they need to take them
- what side-effects they should watch for
- that prompt, complete treatment will cure tuberculosis
- that prompt, complete treatment is the best way to prevent further spread

Anti-tuberculosis medicines are also expensive. Most governments have programmes that provide them free or at reduced cost. If people are having trouble with the cost you may be able to get help through the government or nongovernmental assistance agencies.

If the main problems experienced are with breathing, people should avoid the things that can make their symptoms worse, for example, anxiety, strenuous activity, smoke, dust, aerosol sprays and smoking of any type. People should also avoid lying flat, and instead should sit up or lie with their head raised. See the section on "Coughing and difficulty in breathing" in Chapter Five for more specific information.

When sick people and their families must seek help

- If the sick person has AIDS and has a cough or other signs that suggest they might also have tuberculosis.
- If the sick person has a reaction to the anti-tuberculosis medicines, such as a reddening of the eyes, unusual itching or a widespread rash.
- If the white parts of the sick person's eyes become yellow.

Notes on tuberculosis

Pregnancy and birth

For many women, the news that they have AIDS is directly related to their role as a mother. Most women who become infected with HIV and develop AIDS do so early in their lives, during or even before the time that they bear children. This means they must face difficult choices.

Many times it is during, or immediately following, a pregnancy that a woman discovers she is infected with HIV or has AIDS. Remember the story in Chapters Two and Three – it was after the illness of her second child that Yulia first became aware that she and Mukasa might be infected with HIV. This is especially distressing news because pregnancy for a woman with HIV or AIDS brings with it the risk of having an infected child **and** possibly of a worsening of her own illness. These painful facts are even worse in places where the status of women is influenced by their ability to bear children and where it may be socially unacceptable or very difficult to take the necessary steps to avoid pregnancy – abstain from sexual intercourse or contraception – or to consider terminating a pregnancy.

Though there are many aspects of HIV transmission during pregnancy that doctors and scientists do not yet understand, some information is available that can help women to decide whether or not to start a pregnancy, or to prepare women for the possible consequences of pregnancy.

If a woman is infected with HIV and becomes pregnant, her risk of having an HIV-infected child is approximately one in three. Some children who become infected are infected in the womb, some during delivery, and some through breast-feeding.

If a woman has AIDS, she is in addition more likely to have a "complicated" pregnancy, with problems during the pregnancy itself, during delivery of the baby, or after the birth. Such problems may include:

- miscarriage – loss of the baby during pregnancy
- fevers and infections
- premature labour – delivery occurring earlier than it should, often causing the death of the baby
- a smaller baby – the weight at birth of even a full-term baby can be much lower than normal; babies with a low birth weight are more likely to have subsequent problems
- infections after birth – these are much more common in women with AIDS and can be life-threatening; women who are HIV-positive might have unexpected severe infections after delivery (puerperal sepsis) which do not respond to the usual treatments with antibiotics.

What to do at home

Antenatal care

All pregnant women should receive antenatal care during pregnancy. This is even more important if they have AIDS. Women should be advised to follow the routine recommendations for all pregnant women – these are:

- The mother should eat for herself **and** for her growing child. She should eat from the three main groups of foods described in the section on "Nutrition problems" in Chapter Five.
- Good hygiene should be practised including the general practices discussed in the section on "Avoiding other infections" in Chapter Three.
- No medicines should be taken except those prescribed by a health care worker (women should always tell their health care worker that they are pregnant if they see them for another reason). Some medicines can be harmful to both the mother and her developing baby so it is best not to take any risks.
- Pregnant women should continue to be active but should not overexert themselves.
- Pregnant women should ensure that they are properly immunized against tetanus, to protect both themselves and the baby. Depending on previous immunizations against tetanus, a woman may need to be immunized more than once during pregnancy.

Before delivery

You may recommend that the mother plan to deliver in a health centre or hospital. If this is not possible, then people, with the help of a health care worker, should prepare for delivery in the home so that it poses the least risk to the mother, to the baby, and to those who help with the delivery.

Advise people to prepare beforehand the things which they will need for a safe delivery. These are:

- several large pieces of cloth for wiping and wrapping the baby (about 1 metre by 1.5 metres each)
- two clean ties or thick threads for tying the umbilical cord
- one clean new razor blade for cutting the cord
- one container of antiseptic solution such as iodine solution or gentian violet
- cotton wool or clean cloths for applying antiseptic solution to the cord stump
- gloves or plastic bags for the delivery assistant and for handling the afterbirth
- one container of clean (boiled and cooled) water for cleaning the mother, the baby and the assistant's hands and arms
- soap
- pads for the vaginal area for the mother to catch drainage following the birth – these can be made from pieces of old but clean cotton cloth
- warm clean clothing for the baby following birth
- clean clothing for the mother to change into after the delivery.

Make sure that anyone who is helping in a delivery knows that they must cover any open wounds on their skin.

After delivery or miscarriage good hygiene should be carefully followed, especially in the genital area. Washing with soap and water should be done twice daily.

Breast-feeding

Breast milk has many benefits. It contains substances which protect the infant against infections. It is the best possible food for infants. In addition, breast-feeding helps postpone further pregnancies. Also, since breast milk is clean, the infant is not at the same risk of getting infections and diarrhoea as with breast-milk substitutes. Unfortunately, it is true that HIV can be transmitted during breast-feeding.

With the help of a health care worker, women will have to weigh up the possible risks of breast-feeding their child, taking into account such things as:

- whether they have AIDS
- whether many of the children in their area are sick, or die from infections unrelated to AIDS, or from poor nutrition
- whether an alternative to breast milk is available to them which is clean, nutritious and affordable throughout the time it will be required.

The risk of transmission of HIV by breast-feeding may be low compared to some of the other risks to which a baby is exposed if it is not bread-fed. Thus it is recommended that if a woman lives in a place where many children die at a young age from infectious diseases (like respiratory infections or diarrhoea), she should breast-feed her infant, even if she is infected with HIV or has AIDS.

However, if a clean, safe, affordable and nutritious substitute for breast milk is readily available and will be readily available for the entire **period** it will be required, then women should be encouraged to discuss this with a health care worker before making their choice. If they decide to feed their baby using breast-milk substitutes (infant formulas) rather than breast milk, they must use clean water (boiled, then cooled), and clean equipment (teats and bottles). Also, they must be sure that when they prepare the breast-milk substitute they do so in the right concentration. They must follow the directions and must not mix the formula with more water than is recommended in an effort to save money. This can lead to malnutrition in their child. If **all** the things mentioned here cannot be done **all** of the time, then women should breast-feed their child.

A woman, usually with her partner, might wish to seek counselling for the following reasons:

- to decide whether to become pregnant or not
- to discuss methods of contraception and other forms of fertility regulation
- to manage a pregnancy
- to plan for an infant.

In addition, as with all women, she should seek antenatal care regularly throughout the pregnancy.

When women and their families must seek help

During pregnancy, a woman should be advised to seek help immediately if she:

- begins to pass blood
- has fevers
- experiences a sharp pain in her abdomen.

After delivery or miscarriage help should be sought if the woman:

- develops a fever
- has bad-smelling vaginal discharge
- has vaginal discharge with fresh blood.

Notes on pregnancy

Chapter Seven

General guide on the use of medicines

People seeking a **cure** for AIDS may spend a lot of money on medicines from shops, health care workers and traditional healers. Unfortunately much of this money is wasted because such medicines are not effective, may cause other problems, and use up money that would be much better spent on food, clothing, or other essential items for all the family.

This chapter provides the information you need in order to teach people how to use medicines safely and effectively. It also provides a brief description of the medicines commonly used to treat symptoms that occur in people with AIDS.

Please note that not all the medicines listed in this guide are needed in a medicine kit or in the home. Because different medicines are available in different countries, information has sometimes been given on a number of medicines that do the same job. It is wise to:

Keep and use only a small number of medicines

(It is best to use familiar medicines that you understand well.)

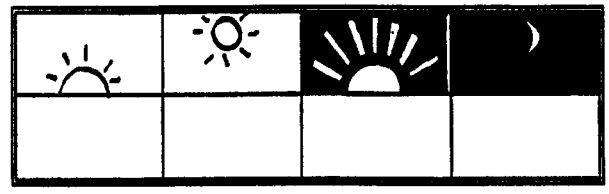
Teaching notes on the use of medicines

It is essential that anyone taking medicines (whether prescribed or bought from a shop) follows the instructions for their safe and effective use. Medicines not taken according to instructions can be useless or even harmful, causing further illness. It can be very confusing for a person and their family when they are provided with several different medicines, all with different instructions. You must make sure that your patients and their families know how to take the medicines you recommend.

There is some danger in the use of any medicine.

Whenever you recommend a medicine, it is a good idea to give the patient and the family written instructions. This can be useful to anyone involved with the care of a sick person. Someone can always be found to read it. You should explain the instructions and ask the patient or members of the family to repeat them to you. Make sure they understand. Below is an example of a written schedule.

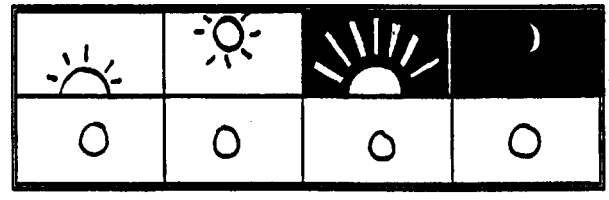
To help remind people who cannot read when to take their medicine, you can give them a note like this:



In the blanks below the pictures, draw the amount of medicine they should take and explain carefully what it means.

Here are three examples:

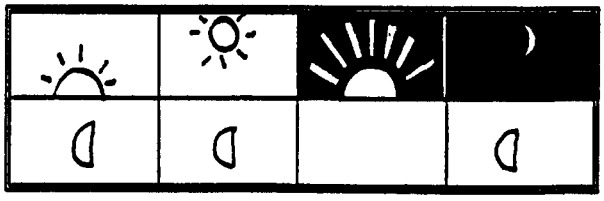
(a) This means one tablet four times a day: one at sunrise, one at noon, one at sunset, and one in the middle of the night.



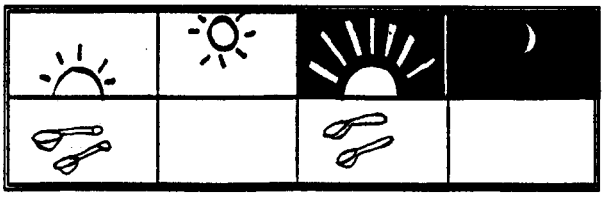
Written medicine schedule

Name of medicine	Purpose	Description	When to give	Comments
Aspirin or paracetamol	for fever, headaches, pain	white tablet	take 1 or 2 at least every 8 hours	take with meals or food
Calamine lotion	for itching and irritated skin	tan liquid	apply to skin as necessary	do not take by mouth

(b) This means half a tablet three times a day.



(c) This means two teaspoonfuls twice a day.



How to use medicines

People may have been advised to take medicines by a health care worker or may have decided to buy their own medicines without such advice. In either case, people must know how to use medicines correctly to get the most benefit from them and to avoid any harmful effects.

How can people learn about medicines?

You, the health care worker, should give people the information they need to know. The people who sell medicines may also be helpful but remember, their primary goal is to make money through selling. Instructions about taking any medicine and the name of the medicine should be written on the container it is sold in.

For any medicine a person has been given, they should know and understand the answers to the following questions:

- Why has it been prescribed?
- How will it help them?
- How should it be taken?
- For how long should it be taken?
- What side-effects, if any, should they watch for?

The ability to use medicines correctly is very important for health and safety. All labels should be checked by the person before they leave the health centre or shop. If the label says:

- **Keep cool** – the medicine should be kept out of sunlight and out of damp places.
- **Shake** – the medicine should be shaken for a full minute before measuring out each dose.

How should medicines be taken?

It is important to take medicines as near as possible to the time recommended. Some medicines should be taken only once a day, but others must be taken more often. If the person does not have a clock, it does not matter. If the directions say "1 tablet every 8 hours", they should take three a day: one in the morning, one in the afternoon, and one at night. If they say "1 tablet every 6 hours", they should take four a day: one in the morning, one at midday, one in the afternoon, and one at night. Before they leave the health centre or the shop with the medicine they must be sure they understand how often to take it. If the directions say:

- **On an empty stomach** – the medicine should be taken at least one hour after a meal, or 30 minutes before a meal.
- **With meals** – this can also mean with snacks. People should make sure that they have eaten something before taking the medicine.

If vomiting occurs immediately after taking a medicine, the dose should be taken again. But if the vomiting occurs 20 or more minutes after taking the medicine, the dose should not be repeated.

Advice for people who are giving medicines to children

- Liquid medicines can be squirted slowly into the side of the child's mouth with a dropper or syringe, or poured from a spoon.
- Always praise a child after he or she has taken medicine.
- If the medicine tastes bad, tell the child so in advance.
- If a pill cannot be swallowed, crush it and mix it with the smallest amount possible of something the child likes to eat. However, do not "hide" medicine in food or the child may begin to refuse food.
- If the child vomits immediately after taking a medicine, give the dose again. But if vomiting occurs 20 or more minutes after taking the medicine, do not repeat the dose.

Medicines to be used with caution in people with AIDS

There are certain medicines that can have more side-effects, or can cause more problems, in people with AIDS. People should be aware of which these are so that they can watch for any reactions they might have to them. They include medicines commonly given to treat infections, and medicines that are used only rarely:

- the anti-tuberculosis medicine, thiacetazone, often called "thiazina"
- sulfonamides
- steroids.

Steroids (such as cortisone and hydrocortisone) deserve special mention. These medicines suppress the immune system and so they are particularly dangerous for people with AIDS because their immune system is already weakened by the disease. Steroids worsen the problems that come with AIDS by reducing even further the body's ability to fight off common infections. **People with AIDS should only take steroids after very serious consideration by a medical doctor. They should only take them as part of the treatment for another problem.**

Which medicines should people use?

The next section describes the medicines that might be used at home for treating the symptoms that can develop in people with AIDS. They are grouped here according to the symptoms they are used to treat. For example, medicines used to treat pain are listed under the heading, "Medicines for pain". The symptoms themselves and how they can be treated at home are described in Chapters Five and Six.

Medicines commonly used to treat symptoms in people with AIDS

Medicines in this section are listed under each heading according to their **generic names** (scientific names) rather than their **brand names** (the names given by the manufacturers). Medicines are described under the following symptoms:

- **Medicines for infections:**
  - *antibiotics*
- **Medicines for fever:**
  - *aspirin*
  - *paracetamol*
- **Medicines for diarrhoea:**

  Acute
  - *oral rehydration salts*
  - *antibiotics*

  Persistent
  - *adsorbents*
  - *antimotility medicines*
- **Medicines for skin problems:**

  General
  - *calamine lotion*

  Bacterial infections
  - *gentian violet*
  - *potassium permanganate*
  - *hydrogen peroxide*

  Yeast infections (oral and vaginal)
  - *gentian violet*
  - *ketoconazole*
  - *nystatin*
  - *clotrimazole*
  - *potassium permanganate*
- **Medicines for nutrition problems:**
  - *vitamin and mineral supplements*
- **Medicines for nausea and vomiting:**
  - *anti-emetics*
- **Medicines for pain:**
  - *aspirin*
  - *paracetamol*
  - *narcotic painkillers*
- **Medicines for tuberculosis:**
  - *streptomycin*
  - *isoniazid*
  - *ethambutol*
  - *thiacetazone*
  - *rifampicin*
  - *pyrazinamide*

Medicines for infections

Antibiotics – a general guide

Almost every person with AIDS will be given an antibiotic at some point during his or her illness to fight an infection.

When used correctly antibiotics are extremely useful and important medicines. They fight certain infections and diseases caused by bacteria. Well-known antibiotics are **penicillin, tetracycline, cotrimoxazole** and **chloramphenicol**. The **sulfonamides** have a similar effect and are also considered here. It should be noted that medicines containing sulfonamides can cause severe allergic reactions in people with AIDS, such as unusual itching or widespread rashes.

Different antibiotics work in different ways against specific infections. All antibiotics have dangers in their use, but some are far more dangerous than others. Great care must be taken in the choice and use of antibiotics:

- People should never take an antibiotic unless it has been prescribed by a health care worker for a specific reason. Left-over antibiotics should not be used to treat a new infection.
- People must continue to use the antibiotics they have been prescribed for the full length of time they are told. Some illnesses, like tuberculosis, need to be treated for many months or years after the person feels better.
- If the antibiotic causes a skin rash, itching, difficulty in breathing, or any other reaction, people should stop using it and immediately contact a health care worker. If these reactions do occur people should always mention this to the health care worker who prescribes medicine for them. People should be encouraged to remember the name of any medicine they have a bad reaction to so that they can tell a health care worker in the future.
- The antibiotic should only be used at the recommended dose – no more, no less. You should explain to people that the dose depends on the illness and on their age or weight, and that increasing or decreasing the dose can be harmful, or can make the medicine useless.
- Antibiotics can kill bacteria. However, not all bacteria are harmful and antibiotics often kill good bacteria along with the harmful ones. For example, people with AIDS given antibiotics often develop fungal infections of the mouth (thrush – see the section on "Mouth and throat problems" in Chapter Five), skin or vagina (see the section on "Genital problems" in Chapter Five). This is because the antibiotics kill the bacteria that help keep the fungus under control in the body. Similarly, certain antibiotics may lead to diarrhoea – the antibiotics kill some of the bacteria necessary for digestion, upsetting the natural balance of bacteria in the intestines.
- When antibiotics are used incorrectly, they become less effective. When attacked many times by the same antibiotic, bacteria become stronger and are no longer killed by it. They become **resistant** to the antibiotic. For this reason, certain diseases like tuberculosis can become more difficult to treat over time if the antibiotics for them are not used in the right way.

Medicines for fever

These include aspirin and paracetamol. The recommended doses for these medicines are given in the section on medicines for pain in this chapter.

Medicines for diarrhoea

Treatment of acute diarrhoea

Oral rehydration salts (ORS). For diarrhoea with no blood in the stools, no specific medicines are needed. An oral rehydration solution made with ORS is the best means of preventing dehydration resulting from diarrhoea. See the section on "Diarrhoea" in Chapter Five for instructions on how to prepare ORS solution.

Antibiotics are effective against only some of the diarrhoea-causing organisms. When they are effective their benefit should be seen after 2 days and the medicine should be continued as prescribed. If not effective, the person should be advised to seek additional care. Prolonged or frequent use of antibiotics may increase the resistance of some disease-causing organisms to antibiotics. Also, antibiotics are costly, and should only be used when most effective. Therefore, antibiotics should not be used routinely. They may be appropriate for the treatment of dysentery, cholera, and some infections common in people with AIDS, but this should be determined by a health care worker.

Treatment of persistent diarrhoea

Relieving the symptoms of persistent diarrhoea, especially in people with AIDS, can be a difficult task. The diarrhoea does not usually have a known cause and when it begins to interfere with normal activity, eating, or is very emotionally burdensome, a health care worker may prescribe specific medicines. In addition to ORS, the medicines most commonly used are:

- **Adsorbents**, such as **kaolin, pectin** and **activated charcoal**.
- **Antimotility medicines**, such as **tincture of opium, loperamide** and **diphenoxylate**. These can be dangerous when used in children less than 5 years of age, and should not be used in this age group. In adults these medicines may temporarily reduce cramps and pain, but may also delay elimination of the organisms causing the diarrhoea, and therefore prolong the illness. When used by adults, directions should be given carefully to avoid overdosage. Possible side-effects include:
  - dryness of the mouth
  - sleepiness
  - loss of coordination
  - blurred vision
  - a gaseous distended abdomen.

Medicines for skin problems

General

Calamine lotion may be rubbed on the skin to soothe itching or irritation. It should never be taken by mouth.

Bacterial infections

Gentian violet comes as a ready-made solution or as dark blue crystals that should be mixed with clean water to make a solution. To use the

crystals, people need to dissolve one teaspoonful in half a litre of water. This medicine helps fight certain skin infections, and has many uses.

Potassium permanganate comes as dark red crystals. It makes a good antiseptic (bacteria-killing) solution for soaking infected sores. A pinch of the crystals should be added to one litre of clean water or one teaspoonful in a four to five litre bucket of water for soaking infected sores.

Hydrogen peroxide comes as a liquid. It should be kept in a dark bottle, as the light destroys its effect. This medicine helps to clean deeply infected wounds on the skin.

Oral yeast infections (thrush)

Before using home remedies or medicines prescribed by a health care worker, a person should try cleaning the mouth with a soft toothbrush and then rinsing with salt water or lemon juice. Next, people can use **gentian violet** or **potassium permanganate**. See the section on "Mouth and throat problems" in Chapter Five.

The medicines most commonly prescribed by a health care worker for treatment of oral fungal infections are **antifungal agents** such as **nystatin** or **clotrimazole**. A solution or suspension should be held in the mouth for at least one minute and then swallowed. Lozenges should be sucked in the mouth until dissolved. It may be necessary to take these medicines three or four times a day.

In some people, the thrush involves not only the mouth but the entire oesophagus, causing pain on swallowing and a burning sensation in the chest. Treatment for this can be provided by a health care worker and includes **antifungal medicines** such as **ketoconazole** which is taken by mouth every 12 hours for 14 days.

Vaginal yeast infections

Antifungal agents (creams or suppositories) may be prescribed to cure vaginal yeast infections. These should be used once or twice a day for 5-7 days. It may help to line underclothes with cotton cloth of some sort since the medicine will drain from the vagina.

Medicines for nutrition problems

Vitamin and mineral supplements come in many forms, but tablets are usually cheapest and work well. Injections of vitamins are rarely necessary, are a waste of money, cause unnecessary pain, and sometimes cause abscesses. Tonics and elixirs often do not contain the most important vitamins and are usually too expensive for the good they do. Nutritious food is the best source of vitamins and minerals. If additional vitamins and minerals are needed, tablets can be used but people should make sure the tablets contain the important vitamins and minerals they need.

With standard "multivitamin" tablets (tablets that contain several different vitamins), one tablet each day is usually enough. Vitamins should be taken with, or soon after, meals. In addition, pregnant women need extra amounts of iron and folic acid.

Medicines for nausea and vomiting

Round-the-clock treatment with medicines for nausea and vomiting (**anti-emetics**) may become necessary if these symptoms become a big problem. They should only be taken on the advice of a health care worker. Some have serious side-effects, for example:

- nervous system effects with trembling or inability to control the movements of the neck or eyes
- fatigue, sleepiness and possibly depression; people taking anti-emetics should therefore not drive or operate machinery.

Medicines for pain

Aspirin can be useful to reduce pain, to lower fever, and to reduce inflammation. It may also help to calm a cough and reduce itching. Aspirin usually comes in tablets of 300-500 mg and should be given to adults at least every eight hours (or two to three times per day). For someone suffering from severe joint pains a higher dose may be recommended.

Aspirin should **not** be used by people who have indigestion or heartburn because it can make these problems much worse. In some people, aspirin causes stomach upsets. To avoid this, aspirin can be taken with milk, some bicarbonate of soda, a lot of water, or with meals. If ringing in the ears is experienced, this is a sign that the amount of aspirin which is being taking should be lowered. Aspirin must be kept out of reach of children as large amounts can poison them.

Paracetamol is used for many of the same problems as aspirin, such as pain and fever. However, it is safer for children and does not cause stomach problems, such as ulcers, so it can be used instead of aspirin if such problems are experienced. Paracetamol, rather than aspirin, should be given to children.

Paracetamol usually comes in tablets of 500 mg and should be given at least every eight hours (or two to three times per day) as follows:

- adults: 1 or 2 tablets (500-1000 mg)
- children 8-12 years: 1 tablet (500 mg)
- children 3-7 years: half a tablet (250 mg)
- children 6 months-2 years: quarter of a tablet (125 mg)
- babies under 6 months: one eighth of a tablet (62 mg).

Narcotic painkillers, such as **codeine** and **morphine**, may be prescribed by a health care worker and are used only for severe pain. These medicines are **addictive**, which means that if someone continues to take them they may need increasingly higher doses to get the same therapeutic effect, and may find that they crave for them at times when they are not having pain. Other side-effects that may be troublesome include nausea, drowsiness, constipation, depression, fatigue and itching. Make sure that people are advised to take extra fluids to prevent constipation if they are taking such medicines. If people are taking this type of medicine make sure they follow the directions carefully and do not drive or operate machinery.

■ Medicines for tuberculosis

Almost all countries in the world have guidelines or standard treatment protocols which they use in the treatment of tuberculosis, you should follow your country's standard treatments. This section describes the most common medicines used in the treatment of tuberculosis. At least two medicines to treat tuberculosis should always be given at the same time. This section is meant to supplement the information given in Chapter Six on tuberculosis and you should refer back to that section. The most important points about the treatment of tuberculosis are shown in the box below.

Streptomycin is given by injection. It is an important medicine for treating tuberculosis; however, it should **always** be used in combination with other medicines. In some places it is being used less often because there are other medicines that can be used in its place and because there is a risk of HIV and hepatitis transmission if the needles or syringes used to inject the medicine are not sterilized adequately.

The dose depends on age, weight and the severity of the tuberculosis. Treatment regimes can vary from country to country depending on the national policies adopted — for example, in some places one injection is given each day for two months, in others injections may be given two or three times a week for two months.

Great care must be taken not to give more than the correct dose. Too much streptomycin for too long may cause ringing in the ears or dizziness, particularly in people aged 50 years or more. If either of these symptoms occur, people should return immediately to the health care worker who prescribed the medicine.

Streptomycin is not suitable for use in pregnant women because it can cause hearing and kidney problems in the unborn baby. It is also unsuitable for children since they develop the side-effects more often and do not tolerate the painful injections well.

Isoniazid comes in tablet form and should be taken before the morning meal. Tablets should be stored out of direct sunlight.

Isoniazid occasionally causes liver problems. If this happens people will notice itching and the white part of their eyes turn yellow. They should return immediately to the health care worker who prescribed this medicine. In rare cases, the medicine causes anaemia, nerve pains in the hands and feet, muscle twitching or even fits. These side-effects can usually be prevented by taking a tablet of **vitamin B6** (pyridoxine) every day.

Isoniazid is usually given for a long period of time, for example six months to one year, until the tuberculosis is considered completely cured.

This medicine is safe to use during pregnancy.

Ethambutol comes in tablet form.

It may cause eye problems if taken in large doses for a long time. If people notice that their eyesight seems worse, with blurring of vision or colour blindness, they should return to the health care worker who prescribed this medicine.

It is usually given once a day for two to twelve months.

Ethambutol is not advised for use in children less than six years old.

Thiacetazone often comes in tablet form and is always given in a combined form, usually mixed with isoniazid in a tablet called "thiazina".

Side-effects occur fairly frequently and include reddening of the eyes, unusual itching, widespread rashes, vomiting, dizziness and loss of appetite. In people with AIDS these reactions can be very severe. If people who are taking this medicine begin to have these types of problems they should stop taking the medicine and return immediately to the health care worker who prescribed it. In many countries this medicine is no longer used for people with AIDS because the side-effects occur so frequently in such people.

Thiacetazone is usually given once a day, for between 6 months and one year.

Rifampicin comes as single tablets of 150-300 mg or in a combined form, mixed with isoniazid, as tablets that contain 150-300 mg of *rifampicin* and 100-150 mg of isoniazid.

Rifampicin should be taken on an empty stomach, at least 30 minutes before the morning meal, since food interferes with the absorption of the medicine. It should be stored out of direct sunlight and in a dry place.

Rifampicin can be used in pregnancy.

Side-effects are not very common. This medicine may cause liver problems which can cause the white part of the eye to turn yellow. If this happens the person should return immediately to the health care worker who prescribed the medicine.

Rifampicin is likely to stain urine, tears, saliva, faeces and other body fluids an orange colour. If people notice this discoloration, they should **not** stop taking the medicine, as it is a normal reaction and is completely harmless.

Occasionally the medicine may cause flushing, itching, rash, fever or flu-like symptoms. If people experience any of these problems, they should discuss them with their health care worker.

Pyrazinamide comes in tablet form and should be taken in the morning with or without food.

Pyrazinamide is safe to take during pregnancy.

The most common side-effect of this medicine is joint pains. These pains tend to occur in the shoulders and are relieved by mild pain medicines. The pain usually goes away within a short period of time. This medicine may also cause liver problems which makes the white part of the eye turn yellow. If this happens the patient should return to the health centre or hospital immediately.

- **Tuberculosis is curable if medicines are taken as prescribed.**
- **If medicines are stopped early, individuals get sick again and become infectious to others.**
- **If medicines are taken as prescribed, individuals become completely non-infectious to others.**

■ Notes on the use of medicines