

# VILLAGE HEALTH

A Handbook for Village Health Workers in Southeast Asia



## BOOK 3

UNIT 6 - THE BODY AND HOW THE BODY WORKS

UNIT 7 - INTRODUCTION TO SICKNESS

UNIT 8 - HOW TO EXAMINE A SICK PERSON

UNIT 9 - HOW TO USE MEDICINES

### Editors:

J. H. Richardus MD PhD DTM

M. Wannemacher MA

### Illustrations:

G. Sharmars

Produced by the Community Medical and Development Text Translation Project (CMDTTP), in cooperation with the Payap University Research and Development Institute and the Summer Institute of Linguistics, Chiang Mai, Thailand.

1993, Revised 2001

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## **VILLAGE HEALTH**

The "Village Health" English version consists of 6 books:

Book 1: Introduction and Translation Manual

Book 2: Unit 1 - The Village Health Worker

Unit 2 - How to Prevent Many Health Problems

Unit 3 - Nutrition

Unit 4 - How to Take Care of Sick People

Unit 5 - First Aid

Book 3: Unit 6 - The Body and How the Body Works

Unit 7 - Introduction to Sickness

Unit 8 - How to Examine a Sick Person

Unit 9 - How to Use Medicines

Book 4: Unit 10 - Signs Index

Unit 11 - List of Sicknesses

Unit 12 - Dehydration, Diarrhea and Vomiting

Unit 13 - Skin Problems

Unit 14 - Eye Problems

Unit 15 - Teeth, Gums and Mouth

Book 5: Unit 16 - Family Planning

Unit 17 - Women's Health, Pregnancy and Childbirth

Unit 18 - Health and Sickness of Children

Unit 19 - How to Prevent Disabilities

Unit 20 - Health and Sickness of Old People

Unit 21 - Addiction

Book 6: Unit 22 - Family and Village Projects

Published by: Payap Research and Development Institute

LPO, Chiang Mai 101

Chiang Mai 50000

Thailand

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The books "Where There is No Doctor" by Dr. David Werner and "The Village Medical Manual" by Dr. Mary van der Kooi, were a valuable resource in the development of this material. Many chapter outlines have been adapted from these books, and many drawings have been borrowed or adapted from "Where There is No Doctor" which we gratefully acknowledge. The drawings on pages 1 and 2b were borrowed from the "MEDEX Primary Health Care Series" which we gratefully acknowledge.

If you are interested in translating this book, please contact the editors at the address below:

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This book series has currently been translated into Thai, Jinghpaw, Rawang, Burmese, Sgaw Karen, and Lisu.

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We would like to thank the following individuals for their input and contribution to "Village Health":

Dr. Ed McDaniels, MD, McCormick Hospital, Chiang Mai  
Aacharn Prasert Bhandhachart, Director, Payap Research and Development Institute  
Dr. Joseph Chiu, MD, World Concern  
Dr. Linda Morse, DO, Northern Thailand Christian Mission  
Dr. Edward Riggs, MD, United Church Board for World Min.  
Dr. Ursula Loewenthal, MD, Phayao Bible School  
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Mr. Shigio Asai, Development Consultant, McKean Rehabilitation Center  
Mr. Nathan Knoll, Payap Research and Development Institute  
Mr. Martin Culy, Linguist, Summer Institute of Linguistics

Finally we acknowledge the generosity of the **Ambassador of the Royal Netherlands Embassy in Bangkok** for generously funding the production of the initial English version of the manual.

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## UNIT 6

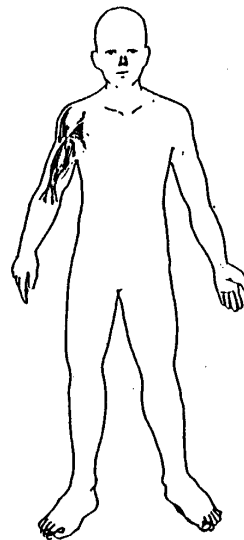
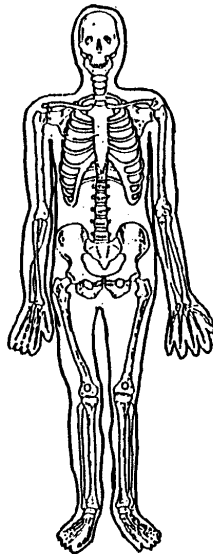
### THE BODY AND HOW THE BODY WORKS

Before you learn more about sickness and medicine, you need to understand the body and how the body works. This chapter will help you know the location of certain organs in the body and what the organs do. If you know about the organs in the body then you can better understand how sickness causes problems. Other parts of this book will describe additional organs that are not in this section along with the sicknesses that affects the organs.

There are several organs inside the body that you need to know about. A body has different kinds of organs that work together to do different things.

#### BONES AND MUSCLES:

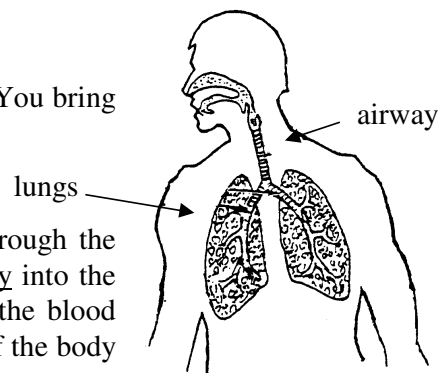
The bones support the body. The muscles attach to the bones and move the body. If you break a leg bone then you will not be able to stand. If you cut an arm muscle then you will not be able to move your hand properly.



#### BREATHING SYSTEM:

All of the parts of the body need air to live. You bring air into the body when you breathe.

When you breathe in, air enters the body through the nose and mouth. The air then goes down the airway into the lungs. The air in the lungs attaches to blood and the blood takes the air to all the parts of the body. The parts of the body use the air to live.

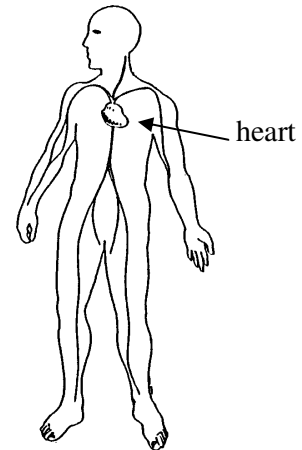


If something blocks the air from going into the mouth, or nose or airway, then the person cannot breathe. This can happen when a person injures his face or when the airway swells. If water fills the lungs then the person cannot breathe. Water can fill the lungs when someone drowns or when the person is sick in the lungs (TB and pneumonia).

### **BLOOD CIRCULATION SYSTEM:**

[When blood is lost, can it be replaced? Are there any special beliefs concerning blood?]

The blood circulation system carries blood to all parts of the body. The blood circulation system is made of the heart and the blood vessels. The heart is a pump that pushes the blood through the blood vessels. The heart is located in the left-center of the chest. You can feel and hear the heart pump blood. You can feel the blood move through the blood vessels in your wrist and neck. The blood carries food and air to the body parts.

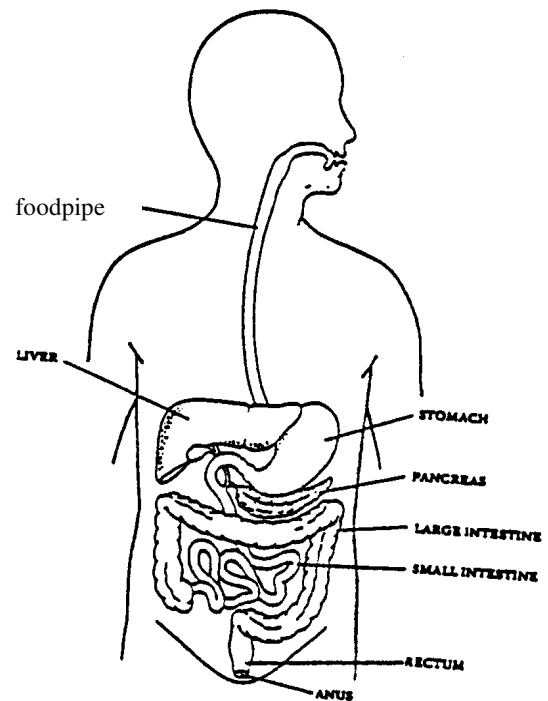


People can have many problems with the blood circulation system. If you cut a blood vessel then blood will come out of the body. It is dangerous to lose a lot of blood. An old person's heart can become weak and cause heart problems. Blood vessels can become weak, break and bleed inside the body (stroke).

### **DIGESTIVE SYSTEM:**

The digestive system is made of the mouth, food pipe, stomach, intestines, liver and anus.

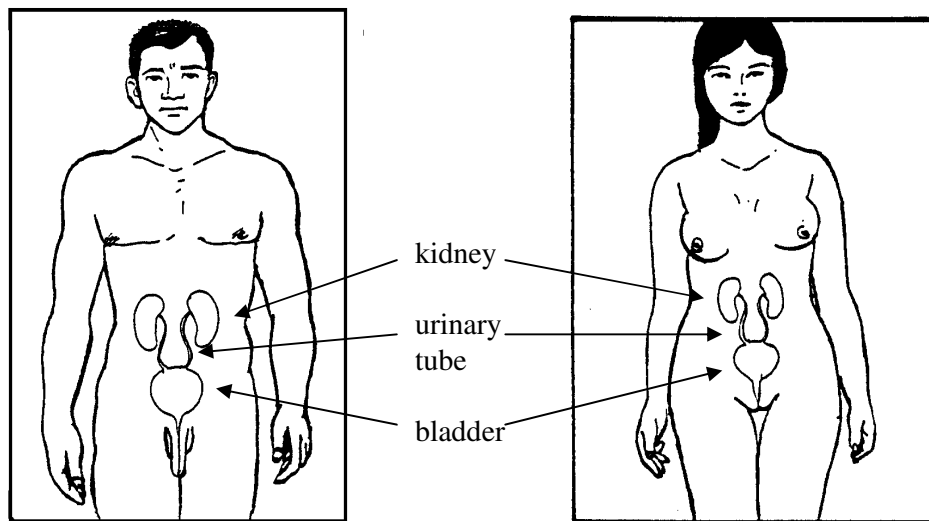
You put food into your mouth. Next you chew the food and swallow the food. The food goes down the food pipe and into the stomach. In the stomach there are chemicals that break the food into very small pieces. The small pieces of food go into the intestines. In the intestines the blood picks up the food and takes the food to the body parts. The body uses the pieces of food to build the body parts and to help the body parts work properly. The blood in the intestines also picks up the water you drink. The food that the blood does not pick up becomes feces and goes out the anus. The liver removes poisons from the blood and prepares food for the body to use.



People can have many problems with the digestive system. If you are sick or eat bad food then the stomach might push the food back out your mouth (vomiting). If you drink a lot of alcohol, the chemicals in the stomach might burn the stomach and cause pain (ulcer). If the intestines are sick then the blood cannot pick up the food and water you drink and the water comes out of the anus (diarrhea). If the liver is sick, the liver cannot take poisons out of the body. The poisons can make a person very sick. The poisons make the eyes and skin orange/yellow.

### **URINARY SYSTEM:**

The urinary system gets rid of extra water and poisons that are left over from the food we eat. The urinary system is made of the kidneys, the tubes that connect the kidneys to the bladder, the bladder and the urinary tube. The 2 kidneys filter the poisons out of the blood and make urine. The urine goes through the tubes that connect the kidneys to the bladder, then into the bladder and stays in the bladder until you urinate. Urine goes from the bladder, through the urinary tube and out the penis in men and out the vagina area in women.



If the kidneys are sick, the body cannot get rid of poisons. The poisons can hurt the body. If there is an infection in the urinary tube, the urinary tube hurts when a person urinates. Many people get little stones in their urinary system because they do not drink enough water. The body tries to push the stones out. The stones cause a lot of pain and sometimes block the urinary system.

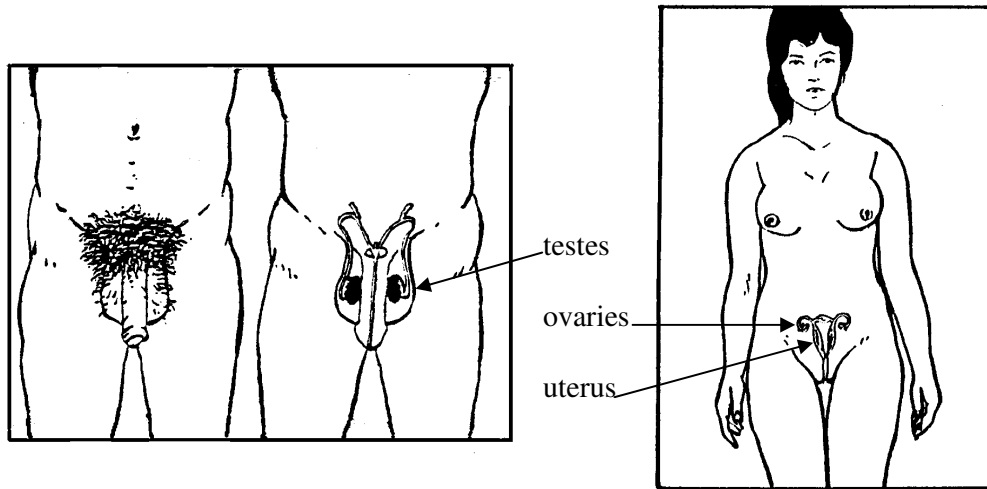
### **REPRODUCTIVE SYSTEM:**

[What is the cultural perception of the reproduction process? What is the source?]

The reproductive system makes the cells from the man and woman which join together and grow into a baby inside the womb. The reproductive system of the man is made of the testes, tubes from the testes to the penis, and the penis. The



reproductive system of the woman is made of the ovaries, tubes from the ovaries to the uterus, the uterus and vagina.



The man's reproductive cells (sperm) are made in the testes. When a man and woman have sexual intercourse, the man's sperm goes out the penis into the woman's vagina. The sperm swim into the uterus and up into the tubes that go to the ovaries. The woman's reproductive cell (egg) is made by the ovaries and moves into the tube. Sometimes the sperm and egg meet in the tube and join to become a new cell. This new cell sticks to the uterus and grows into a baby. Normally, the baby grows in the uterus for 9 months. After 9 months, the baby is born.

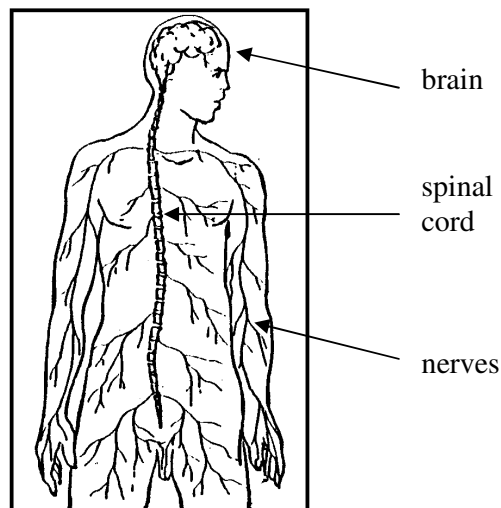
[What is the cultural perception of menstruation? What is the cause?]

Every month the uterus builds tissue for the egg to attach to. If the egg does not attach to the uterus, then the uterus releases the tissue and some blood each month. The blood comes out of the vagina for 3 to 5 days during the menstrual period. A woman has a menstrual period every month until she is pregnant or until she is too old to have a baby.

### **NERVOUS SYSTEM:**

[What is the center of thought? Emotion?]

The nervous system helps our bodies to see, smell, touch, taste and hear. The nervous system also tells the brain how the body feels and what the body needs. The nervous system is made of the brain, spinal cord and nerves.



The brain is inside the skull. The spinal cord is inside the back bone. The brain and spinal cord send messages to the body through the nerves. These messages are similar to messages that go through a telephone wire. The nerves connect the eyes, ears, nose, mouth and skin to the brain. The body parts do what the brain says. The brain can tell the body to do many things such as to move or to burn more food to keep the body warm.

The body also sends messages to the brain through the nerves. Nerves can tell the brain when something is hot or when you hear a sound. For example, when you touch a fire, the nerves in your hand send a message to your brain that your hand hurts. Next the brain tells the muscles in the arm to move the hand out of the fire. This all happens in less than 1 second.

If sickness damages the brain, a person may not think normally, feel normally or move normally. Malaria can damage the brain. If something cuts the spinal cord, then the arms and legs might not be able to move. Sickness can also damage the spinal cord (polio). Leprosy can damage the nerves so that a person cannot feel with his feet or hands.

## UNIT 7

### INTRODUCTION TO SICKNESS

#### THE THINGS THAT CAUSE SICKNESS

[What are the major perceived causes of sickness?]

People from different cultures and people with different education explain the things that cause sickness differently. For example, suppose that a baby gets diarrhea.

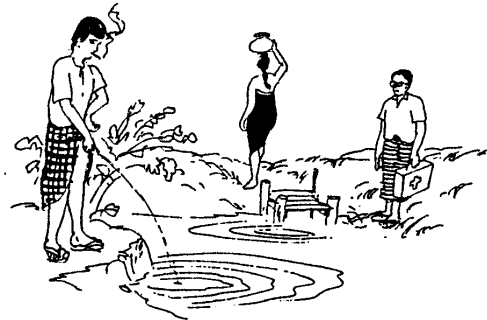
Some people might say that angry spirits caused the diarrhea.



A doctor might say that germs caused the diarrhea.



A public health worker might say that dirty water and no latrines caused the diarrhea.



A teacher might say that no health education caused the diarrhea.

All the people above might be right or partly right.

**MANY DIFFERENT THINGS COMBINE TO CAUSE SICKNESS.**

To prevent and treat sickness successfully, you should understand the common sicknesses in your area and the combination of things that cause the sicknesses.

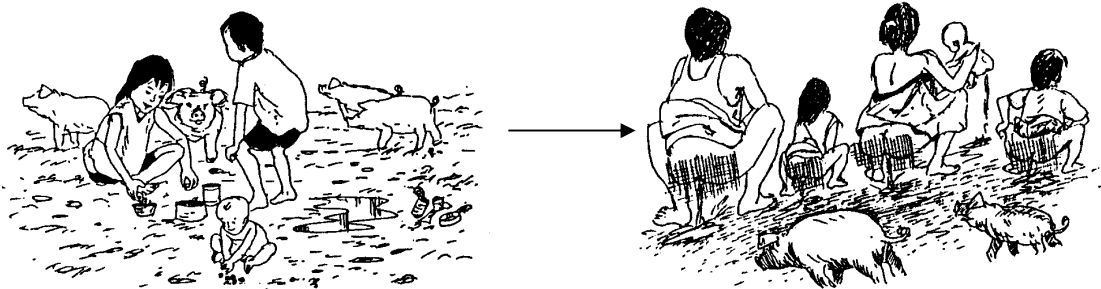
To help sick people and to use the medicines this book recommends, you will need to understand sickness and the things that cause sickness.

**TWO DIFFERENT KINDS OF SICKNESS**

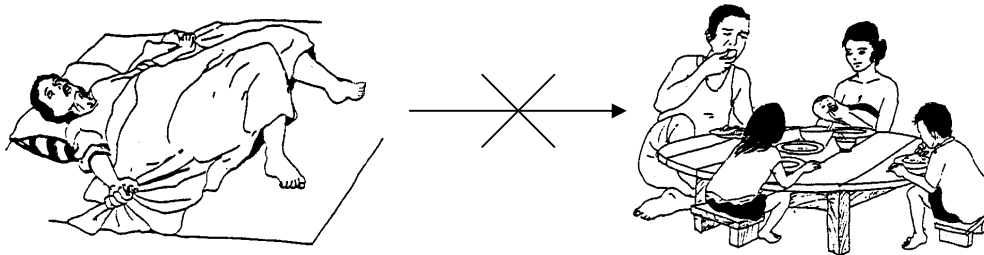
There are 2 different kinds of sickness: infectious sickness and non-infectious sickness. You prevent and treat infectious sickness differently than you prevent and treat non-infectious sickness.

[Is the concept of a disease spreading understood?]

Germs cause infectious sicknesses. Germs can spread from one person to another person. Therefore infectious sicknesses can spread from one person to another person. You should protect healthy people from people with infectious sicknesses.



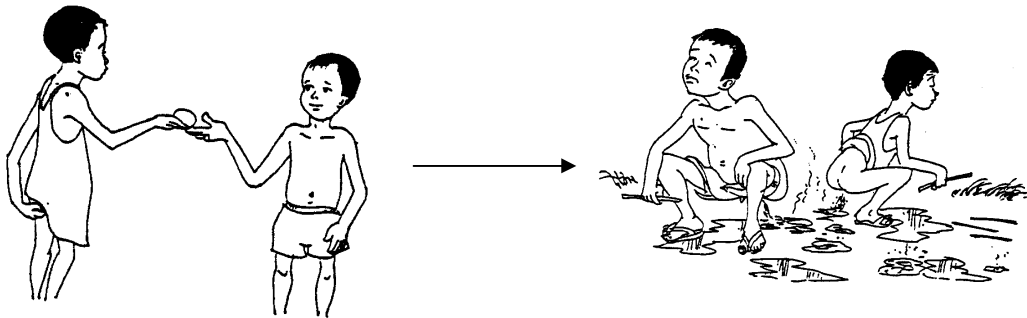
Germs do not cause non-infectious sicknesses. Non-infectious sickness does not spread from one person to another person. Therefore, you do not need to protect healthy people from people with non-infectious sicknesses.



## INFECTIOUS SICKNESSES

[Do people know about and believe in germs? How do they describe germs?]

Germs are tiny bugs that make you sick if they get into your body. Some germs damage the body or release poisons into the body and cause infectious sicknesses. Germs are smaller than a piece of dust. Germs are so small that you cannot see them without a microscope. Many small germs together can hurt the body just like many small bugs can hurt a plant. The germs enter the body through the mouth, nose, eyes, broken skin or on unsterilized needles. Germs can live in people's saliva, feces and blood. A sick person can pass germs to other people when saliva, feces, or blood from the sick person get into the other person.



There are 3 different kinds of germs.

1. Bacteria - medicines can help kill bacteria.
2. Fungus - medicines can help kill fungus.
3. Virus - medicines cannot help kill a virus.

Unit 11 "List of Sicknesses" will tell you what kind of germ causes each infectious sickness.

**MEDICINES CANNOT KILL SOME GERMS. THEREFORE, IT IS VERY IMPORTANT FOR YOU TO PREVENT THE SPREAD OF GERMS AND PREVENT SICKNESS. IF YOU STOP GERMS FROM ENTERING PEOPLE, YOU WILL STOP MANY SICKNESSES.**

There are many ways germs can be transferred from one person to another person:

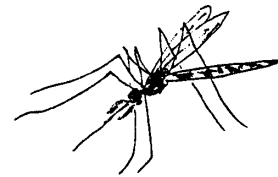
- \* Germs and feces get into the water when people or animals defecate on the ground and the rain washes the feces into the water. A person drinks the dirty water. Many sickness such as cholera and worms are transferred from one person to another by dirty water.



- \* A person touches dirt or feces and it sticks to his hands. Next he puts his hands into his mouth when he eats or touches his mouth and the germs from the dirt and feces go into his mouth. Flies also spread germs. Flies land on feces. The feces sticks to the flies legs. When flies land on food the feces comes off their legs and sticks on the food. A person eats the food that the flies land on and eats the germs also. Germs that get into the mouth cause many sicknesses such as typhoid, hepatitis A and diarrhea.



- \* Animals or mosquitoes bite a person and germs come out of the animal or mosquito's mouth into the person's body. Malaria, and dengue fever are spread by mosquito's bites. Rabies is spread by animal bites.



- \* A sick person coughs, spits or sneezes. Then another person breathes or touches the saliva that comes out of a sick person's mouth. Many sicknesses such as meningitis, leprosy and TB are spread by coughs, spit, or sneezes.

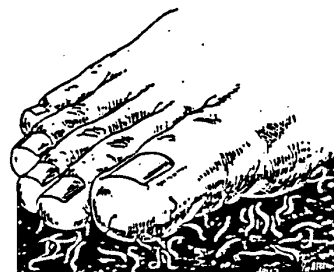


- \* A person passes on germs from his saliva when another person uses the same utensils or cup as a sick person, or when a person eats out of the same bowl as a sick person.

- \* A person has sexual intercourse with a sick person. Syphilis, gonorrhea, herpes and AIDS spread by sexual intercourse.

- \* A person uses a dirty syringe, uses the same syringe as a sick person or gets blood from a sick person. Hepatitis B and AIDS spread by dirty syringes.

- \* A person steps in feces or dirt with bare feet. Worms in the feces or dirt can go into his feet. Hookworm spreads through bare feet.



See Unit 2, How To Prevent Health Problems, to learn how to stop the spread of sickness.

When germs enter the body, the body will try to fight the germs and prevent sickness. Often the body kills the germs and we do not feel sick. People get some sicknesses, such as chickenpox and measles, only one time in their life. After a person gets these sicknesses one time, the body learns to fight these germs so he will not get sick again. Vaccines also help the body to fight certain sicknesses. Vaccines prevent some sicknesses.

[Why do some people get sick more often?]

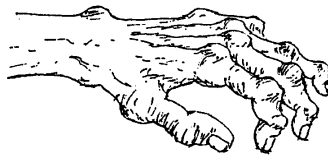
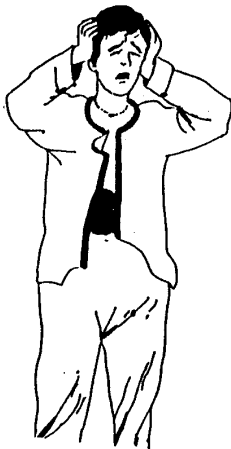
If a person is weak, malnourished, sick or very old, then he will not be able to fight germs and he will get sick easily. Some germs are so bad that they can make any person sick. Some infectious sicknesses only affect children.

## NON-INFECTIOUS SICKNESSES

Germs do not cause non-infectious sicknesses. Many other things cause non-infectious sicknesses.

\* Something wears out or goes wrong inside the body:

- arthritis (joints wear out)
- heart problems (heart wears out or gets too fat)
- epilepsy (there is a problem in the brain)



- stroke (a blood vessel in the brain wears out)
- migraine headaches (there is a problem in the brain)
- cataract (eye wears out)
- cancer (a tumor grows and will not stop)

\* Something from outside the body can hurt the body:

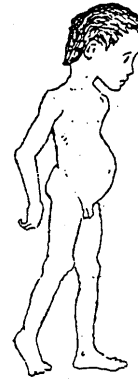
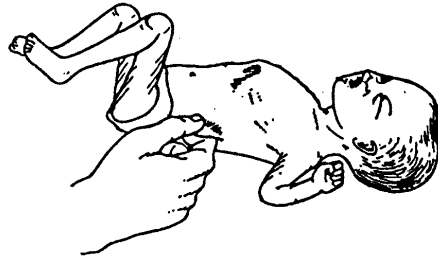
- allergies (dust in the air irritates the nose)
- asthma (something in the air makes the airway swell)
- poisons (damage the body or stop part of the body from working properly)
- snakebite (snake poison goes into the body and causes problems)
- cough from smoking



- stomach ulcer (alcohol, spicy foods or stress makes a sore in the stomach)
- alcoholism

\* Sometimes the body lacks a certain food or water:

- malnutrition (lack of good food)
- anemia (lack of iron)
- goiter (lack of iodine)
- dehydration (lack of water)



[What do people believe causes congenital problems/deformities?]

\* Sometimes people are born with health problems:

- harelip
- epilepsy
- mentally retarded children
- birthmarks
- crossed eyes
- deformities



[What are the perceived causes of mental problems? How are they dealt with?]

\* Some problems begin in the mind:

- fear that something is harmful when it is not
- nervous worry
- severe confusion
- uncontrolled fear

Germs that attack the body never cause non-infectious sicknesses. Non-infectious sicknesses cannot be transferred from one person to another person. It is important to know that antibiotics, or medicines that fight germs do not cure non-infectious sicknesses.

**ANTIBIOTICS ARE NO USE FOR NON-INFECTIOUS SICKNESSES.  
DO NOT USE ANTIBIOTICS FOR NON-INFECTIOUS SICKNESSES.**

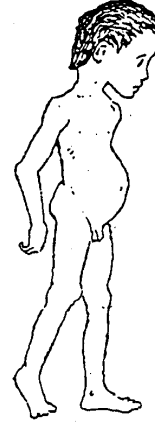


## SICKNESSES THAT LOOK THE SAME

Sometimes sicknesses that have different causes and need different treatment look the same. For example:

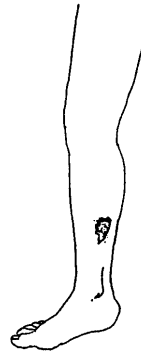
1) A child who slowly becomes thin while his belly gets more and more swollen might have one or several of the following problems:

- \* malnutrition
- \* a severe worm infection
- \* advanced tuberculosis
- \* a long term and severe urinary infection
- \* a problem in the liver or spleen
- \* cancer of the blood



2) An old person with a big sore on the ankle that slowly grows might have:

- \* bad blood flow
- \* diabetes
- \* a bone infection
- \* leprosy
- \* tuberculosis of the skin
- \* advanced syphilis



You must know how to diagnose each of these sicknesses so that you will know how to treat the sicknesses. You treat each of these sicknesses differently. Many sicknesses look very similar. But, if you ask the correct questions and know what to look for, you can often discover what the sickness is. Then you can find out how to treat the sickness.

Units 10-15 describe the normal signs for many sicknesses. But be careful! Sicknesses can act differently in different people. Sicknesses can effect each other and confuse you.

**ONLY DO MEDICAL WORK THAT YOU KNOW HOW TO DO!  
IT IS EASY TO MAKE MISTAKES!  
NEVER PRETEND YOU KNOW SOMETHING THAT YOU DO NOT KNOW!  
IF YOU ARE NOT SURE ABOUT THE SICKNESS OR IF THE SICKNESS IS  
VERY SERIOUS, THEN GET MEDICAL HELP!**

## UNIT 8

### HOW TO EXAMINE A SICK PERSON

[How do traditional healers find the cause of a sickness? Can a man examine a woman? Can a woman examine a man?]

You must ask questions and examine a sick person to find out which sickness he has. You should look for signs that help you know how sick the person is and which sickness he has. Write down the signs and the answers to your questions. Then you can use the signs and answers to help you find out what sickness he has and treat the sickness. Unit 10, "Signs Index", lists the signs and the sicknesses that go with each sign. Unit 11, "List of Sicknesses", lists each sickness and the signs in detail for each sickness. Look in Unit 10 and Unit 11 to help you diagnose sicknesses.

Always examine a sick person where the light is bright. Sunlight is usually bright enough. NEVER examine a sick person in a dark room. You might not see some of the signs of sickness if you cannot see well.



There are basic questions to ask anyone who is sick. There are also basic signs to look for on a sick person. It is important to listen to the sick person talk about how he feels. It is also important to examine the sick person to look for signs of sickness. These signs are especially important for babies and people who cannot tell you how they feel because they cannot talk.

**WHEN YOU EXAMINE A SICK PERSON, WRITE DOWN THE SIGNS AND KEEP THEM FOR THE HEALTH WORKER. YOU CAN USE A "PATIENT REPORT" FORM LIKE THE ONE AT THE END OF THIS UNIT.**

#### THE EXAMINATION

[What are major perceived signs of sickness? How does someone know he is sick?]

When you examine a sick person, you will ask questions, look at the person's condition, feel the skin and temperature, check breathing, check the pulse, check the blood pressure if possible, and check all the different parts of the person's body.

## 1. ASK QUESTIONS

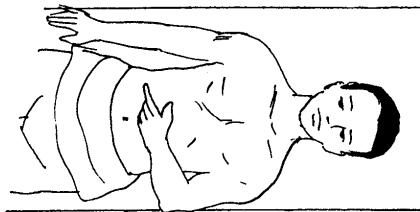
When you start the examination, ask the person about his sickness. Be sure to ask the following questions:

- \* What bothers you or hurts most right now?
- \* What makes you feel better or worse?
- \* How did your sickness begin?
- \* When did your sickness begin?
- \* Have you had this same problem before, or has anyone else in your family or neighborhood had this problem?

Ask other questions to learn the details of the sickness. These questions will depend on the problem.

For example, if the sick person has pain, ask him:

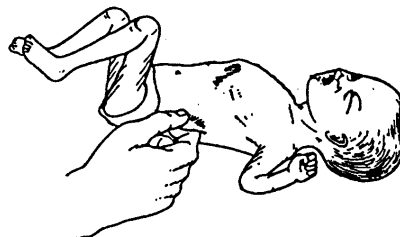
- \* Where does it hurt? Ask the person to point to the exact place where it hurts with one finger.



- \* Does it hurt all the time or just sometimes?
- \* What is the pain like? Sharp? Dull? Burning?
- \* Can you sleep when you have the pain?

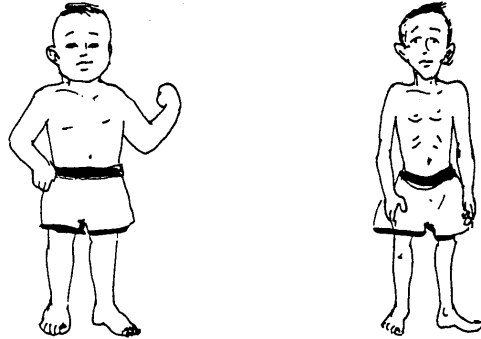
## 2. CHECK THE GENERAL CONDITION OF THE PERSON'S HEALTH

Look at the sick person carefully before you touch him. Observe how sick or weak he looks. Observe the way he moves. Observe how he breathes. See if he behaves strangely. Look for signs of dehydration such as a dry tongue, sunken eyes and loose skin.



Look for signs of shock such as cold and moist skin, pale color, or rapid and weak pulse.

Notice if the person looks well nourished or poorly nourished. A poorly nourished person is very thin, weak and tired. Has the person lost weight? When a person has lost weight slowly for a long period of time, he might have a long term sickness.



Check the color of the skin and eyes:

\* Pale lips and pale color inside the eyelids is a sign of anemia.



\* Light blue skin, lips and fingernails, might mean serious breathing problems or heart problems.

\* Pale skin that is cool and moist often means the person is in shock.

\* Yellow-orange skin and eyes might mean hepatitis or gallbladder sickness.

### 3. TEMPERATURE

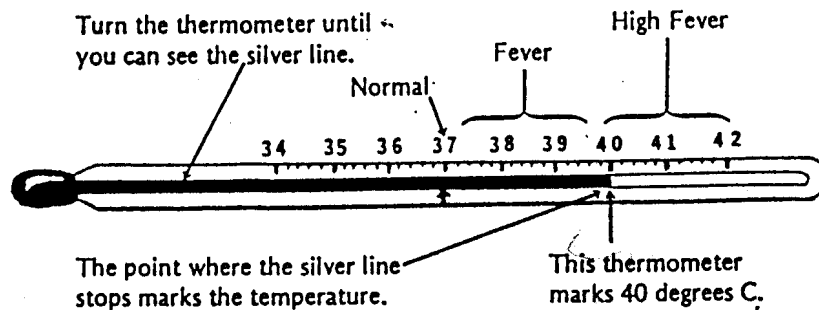
[What is the cause of a rise in temperature? Only use the temperature scale normal in your area.]

The body gets hot when germs in the body cause sickness. You should check the sick person's temperature, even if he does not seem to have a fever. If the person is very sick, check his temperature at least four times each day and write down the time and temperature.

If you don't have a thermometer, you can estimate the temperature. To estimate the temperature, put the back of one hand on the sick person's forehead and the back of your other hand on your own forehead. If the sick person has a fever then his forehead will be hotter than your forehead.



Temperature is measured in centigrade (C) or Fahrenheit (F). Centigrade (C) and Fahrenheit (F) are different. You must know if your thermometer measures in centigrade (C) or Fahrenheit (F).



- \* The normal temperature of a person is 37 C (98.6 F).
- \* A temperature between 37 C and 39 C (98.6 and 102 F) is a low fever.
- \* A temperature above 39 C (102 F) is a high fever.

It is important to know:

- \* when the fever starts (morning, afternoon?)
- \* how long the fever lasts (hours, days?)
- \* when the fever goes away (nights, morning?)
- \* how quickly the fever starts (sudden, slowly?)
- \* how the person feels when the fever starts (headache, chills?)
- \* how the person feels when the fever stops (sweating?)

These signs might help you to identify the sickness.

For example:

- \* Malaria usually begins with chills, then causes a high fever that lasts a few hours, then ends with sweating and comes back every few days.



- \* Typhoid fever causes a fever that rises a little more each day.
- \* Tuberculosis sometimes causes a low fever in the afternoon. At night the person often sweats, and the temperature goes down.

## HOW TO USE A THERMOMETER.

Check the temperature of a sick person 4 times each day and always write down the time and temperature.

How to check the temperature:

1. Clean the thermometer well with soap and water or alcohol.



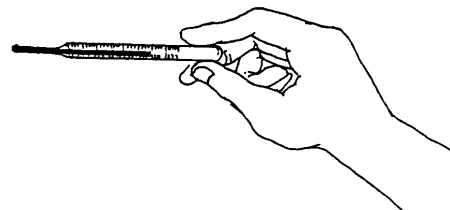
2. Hold the thermometer tightly between your thumb and index finger at the clear end. Shake the thermometer hard with a snap of the wrist until the silver or red line is less than 36 C (97 F).



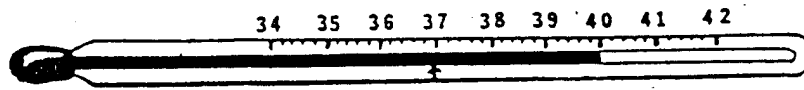
3. Put the silver (red) end of the thermometer under the tongue for adults, under the armpit for small children, or in the anus for babies. You should wet the end of the thermometer or put petroleum jelly on the thermometer before you put it in the anus. Tell the person to hold the thermometer in the mouth with their lips, not their teeth.



4. Hold the thermometer there for three or four minutes.
5. Take the thermometer out.
6. Hold the thermometer at the clear end.
7. Turn the thermometer until you can see the end of the red or silver line.



8. The number above or below the end of the line is the temperature. Write down the temperature and time.



This thermometer reads 40 C (104 F).

9. Wash the thermometer with soap and water.
10. Keep the thermometer away from children because thermometers break easily.

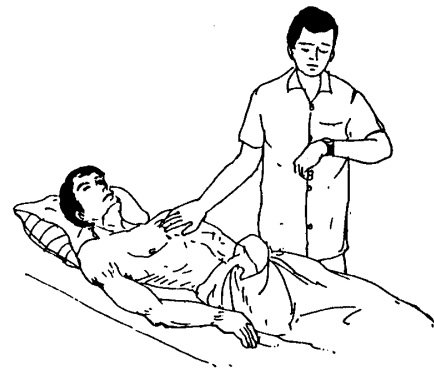
#### 4. BREATHING

Notice the way the sick person breathes. Look for the following:

- \* Deep or shallow breathes.
- \* The number of times a person breathes in one minute.
- \* Difficulty breathing.
- \* Notice if both sides of the chest move equally when the person breathes.

If you have a watch or timer, count the number of times the person breathes each minute. Put your hand on the person's chest or look at the person's chest rise and count the number of times the chest rises or falls.

- \* A healthy adult or older child breathes between 12-20 times each minute.
- \* A healthy child breathes up to 30 times each minute.
- \* A healthy baby breathes up to 40 times each minute.



People with a high fever or serious lung sickness, such as pneumonia, breathe more quickly than normal. If a person breathes more than 40 SHALLOW breaths each minute, he probably has pneumonia.



Listen carefully to the **sound** of the breaths. For example:

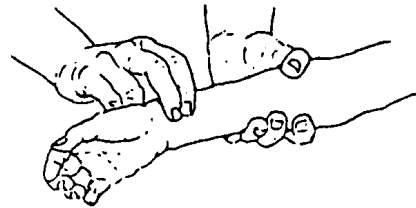
- \* A whistle or wheeze and difficulty breathing out can mean asthma.
- \* A gurgling or snoring noise and difficult breathing for an unconscious person may mean the tongue, mucus, or something else is stuck in the throat and does not let enough air pass into the lungs.

If the person **coughs**, ask him:

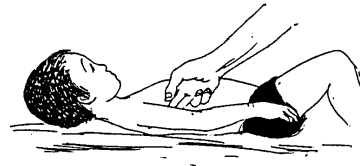
- Does the cough prevent you from sleeping?
- Do you cough up mucus?
- How much mucus do you cough up?
- What color is the mucus that you cough up?
- Is there blood in the mucus that you cough up?

## 5. PULSE (HEARTBEAT)

When the heart beats it pushes blood through the blood vessels and the blood vessels move. This is the pulse. You can check an person's pulse at two places, the wrist and the neck. Press lightly with the middle finger and index finger on the places shown in the picture below to feel the pulse.



To check a baby's pulse, press on the inside of the upper arm.



Notice the strength (strong or weak), the rate (fast or slow, number of beats in one minute), and the regularity (is the beat even or not) of the pulse. If you have a watch or timer, count the number of pulses you feel in one minute.

### NORMAL PULSE FOR PEOPLE WHO ARE RESTING

- adults: from 60 to 80 beats each minute
- children: from 80 to 100 beats each minute
- babies: from 100 to 140 beats each minute

The pulse goes much faster when a person exercises, when a person is nervous, frightened, or has a fever. As a general rule, the pulse increases 20 beats each minute for each degree C rise in fever. (10 beats each minute for each degree F rise in fever.).

	Temperature		
	<u>37 C (98.6 F)</u>	<u>39 C (102 F)</u>	<u>40 C (104 F)</u>
Adult's Normal Pulse Rate	60-80	100-120	120-140
Child's Normal Pulse Rate	80-100	120-140	140-160
Baby's Normal Pulse Rate	100-140	140-180	160-200



When a person is very sick, check the pulse often and write down the strength, rate and regularity. Also write down the temperature and number of times the person breathes in one minute.

It is important to notice **changes** in the pulse rate.

For example:

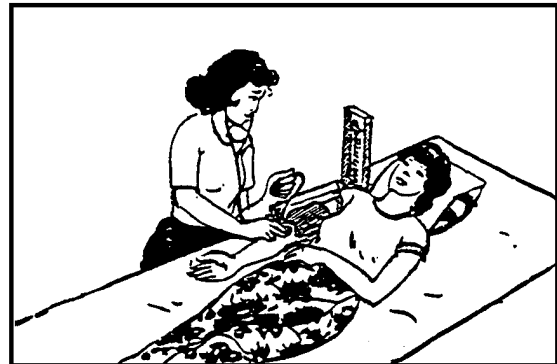
- \* A person with a **weak** and **rapid** pulse might be in shock.
- \* A person with a **very rapid** pulse, a **very slow** pulse, or an **irregular** pulse might have heart problems.
- \* A person with a **normal** pulse that does not go up with temperature and a **high fever** might have typhoid fever.

## 6. BLOOD PRESSURE

The blood pressure tells you how hard the heart is working. You use a blood pressure cuff to measure blood pressure. You also need a stethoscope.

Someone must show you how to measure blood pressure properly. To measure blood pressure:

- \* Wrap the blood pressure cuff around the upper arm.
- \* Put the stethoscope on the underside of the elbow.
- \* Close the valve and pump up the blood pressure cuff until the needle on the dial reads 200.



- \* Slowly unscrew the valve and let the air out. Notice the number that the needle on the dial points to when you hear the pulse.
- \* Notice the number that the needle on the dial points to when you cannot hear the pulse anymore.
- \* Write the number from the dial when you first heard the pulse, then write a slash, then write the number when you stopped hearing the pulse. For example 120/80.

The normal blood pressure is 120/80. If the second number is more than 100, such as 140/110, then the person has high blood pressure.

## 7. EYES

Check the **color** of the white part of the eyes. Is the color normal, red, or yellow? Also notice any changes in the sick person's vision. Ask him if his vision is blurry?

Ask the person to slowly move his eyes up and down and from side to side. Jerking or uneven movement might be a sign of brain damage.

Check the **size** of the pupils. If the pupils are **very large**, the person might be in shock. If the pupils are **very small**, the person might have taken poison or certain drugs.

Look at both eyes and notice if the pupils are different sizes. If the pupils are different sizes, then it is almost always a **medical emergency**.

**ALWAYS COMPARE THE SIZE OF THE PUPILS OF A PERSON WHO IS UNCONSCIOUS OR A PERSON WHO HAS A HEAD INJURY.**

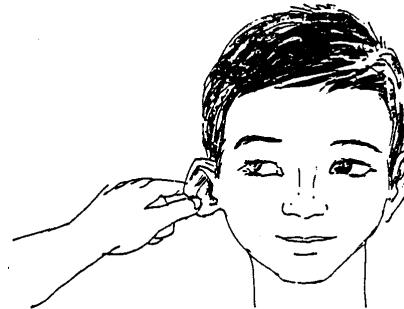


## 8. EARS, THROAT AND NOSE

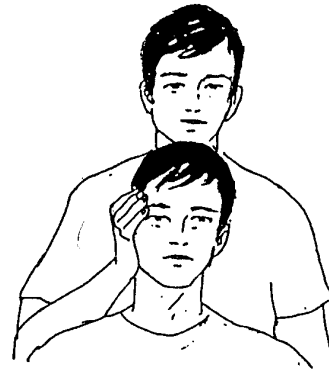
### EARS:

Check for **pain** and signs of infection such as pus or redness in the ear canal. You should especially check a child with a fever or a cold. When a baby cries a lot and pulls his ear, he probably has an ear infection.

Pull the ear gently. If you pull and it hurts the child, then the ear canal is probably infected. Use a flashlight to look for **redness** or **pus** inside the ear. **Never** put a stick, wire, or other hard object inside the ear.

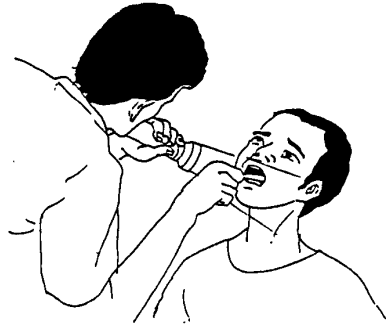


Check if the person can **hear** well, or if one ear hears better than the other ear. Stand behind the person, cover one of his ears and whisper to the person "can you hear me?" then repeat the question with the other ear covered. If he cannot hear you he might have a hearing problem.

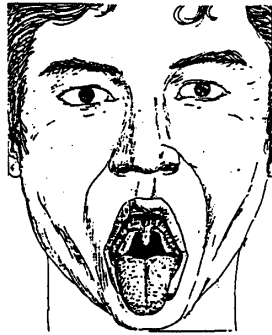


## THROAT AND MOUTH:

Examine the mouth and throat with a flashlight or in bright sunlight. To examine the throat, hold down the tongue with a spoon handle or have the person say 'ahhhhh...!'



Notice if the throat is **red** and if the tonsils are swollen or have spots with pus. Also, look for sores, swollen gums, a sore tongue, rotten or infected teeth and other mouth problems.



## NOSE:

Check if the nose runs or is plugged. Check if a baby can breath through his nose. Shine a light inside the nose and look for mucus, pus, blood, redness, swelling or a bad odor. Everyone has a pink piece of skin that hangs down in each nostril. This is normal.

## 9. SKIN AND LYMPH NODES

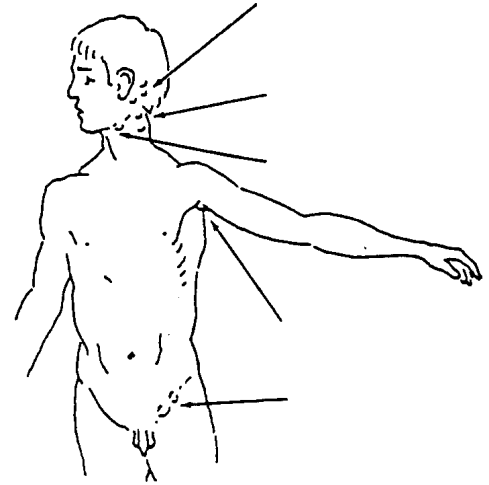
It is important to examine the sick person's whole body, even if you think the sickness is not serious. You should undress babies and children completely. Look carefully for anything that is not normal, such as:

- \* sores, wounds or splinters
- \* abnormal lumps
- \* rashes or welts
- \* loss of hair
- \* spots and patches
- \* abnormal color or shine of the skin
- \* Inflammation (sign of infection with redness, heat, pain and swelling)
- \* loss of eyebrows or hair
- \* swelling

Check for swollen lymph nodes. Lymph nodes are organs that take germs out of the fluid in the body. If a person is sick, there will be many germs in the lymph nodes and the lymph nodes will swell. Check the lymph nodes on the front of the neck next to the airway, back of the head, armpits and groin.

Location of swollen lymph node:  
front of neck  
back of head  
armpits  
groin

Sign of:  
throat infection  
sinus or head infection  
breast or arm infection  
genital infection

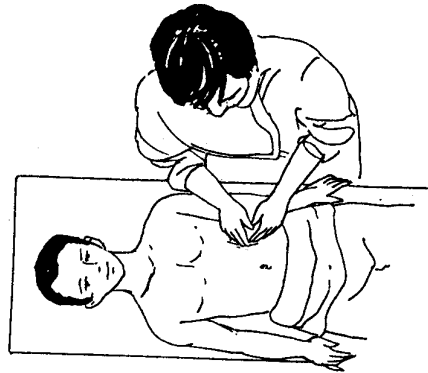


Always examine little children between the buttocks, in the genital area, between the fingers and toes, behind the ears, and in the hair. Look for ringworm, scabies, rashes, and sores. Look in the hair for lice.

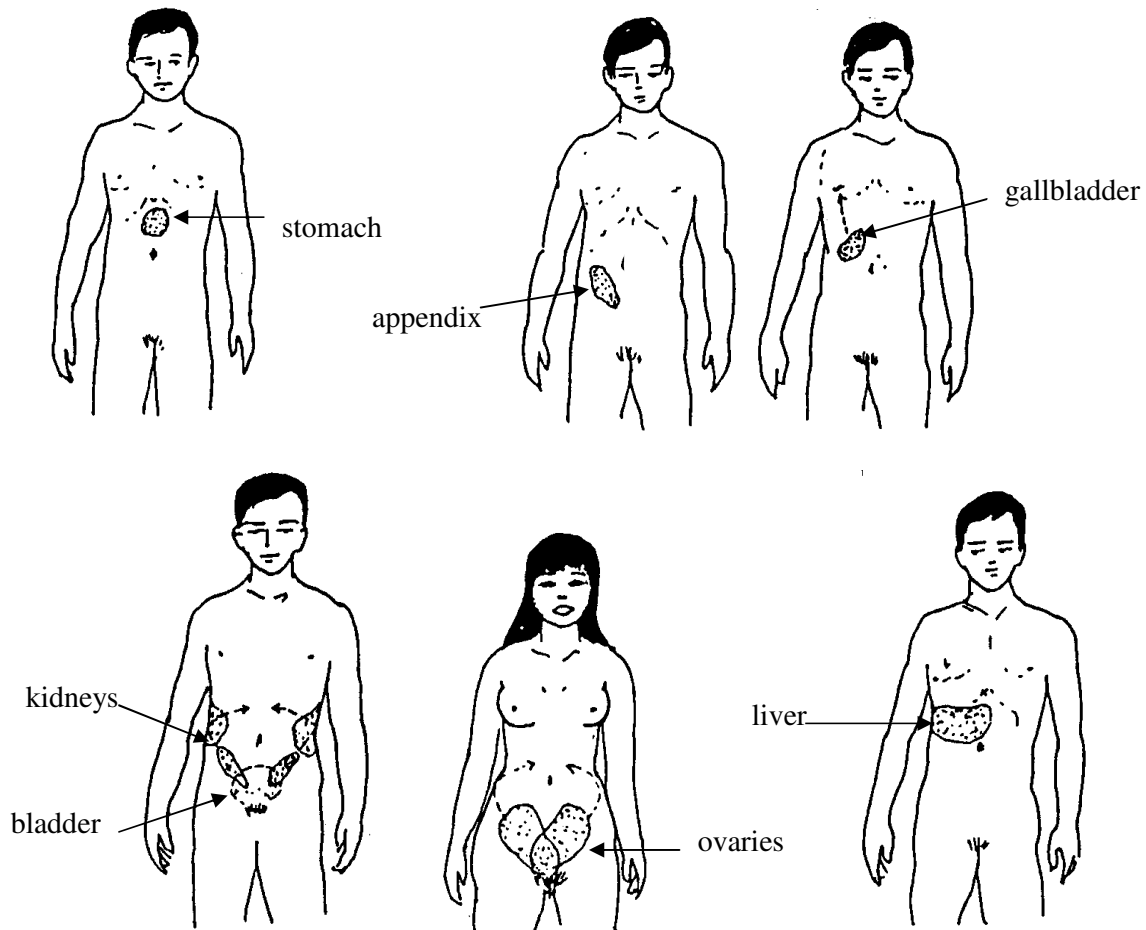
## 10. THE ABDOMEN

If a person has pain in the abdomen, try to find out exactly **where** the pain is. Ask the person to point to the painful area with one finger. Check whether the pain is steady or whether the pain comes and goes, like cramps.

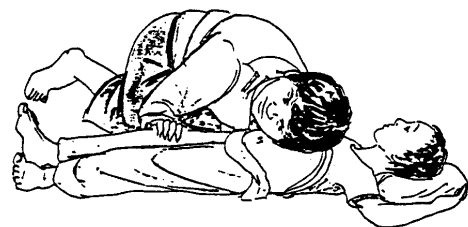
When you examine the abdomen, first look for any unusual swelling or lumps. Feel carefully if the abdomen is **soft** or **hard** and whether the person can relax his abdominal muscles. Feel with a flat hand and do not poke your fingers forcefully into the abdomen. A very hard belly could mean an abdominal emergency.



The location of certain organs in the abdomen are shown below:



Put your ear on the abdomen to listen for sounds. Normally you will hear sounds. Listen to a normal person's abdomen so you know what it sounds like. If the person has a constant pain in the abdomen, with nausea, and has not been able to defecate, then put an ear on his abdomen and listen carefully for several minutes. Many very loud sounds or no sound can be a serious problem.



**A SILENT ABDOMEN IS A SIGN OF AN ABDOMINAL EMERGENCY!**

## 11. MUSCLES AND NERVES

If a person is numb, weak, or cannot control a part of his body, then you should check him as follows. Notice the way he walks and moves. Tell the person to stand, sit, or lie straight, and carefully compare both sides of the person's body.

**FACE:**

Tell the person to smile, frown, open his eyes wide, and squeeze his eyes shut. Notice if the face droops or is weak on one side. If the problem began suddenly, check for a head injury, stroke, or Bell's palsy. If the problem came slowly, it might be a brain tumor.



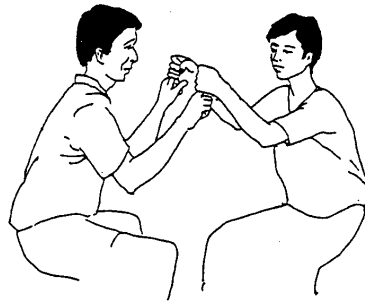
Also check for normal eye movement, the size of the pupils and vision.

**ARMS AND LEGS:**

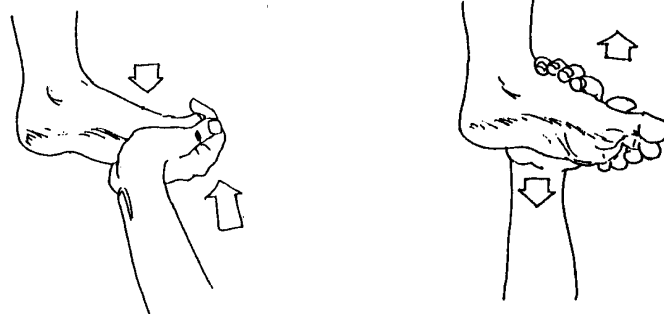
Look for a difference in the size of the muscles. Notice the thickness of arms and legs.

To check the person's strength, do the following:

\* Tell the person to squeeze your fingers to compare strength in his hands.



\* Tell the person to push and pull with his feet against your hand to compare the strength in his legs.



\* Notice if the person is weak or trembles.

If the person's muscles are very small or the whole body is weak, check for malnutrition or a long term sickness such as tuberculosis.

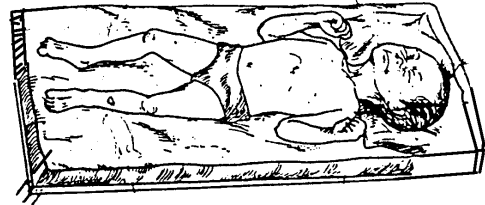
Sometimes only some of the muscles are small and the person is weak only in certain places or on one side. This can be a sign of polio in children. Sometimes a part of the body cannot move or has no feeling. This can be a sign of an injured back, injured head or stroke in adults.

Check if different muscles are stiff. If the jaw is stiff or will not open, then check for tetanus or an infection of the throat or infection of a tooth.

If a sick child's neck or back is stiff and bent backwards, then check for meningitis. If the person cannot bend his head forward or cannot put his head between his knees, then the person probably has meningitis.

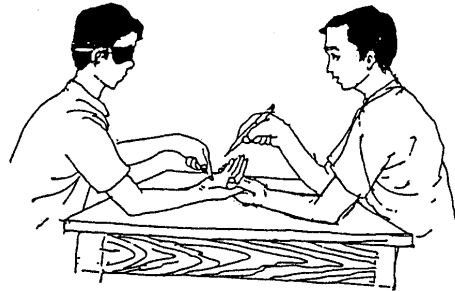


If a person has sudden strange or jerky movements and the person loses consciousness, then he might be having convulsions. If convulsions happen often, check for epilepsy. If convulsions happen when the person is sick, the cause might be a high fever, dehydration or tetanus.



To check for loss of feeling in the hands, feet, or other parts of the body:

1. Tell the person to cover his eyes.
2. Lightly touch the skin with a pen or pencil in different places.
3. Ask the person to point to the place where he feels the touch.



If a person cannot feel **in or near spots or patches** on the body, check for leprosy. If a person cannot feel in **both hands or feet** then check for diabetes or leprosy. If a person cannot feel on one side of the body only, then check for an injured back.

PATIENT REPORT

Name of the sick person \_\_\_\_\_ Age: \_\_\_\_\_  
 Male \_\_\_ Female \_\_\_ Where is he from? \_\_\_\_\_  
 What is the main sickness or problem right now? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

When did the problem begin? \_\_\_\_\_  
 How did the problem begin? \_\_\_\_\_  
 Has the person had the same problem before? \_\_\_\_\_ When? \_\_\_\_\_  
 Is there fever? \_\_\_ How high? \_\_\_\_\_ When and for how long? \_\_\_\_\_

Is there pain? \_\_\_ Where? \_\_\_\_\_  
 What kind? \_\_\_\_\_

What is wrong or different about any of the following?  
 Skin: \_\_\_\_\_ Ears: \_\_\_\_\_  
 Eyes: \_\_\_\_\_ Mouth and throat: \_\_\_\_\_  
 Genitals: \_\_\_\_\_  
**Urine:** too much or too little? \_\_\_\_\_ Urine color? \_\_\_\_\_  
 Trouble when he urinates? \_\_\_\_\_ Describe: \_\_\_\_\_  
 How many times does he urinate in one full day? \_\_\_\_\_  
 How many times does he urinate at night? \_\_\_\_\_  
**Feces:** Color? \_\_\_\_\_ Blood or mucus? \_\_\_\_\_ Diarrhea? \_\_\_\_\_  
 Number of times a day: \_\_\_\_\_ Cramps? \_\_\_\_\_ Dehydration? \_\_\_\_\_  
 Mild or severe? \_\_\_\_\_ Worms? \_\_\_\_\_ What kind? \_\_\_\_\_  
**Breathing:** Number of breaths each minute: \_\_\_\_\_  
 Deep, shallow or normal \_\_\_\_\_ Difficulty breathing? (describe) \_\_\_\_\_  
 Cough?(describe) \_\_\_\_\_ Wheezing? \_\_\_\_\_  
 Mucus? \_\_\_\_\_ Cough with blood? \_\_\_\_\_

**Does the person have any SIGNS OF DANGEROUS ILLNESS?**  
 Which signs?(give details) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Other signs:** \_\_\_\_\_  
 \_\_\_\_\_

Is the person taking medicine? \_\_\_ What? \_\_\_\_\_  
 Has the person ever used medicine that caused hives (or bumps), itching, or other allergic reactions? \_\_\_\_\_ What? \_\_\_\_\_  
 The sickness is: Not very serious: \_\_\_\_\_ Serious: \_\_\_\_\_ Very serious: \_\_\_\_\_

**On the back of this form write any other information you think is important.**



## UNIT 9

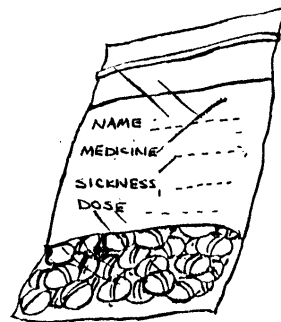
### HOW TO USE MEDICINES

[When are medicines used? What kinds are used first? Who chooses the medicine to use? Who tells a person how to use the medicine?]

Some medicines in pharmacies or village stores are very useful. Other medicines have no good use. Sometimes people use good medicine in the wrong way and do harm. Some health workers give too many medicines. When you use medicine in a wrong way you can cause more sickness and harm. Some medicines are dangerous. Unfortunately, some people use dangerous medicines for mild sickness. It is very important to learn the correct way to use medicines.

#### GUIDELINES FOR USING MEDICINES:

- 1) Use medicines only when necessary.
- 2) Know the correct use and precautions for any medicine you use.
- 3) Be sure to use the right dose of medicine.
- 4) Be sure the name of the medicine and the amount of medicine in each pill or spoonful is on the medicine container. If there is no information on the container, ask to see the container that the medicine came from. Write the name of the medicine and the amount of medicine in each pill or spoonful on your container. Ask to see the precautions for the medicine and write down the precautions. Also look for the expiration date of the medicine to make sure it is not too old. You can use many medicines 1 or 2 years after the expiration date. **But, never use tetracycline that is older than the expiration date.**
- 5) If the medicine does not help, or causes problems, then stop using the medicine.
- 6) When you are not sure what medicine to use, ask a professional health worker.



**ONLY USE A MEDICINE WHEN YOU ARE SURE THE SICK PERSON NEEDS THE MEDICINE AND WHEN YOU ARE SURE HOW TO USE THE MEDICINE.**

## WHEN YOU SHOULD NOT USE MEDICINE

There are situations when it is best **not** to use certain medicines:

- \* **Pregnant women or women who are breastfeeding** should not take any medicines unless absolutely necessary. However, they can take vitamin pills or iron pills without danger.
- \* Be very careful when you give medicine to children under 2 years old. If possible, ask a professional health worker before you give medicine to a child under 2 years old. Be sure not to give too much medicine. Sometimes aspirin can cause problems in children. Children should take paracetamol instead of aspirin.
- \* A person who had an allergic reaction (rash, itching) after he took penicillin, ampicillin, sulfonamide (TMP/SMZ), or other medicines, **should never use that medicine again for the rest of his life** because it can be dangerous. The person should know the name of the medicine he is allergic to and ask the medicine seller or doctor the name of any medicine he receives. Tell the doctor or medicine seller the names of the medicines you are allergic to.
- \* People who have stomach ulcers or lower chest pain should not take medicines that contain aspirin or indomethacine.
- \* There are medicines that are dangerous to take when you have certain sicknesses. For example, you should not give antibiotics or strong medicine to people with **hepatitis** because their liver is damaged. A damaged liver cannot stop the medicine from poisoning the body.
- \* People who are dehydrated or have sickness of the kidneys should be very careful with medicines they take. Do not give more than one dose of a medicine until the person urinates normally. For example, if a child has high fever and is dehydrated, do not give him more than one dose of paracetamol until he urinates. **Never give sulfonamide (TMP/SMZ) to a dehydrated person.**

## HOW TO USE ANTIBIOTICS.

There are two kinds of germs that cause sickness inside the body:

1. bacteria
2. virus

Antibiotics are medicines that kill bacteria. Antibiotics **do not** kill viruses. Only use antibiotics for sicknesses that are caused by bacteria. Antibiotics are very useful and important medicines when you use them correctly.

Different antibiotics work differently against different sicknesses. All antibiotics can be dangerous. Some antibiotics are very dangerous and some are only slightly dangerous. You must be very careful when you choose an antibiotic.

The following are the major groups of antibiotics:

PENICILLINS (ampicillin, amoxicillin, cloxacillin)  
 TETRACYCLINES (doxycycline)  
 SULFONAMIDES (trimethoprim/sulfamethoxazole, TMP/SMZ)  
 STREPTOMYCIN  
 CHLORAMPHENICOL  
 ERYTHROMYCIN  
 KANAMYCIN

Often, brand names are written on the bottle or box. Read the small letters on the label to find out what group the antibiotic belongs to.

**NEVER USE AN ANTIBIOTIC UNLESS YOU KNOW WHAT ANTIBIOTIC GROUP IT BELONGS TO, WHAT SICKNESS IT FIGHTS, AND THE PRECAUTIONS YOU MUST TAKE TO USE IT SAFELY.**

**When you use an antibiotic, follow these guidelines:**

- \* If you do not know how to use the antibiotic and what sickness it is used for, then do not use the antibiotic.
- \* Use only the antibiotic that is recommended for the sickness you want to treat.
- \* Find out the risks for the antibiotic and take all recommended precautions.
- \* Use only the recommended dose. Don't use any more or any less. The dose depends on the sickness and the sick person's age or weight.
- \* Give antibiotics by mouth. Only inject antibiotics if the antibiotics by mouth do not work. Inject antibiotics only when absolutely necessary.
- \* Use the antibiotics until the sickness is completely gone, or at least 2 days after the fever and other signs of sickness are gone. People who have sicknesses such as tuberculosis and leprosy need to take medicine for many months or years after the person feels better. Sometimes a person can feel better but still have germs in his body. If the person stops taking the medicine before all of the germs are dead, then the person will get sick again. Follow the instructions to treat each sickness.
- \* If the antibiotic causes a skin rash, itching, difficult breathing, or a noticeable bad change within 1/2 hour, then the person must stop taking the antibiotic and **never use the same antibiotic again**. Write that the person is allergic to the antibiotic on a piece of paper. The person should show the piece of paper to the health worker each time he goes to see the health worker.
- \* Only use antibiotics when you know it is necessary. When a person takes antibiotics for every sickness, the antibiotics will not work well in that person.

**Guidelines to use certain antibiotics:**

- \* Before you inject penicillin or ampicillin, always have adrenaline ready to use to stop an allergic reaction.
- \* If a person is allergic to penicillin, use another antibiotic such as erythromycin.
- \* Use chloramphenicol only for typhoid fever. **Chloramphenicol is a dangerous medicine.**
- \* **Do not** give tetracycline to pregnant or nursing women or children younger than 8 years old. Tetracycline can change the teeth color of children and unborn babies. You should give amoxicillin to children under 8 years old and nursing mothers instead of tetracycline.
- \* Ampicillin and amoxicillin are very similar. A person can take whichever is available. Ampicillin is usually cheaper but sometimes causes diarrhea. This book suggests amoxicillin because it causes less diarrhea. The patient takes amoxicillin 3 times each day. The patient takes ampicillin 4 times each day. The dose is the same.

**What to do if an antibiotic does not seem to help:**

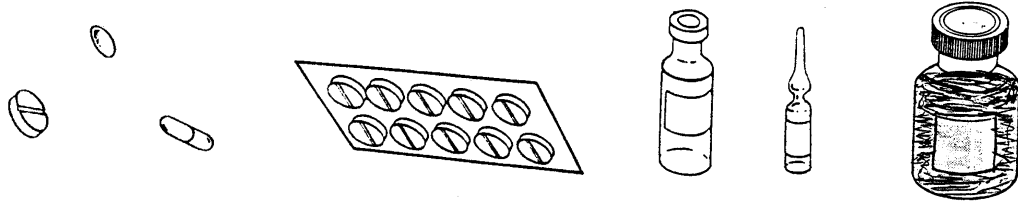
Antibiotics begin to cure most common sicknesses in 1 or 2 days. **If the person does not begin to get better after he takes the antibiotic for 1 or 2 days, it is possible that:**

- \* The sickness is not what you think. You might be using the wrong medicine. Examine the person again and check for other sicknesses. If you think the person has another sickness, then treat him for that sickness.
- \* The dose of the antibiotic is too low. Check the dose. Do not raise the dose if the dose you gave is correct.
- \* The germs are resistant to the antibiotic and the antibiotic cannot kill the germs. Try another antibiotic recommended for that sickness.
- \* You might not know enough to cure the sickness. Get professional medical help, especially if the person is very sick or getting worse.

**REMEMBER: WHEN ANTIBIOTICS ARE USED TOO MUCH, THEY BECOME LESS EFFECTIVE. THEREFORE, DO NOT USE ANTIBIOTICS FOR SICKNESSES CAUSED BY A VIRUS OR FOR SICKNESSES THAT THE BODY CAN USUALLY FIGHT BY ITSELF. ONLY USE ANTIBIOTICS WHEN RECOMMENDED BY THIS BOOK OR A HEALTH WORKER.**

## HOW TO MEASURE AND GIVE MEDICINE.

Medicines come in many different shapes and sizes. You eat some medicines, you drink some medicines and you inject some medicines.



## HOW TO MEASURE MEDICINE

Medicine in a pill or dissolved in a liquid is usually weighed in grams (g) or milligrams (mg).

1000 mg = 1 g (1000 milligrams is the same as 1 gram)

The person who sells the medicine should write the number of grams or milligrams in a certain amount of medicine on the medicine container. For example:

"One tablet contains 250 mg."

"5 ml contains 1 g."

"Each capsule contains 100 mg."

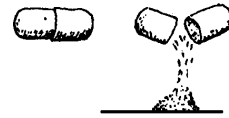
You must know how much medicine is in the pill or liquid you will give before you can divide the medicine and make smaller doses for children. For example, if you want to give a child 1/4 of the adult dose, you need to divide the adult dose by 4.

Suppose the adult dose is 500 mg. 1/4 of the adult dose is 125 mg. If each tablet contains 250 mg of medicine then you need to break a tablet into 2 parts and only give one part (125 mg) to the child:



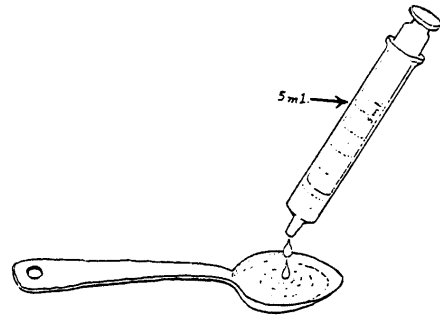
Sometimes you will need to divide the medicine in a capsule to give the correct dose to children.

Open the capsule and pour the powder on a piece of clean paper.

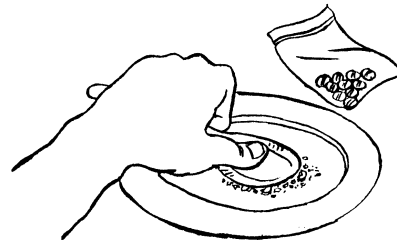


Divide the powder into equal piles of 1/2's, 1/4's or 1/8's depending on how much medicine the child needs.

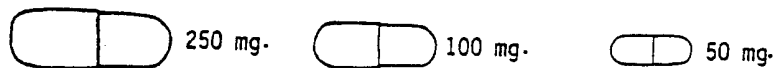
Put the correct amount of powder into a spoon and add clean water. You can also add sugar so that children who do not like medicine will drink the medicine.



You might also need to crush tablets and give the powder in the way shown above so that children can take the medicine easily.



**Be careful!** Many medicines, especially antibiotics, come in different weights and sizes. For example, you can buy tetracycline in 3 sizes:



Be careful to give only the recommended amount of medicine. If you are supposed to give 250 mg of medicine and you only have 50 mg capsules, then give 5 capsules of 50 mg.

$$50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} = 250 \text{ mg.}$$

 A visual equation showing five small capsules followed by a plus sign, then another plus sign, then another plus sign, then another plus sign, then another plus sign, then a large capsule, followed by an equals sign.

## MEASURING PENICILLIN

Penicillin is often measured in units (U.).

1,600,000 U. = 1000 mg.

Many kinds of penicillin come in 400,000 U. doses.

400,000 U. = 250 mg.

## LIQUID MEDICINE

Sometimes liquid medicines are measured in milliliters (ml) and sometimes liquid medicines are measured in teaspoons or tablespoons.

1000 ml = 1 liter (1000 milliliters is the same as 1 liter.)

1 teaspoon = 5 ml

1 tablespoon = 15 ml



3 teaspoons = 1 tablespoon

When the instructions say to take 1 teaspoon, this is the same as 5 ml. Some teaspoons hold more than 5 ml and some teaspoons hold less than 5 ml. It is important to measure 5 ml, not more and not less.

To make sure your teaspoon measures 5 ml:

\* Buy a 5 ml teaspoon.

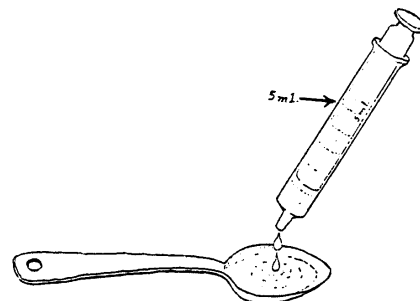
or



\* Buy medicine that comes with a plastic spoon. The spoon should measure 5 ml. A line on the spoon will show when the spoon is half full (2.5 ml). Save the spoon and use it for other medicines.

or

\* Measure 5 ml of water in a syringe or 5 ml spoon. Put the 5 ml of water into a spoon and mark a line or scratch a line at the top of the liquid. Use this spoon to measure medicines.



**MEDICINE DOSE**

This book usually tells the amount of medicine you need to treat sicknesses for adults only. When you treat children, you will need to calculate the correct amount of medicine for them. Generally, smaller children need less medicine. If you give a person more medicine than they need, it can be dangerous.

Give children the following portions of the adult dose:



Adult	(weight approximately 60 kg):	1 dose
Children 8 to 13 years	(weight approximately 30 kg):	1/2 dose
Children 4 to 7 years	(weight approximately 15 kg):	1/4 dose
Children 1 to 3 years	(weight approximately 8 kg):	1/8 dose

Give children under 1 year old the dose for a child 1 year old, but ask medical advice if possible.

**WHEN TO TAKE MEDICINES**

[How are days divided into 2, 3, or 4 parts in the target culture?]

People should take the correct number of pills each day with about equal time between each dose. Whenever you give medicine to someone, you should write down the instructions on how to use the medicine and tell the person how to use the medicine. The person who receives the medicine should repeat the instructions correctly back to the health worker. Be sure the sick person understands how to take the medicine. If the sick person is a child, be sure the mother or person who gives the medicine to the child knows how to give the medicine. Check and make sure the person takes his medicine, especially if he is very sick or if the person must take the medicine for a long time.

You take some medicines 1 time each day.

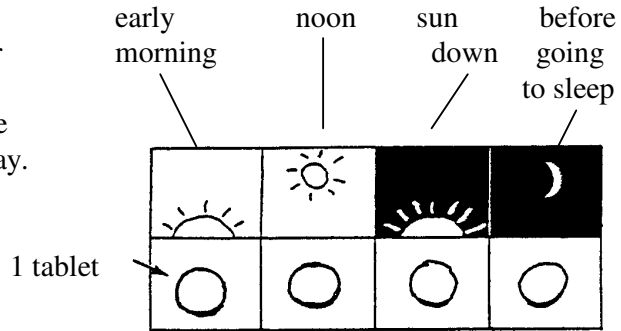
You take some medicines 2 times each day. One time in the early morning and one time in the evening.



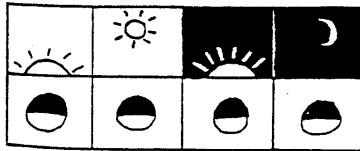
You take some medicines 3 times each day. One time in the early morning, one time in the afternoon, one time before going to sleep.

You take some medicines 4 times each day. One time in the early morning, one time at noon, one time at dusk and one time before you go to sleep.

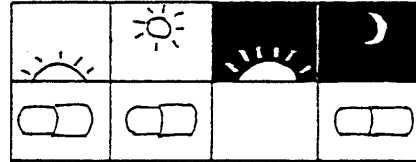
If a person cannot read, give him a card like this to help him remember when to take his medicine. Draw the kind of medicine below the time he should take the medicine each day.



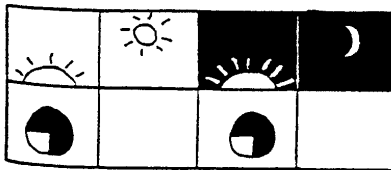
This means take 1/2 tablet 4 times each day



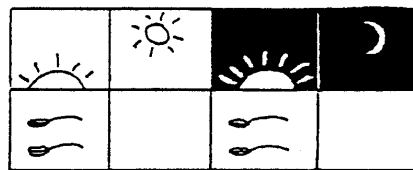
This means take 1 capsule 3 times each day



This means take 1/4 tablet 2 times each day



This means take 2 teaspoons 2 times each day



When you give medicines to anyone, always write:

- \* The person's name
- \* The medicine name
- \* The problem the medicine is for.
- \* The dose and time to take the medicine.

Name: Johnny Brown			
Medicine: Piperazine 500mg. tablets			
For: Thread worm			
Dosage: take 2 tablets twice a day			

Make cards like the one shown to use when you give medicine.

Be sure the person who receives liquid medicine has a spoon to measure liquid medicine. If he does not have a proper spoon, help him make one.

**Some medicines work better when your stomach is empty and some medicines work better when your stomach is full.**

Some medicines work best if you take them when your stomach is empty, about 1 hour before you eat a meal.

Take these medicines 1 hour **before** you eat a meal:

- \* penicillin
- \* amoxicillin or ampicillin
- \* tetracycline

Medicines that make your stomach hurt are better if you take them right after you eat a meal.

Take these medicines **after** you eat a meal:

- \* aspirin and indomethacine
- \* iron (ferrous sulfate)
- \* erythromycin

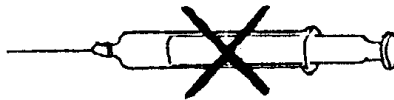
Antacids work best if you take them when the stomach is empty, 1 or 2 hours after meals and at bedtime.

### **INSTRUCTIONS AND PRECAUTIONS FOR INJECTING MEDICINES**

[Do people prefer injections? Who gives injections?]

You do not need to inject medicine often. You can treat most sicknesses very well with medicines that people eat or drink. The important thing is for medicine to get into the body. Medicine that people eat or drink can go into the body very well. A general rule is:

**MEDICINE YOU INJECT IS MORE DANGEROUS THAN MEDICINE A PERSON EATS OR DRINKS.**



**The only times you should inject medicines are:**

- \* When the recommended medicine does not come in a form that people can eat or drink.
- \* When the person vomits often, cannot swallow, or is unconscious.
- \* In certain unusual emergencies and special cases such as convulsions and allergic shock.

**When not to inject medicine:**

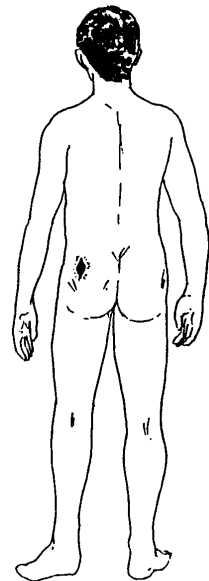
- \* **Never** give injections if you can get professional medical help quickly.
- \* **Never** give an injection for a sickness that is not serious.
- \* **Never** give injections for a cold or a flu.
- \* **Never** inject a medicine that is not recommended for the sickness you want to treat.
- \* **Never** inject a medicine unless you know the recommended precautions and use all recommended precautions.

Unfortunately, many people think that injections are better, stronger and work faster than pills or liquids. People will pressure you to give them an injection of medicine. You need to explain why you will not inject medicine for most sicknesses. People who do not have medical training and people who do not clean syringes properly should not inject medicine. Injecting medicine with dirty needles can cause AIDS, hepatitis and abscesses.

**RISKS AND PRECAUTIONS FOR INJECTING MEDICINES:**

The risks of injecting any medicines are:

- \* If you inject wrong, the person might get an abscess or infection from germs on the skin or needle.
- \* Some medicines that you inject can cause allergic reactions or poisonous reactions.



To prevent infection when you inject medicine, be careful to keep everything very clean. If possible, use a new disposable syringe and needle each time you inject medicine. If you use a glass syringe, it is very important to boil the needle and syringe in water before you use them. It is very important to clean the skin where you will inject the medicine.

**NEVER USE THE SAME NEEDLE AND SYRINGE TO INJECT MORE THAN ONE PERSON UNLESS YOU BOIL THE SYRINGE AND NEEDLE 20 MINUTES. ONLY THEN YOU CAN INJECT THE NEXT PERSON.**

It is very important to know what reactions a medicine can produce. It is very important to take the recommended precautions before you inject medicine. If any of the following signs of allergic reaction occur, never give the same medicine to that person again:

- \* A rash that itches.
- \* Swelling anywhere.
- \* Difficulty breathing.
- \* Signs of shock.
- \* Dizziness and nausea.
- \* Problems seeing.
- \* Ringing in the ears or deafness.
- \* Severe back pain.
- \* Difficulty urinating.



### SEVERE ALLERGIC REACTIONS TO MEDICINE

Some medicines, especially **penicillin**, can cause a severe allergic reaction after you inject it. After you inject medicine, always stay with the person for **30 minutes** to watch for the following signs of severe allergic reaction:

- \* Cool, moist, pale or gray skin.
- \* Weak and rapid pulse or heartbeat.
- \* Difficult breathing.
- \* Loss of consciousness.

If these signs appear, immediately inject **Adrenaline** into the upper arm:  
dose: adult, 1/2 ml, children, 1/4 ml.

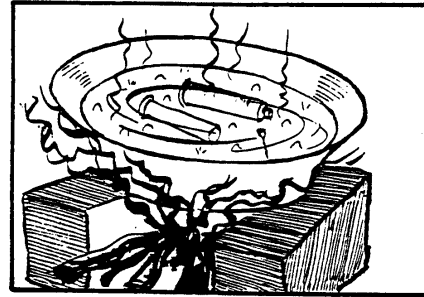
Do not give adrenaline to babies.  
You can inject adrenaline again in 10 minutes if necessary.

After you inject adrenaline, inject a double dose of diphenhydramine:  
dose: adult, 1 ampule 10 mg.

Inject diphenhydramine again after 2 to 4 hours if the allergic reaction continues.

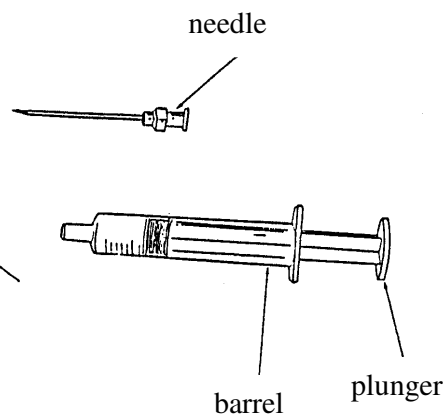
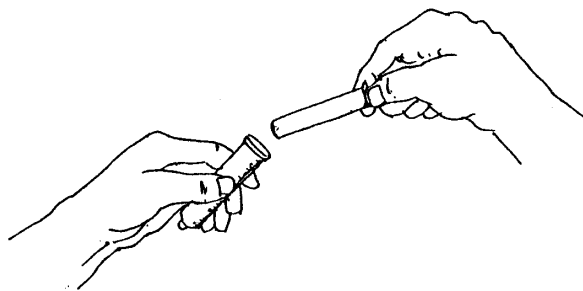
## HOW TO PREPARE A GLASS SYRINGE FOR INJECTION:

1) If you use a glass syringe, take the syringe apart and boil the parts in water for 20 minutes before you use it.

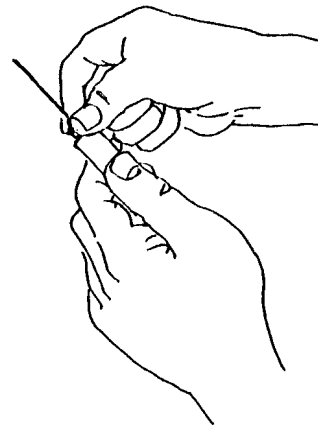


2) Pour out the boiled water and do not touch the syringe or the needle.

3) Put the plunger and syringe body together. Only touch the sides of the barrel and the top of the plunger.



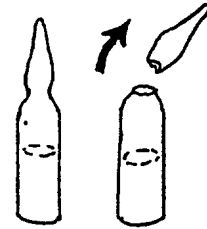
4) Put the needle onto the syringe barrel. Only touch the base of the needle and side of the barrel. Use the syringe immediately. Do not let the needle touch anything before you use the syringe because germs live almost everywhere. If the needle touches something, then germs will get on the needle and cause infection when you inject medicine.



You cannot boil a plastic syringe. After you use a plastic syringe one time, you should stick the needle into a soft piece of wood and bury the syringe and needle so that nobody steps on the needle.

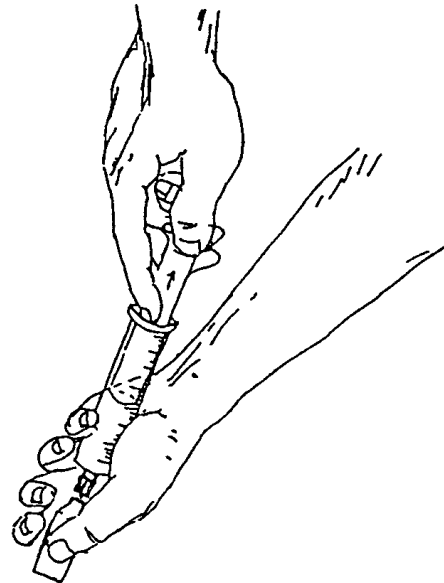
**HOW TO SUCK UP A LIQUID TO INJECT:** (such as adrenaline and distilled water)

1) Clean the ampule of liquid with clean water or alcohol, then break off the top of the ampule.



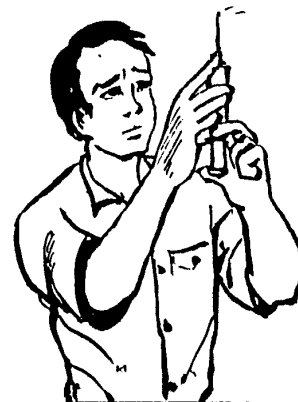
2) Be sure the plunger is pushed all the way into the syringe barrel.

3) Put the needle into the ampule and pull up the plunger until all the liquid is in the syringe.



4) Turn the syringe so that the needle is up. Tap the side of the syringe until all the air bubbles come to the top.

5) Push on the plunger until the air bubbles are pushed out and the correct amount of liquid is in the syringe.

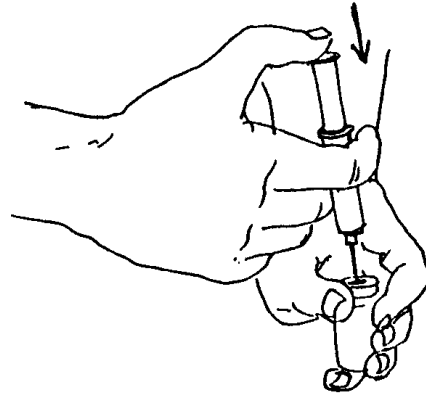


**HOW TO SUCK UP A POWDER MIXED WITH WATER:** (such as penicillin and streptomycin)

1) Follow steps 1-5 of "How to suck up a liquid to inject". Distilled water is the liquid you will suck up. The medicine bottle should tell you how much distilled water you will need.

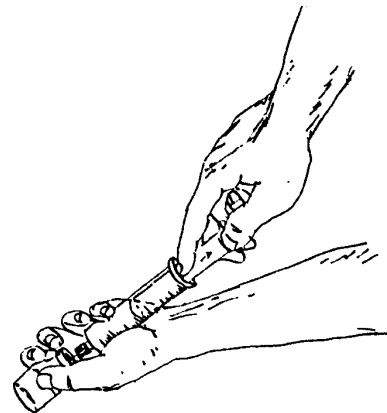
2) Rub the top of the injectable medicine bottle with a clean cloth and alcohol or boiled water.

3) Push the needle through the rubber top and inject the distilled water into the bottle of powdered medicine.



4) Shake the bottle or move the syringe plunger up and down until the powder dissolves.

5) Pull up on the plunger to fill the syringe with the liquid in the bottle.



6) Pull the needle out of the bottle.

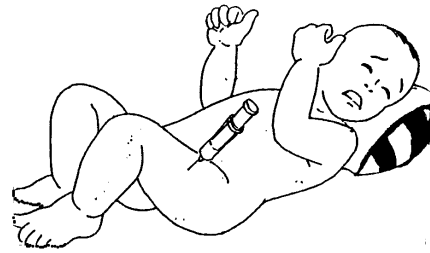
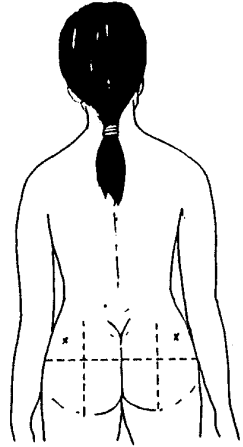
7) Turn the syringe so that the needle is up. Tap the side of the syringe until all the air bubbles come to the top of the barrel. Push the air bubbles and liquid out of the syringe until the correct amount of liquid is in the syringe.

8) The medicine is now ready for the health care worker to inject into the sick person.

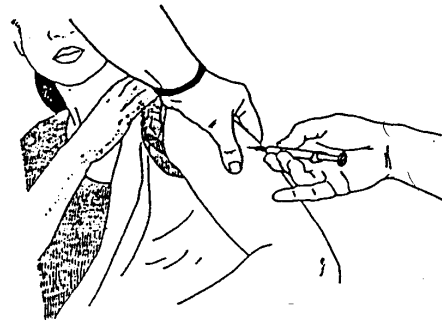
**BE CAREFUL TO NOT TOUCH THE NEEDLE WITH ANYTHING, NOT EVEN THE COTTON WITH ALCOHOL. IF THE NEEDLE TOUCHES YOUR FINGER OR SOMETHING ELSE, BOIL THE NEEDLE AGAIN.**

**WHERE TO GIVE AN INJECTION:**

It is best to inject medicine into the muscle in the upper and outer quarter of the buttocks. Never inject children under 2 years old in the buttocks because you might damage a nerve. Instead, inject children under 2 years old in the upper outer part of the thigh.

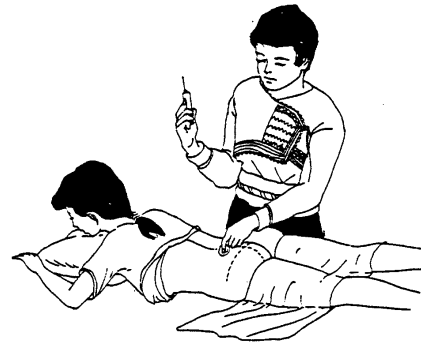


If you are injecting adrenaline, inject into the upper arm.

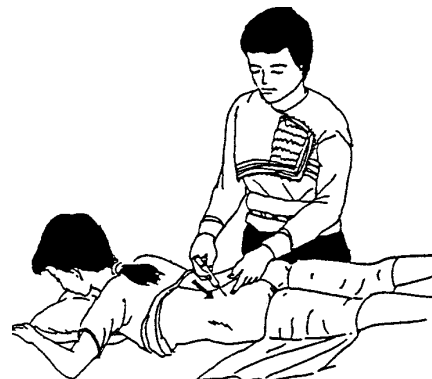


**HOW TO INJECT MEDICINE:**

1) Clean the skin with soap and water or alcohol.

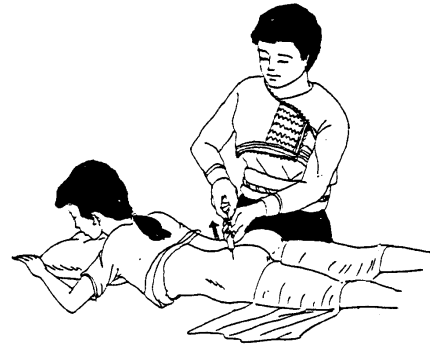


2) Pull the skin tight between your fingers. Put the needle straight in, all the way. If you put the needle in quickly, it hurts less.

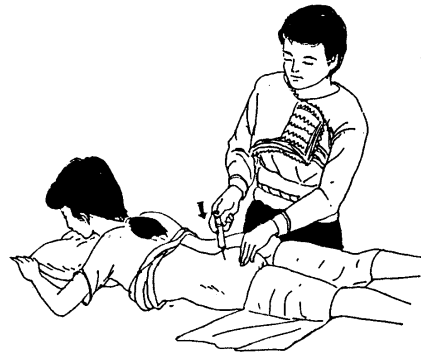




3) Before you inject the medicine, pull up on the plunger a little. If blood enters the syringe, take the needle out and put it in somewhere on either side of the first injection.



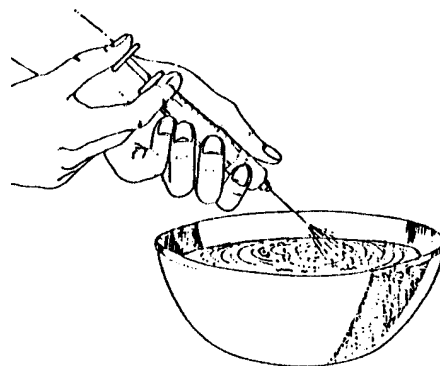
4) If no blood enters the syringe, then inject the medicine slowly.



5) Pull out the needle quickly and clean the skin again.



6) After you inject the medicine, rinse the syringe and needle immediately. Squirt water through the needle and then take the syringe apart and wash it. Boil the syringe and needle for 20 minutes before you use them again.



## **THE MEDICAL KIT**

The village health worker should keep a well supplied medical kit. The village leaders should decide with the health worker how to pay for the equipment and medicine and how to charge people for services and medicine.

The amount of medicines you buy will depend on the health problems you have in the village and the number of people you have in the village. If people must travel very far to a health center, then you will probably need more medicine. The amount of medicine you buy will also depend on the cost and how much money you or the village has to buy medicine.

When you buy medicine, be sure the medicine's generic name, dose and precautions are on the label. If they are not on the label, write them down from the main bottle. Large amounts of medicine are usually cheaper than small amounts. Check the prices, especially for medicines you use a lot.

## **INFORMATION TO HELP THE MEDICINE SELLER**

Some villages have a person who sells medicine who is not a health worker. People often ask the person who sells medicine what medicine they should buy. Many people go to the person who sells medicine before they go to the health worker. Sometimes the person who sells medicine sells medicine that the person does not need.

The health worker and person who sells medicine should cooperate. People should visit a health worker before they buy medicine. The health worker should write down the medicine the people need and the people should take the paper to the person who sells medicine. This training material might help the person who sells medicine. You can help the person who sells medicine understand what medicines to give for common sicknesses.

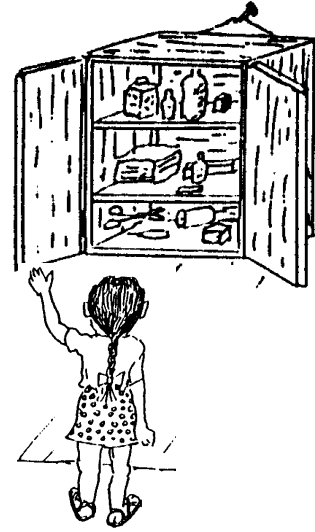
Some things you should emphasize are:

- \* People should buy nutritious foods instead of vitamin drinks or injections.
- \* People should not buy medicine to inject, especially if the medicine is available in a pill or liquid. Only a health worker should inject medicine.
- \* Sell paracetamol or aspirin instead of expensive cold medicines.

Show the person who sells medicine the information in this book to help him understand. The person who sells medicine should never sell damaged or old medicine. Encourage him to stock the medicines included in this book. Encourage him to write the name of the medicine, the dose and the precautions on the medicine container that he gives to people. If people trust the person who sells medicine and he is helpful, then they will probably buy medicines from him.

## HOW TO CARE FOR THE MEDICINE KIT

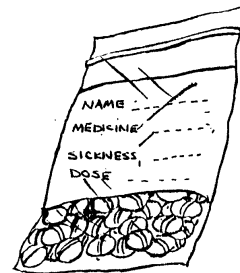
\* Keep all medicines where children cannot get them. Any medicine can poison a person who takes too much.



\* Keep medical supplies together in a clean, dry, cool place. Be sure rats and bugs cannot get to the medicine. Keep equipment in a waterproof bag.

\* Label all medicine. Be sure the name, dose, and precautions are on the bottle.

\* Replace medicines before they are all gone.



## EQUIPMENT FOR YOUR MEDICAL KIT

<u>Equipment</u>	<u>Number</u>
waterproof bag to keep equipment in	1
sterile gauze pads in sealed envelopes	20
1 inch, 2 inch and 3 inch gauze bandage rolls	2 each
elastic bandage, 2-3 inches wide	4
clean cotton	1 package
1 inch white tape	2 rolls
clean scissors	1
pointed tweezers	1
oral thermometer	1
rectal thermometer	1
syringe, 5 ml	5

<u>Equipment</u>	<u>Number</u>
needles, #22, 3 cm long	4
needles, #25, 1 1/2 cm long	3
syringe, 50 ml	1
suction bulb	1
small flashlight and extra batteries	1
small empty bottles to put medicine in	20
small bags or envelopes to put medicine in	100
metal or plastic basin	1
measuring spoons	1 set
pot and lid for boiling	1

**ESSENTIAL MEDICINES FOR YOUR MEDICAL KIT**

<u>Medicine</u>	<u>Amount</u>
adrenaline (injectable) - (epinephrine)	5 ampules
aminophylline (250 mg)	50 pills
amoxicillin (250 mg)	100 pills
ampicillin (injectable)	3 bottles
amoxicillin syrup (60 ml)	10 bottles
antacid (aluminum hydroxide, magnesium hydroxide)	1 bottle
antibiotic eye ointment - (tetracycline eye oint.)	5 tubes
antibiotic ointment - (Neosporin, Bacitracin, Povidone Iodine)	2 tubes
antiseptics - alcohol (70%)	1 bottle
aspirin - (acetylsalicylic acid)	100 pills
baralgan	20 pills
chlorpheniramine (4 mg)	100 pills

<u>Medicine</u>	<u>Amount</u>
diazepam (2 mg)	20 pills
dimenhydrinate (50 mg)	50 pills
disinfectant soap - (Betadine, etc.)	1 bar or bottle
erythromycin (250 mg)	50 pills
hydrocortisone cream (1%)	1 tube
hydrogen peroxide - store in a dark place.	1 bottle
iron (ferrous sulfate)	100 pills
lindane	1 bottle
mebendazole (100 mg)	100 pills
metronidazole (250 mg)	100 pills
miconazole cream	1 tube
niclosamide	50 pills
paracetamol - (acetaminophen)	100 pills
penicillin V (250 mg)	200 pills
penicillin (procaine injectable)	5 ampules
petroleum jelly	1 jar
phenobarbital (injectable)	3 ampules
phenylephrine syrup (60 ml)	3 bottles
quinine (300 mg)	100 pills
salicylic acid cream (4% or 20%)	1 tube
tetracycline (250 mg)	100 pills
tincture of iodine	2 bottles
trimethoprim/sulfamethoxazole (TMP/SMZ)	50 pills
vitamins (multi)	1000 pills
white vinegar	1 bottle

**LIST OF MEDICINES RECOMMENDED IN THIS TRAINING MATERIAL**

adrenaline (epinephrine)

amoxicillin pills

amoxicillin syrup

ampicillin pills

ampicillin (injectable)

ampicillin syrup

antacid (aluminum hydroxide)

antibiotic eye ointment

antibiotic ointment

antiseptics

aspirin (acetylsalicylic acid)

baralgan

benzoyl peroxide

buscopan

chloramphenicol

chlorphenhydramine

clofazimine

cough medicine with chloral hydrate

cough medicine with codeine

dapsone

diazepam

diethylcarbamazine

dimenhydrate

diphenhydramine (injectable)

diphenylhydantoin

ephedrine

ergotamine

ergotrate

erythromycin

ethambutol

folate pills

gentian violet

griseofulvin

hemorrhoid suppositories

hydrocortisone cream

hydrogen peroxide

iron (ferrous sulfate)

isoniazid

laxatives

lindane

mebendazole

metoclopramide

metronidazole

metronidazole vaginal pills

miconazole

niclosamide

nystatin pills

nystatin vaginal tablets

paracetamol

penicillin V  
penicillin (crystalline injectable)  
penicillin (procaine injectable)  
penicillin (benzathine G injectable)  
petroleum jelly  
phenobarbital (injectable)  
phenobarbital pills  
phenylephrine (nose drops)  
phenylephrine (syrup)  
piperazine  
potassium permanganate  
praziquantel  
prednisone  
probenecid  
promethazine  
quinine  
rifampicin  
salicylic acid cream  
selsun  
silver nitrate (1% solution)  
streptomycin  
sulfathiazole vaginal tablets  
sulfur powder  
sulfonamide  
talc powder



tetracycline

theophylline

thiabendazole

tincture of iodine

trimethoprim/sulfamethoxazole (TMP/SMZ)

vitamin A

vitamins (multi)

white vinegar

zinc pills

PATIENT REPORT

Name of the sick person \_\_\_\_\_ Age: \_\_\_\_\_  
 Male \_\_\_ Female \_\_\_ Where is he from? \_\_\_\_\_  
 What is the main sickness or problem right now? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

When did the problem begin? \_\_\_\_\_  
 How did the problem begin? \_\_\_\_\_  
 Has the person had the same problem before? \_\_\_\_\_ When? \_\_\_\_\_  
 Is there fever? \_\_\_ How high? \_\_\_\_\_ When and for how long? \_\_\_\_\_

Is there pain? \_\_\_ Where? \_\_\_\_\_  
 What kind? \_\_\_\_\_

What is wrong or different about any of the following?

Skin: \_\_\_\_\_ Ears: \_\_\_\_\_

Eyes: \_\_\_\_\_ Mouth and throat: \_\_\_\_\_

Genitals: \_\_\_\_\_

**Urine:** too much or too little? \_\_\_\_\_ Urine color? \_\_\_\_\_

Trouble when he urinates? \_\_\_\_\_ Describe: \_\_\_\_\_

How many times does he urinate in one full day? \_\_\_\_\_

How many times does he urinate at night? \_\_\_\_\_

**Feces:** Color? \_\_\_\_\_ Blood or mucus? \_\_\_\_\_ Diarrhea? \_\_\_\_\_

Number of times a day: \_\_\_\_\_ Cramps? \_\_\_\_\_ Dehydration? \_\_\_\_\_

Mild or severe? \_\_\_\_\_ Worms? \_\_\_\_\_ What kind? \_\_\_\_\_

**Breathing:** Number of breaths each minute: \_\_\_\_\_

Deep, shallow or normal \_\_\_\_\_ Difficulty breathing? (describe) \_\_\_\_\_

Cough?(describe) \_\_\_\_\_ Wheezing? \_\_\_\_\_

Mucus? \_\_\_\_\_ Cough with blood? \_\_\_\_\_

**Does the person have any SIGNS OF DANGEROUS ILLNESS?**

Which signs?(give details) \_\_\_\_\_

\_\_\_\_\_

**Other signs:** \_\_\_\_\_





\_\_\_\_\_





Is the person taking medicine? \_\_\_ What? \_\_\_\_\_





Has the person ever used medicine that caused hives (or bumps), itching, or other allergic reactions? \_\_\_\_\_ What? \_\_\_\_\_





The sickness is: Not very serious: \_\_\_\_\_ Serious: \_\_\_\_\_ Very serious: \_\_\_\_\_





**On the back of this form write any other information you think is important.**





			
Name:			
Medicine:			
For:			
Dosage:			





			
Name:			
Medicine:			
For:			
Dosage:			





			
Name:			
Medicine:			
For:			
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